ENCYCLOPEDIA OF

AMERICAN BUSINESS HISTORY

CHARLES R. GEISST



ENCYCLOPEDIA OF American Business History

Volume I

CHARLES R. GEISST



Encyclopedia of American Business History

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INTRODUCTION

Over the last 15 years, business history has exploded as a discipline, while much business history also was made during the boom economy of the 1990s. As a result, the need for a business history encyclopedia has become more important as a means of chronicling these events and showing their antecedents, stretching back to American independence.

The Encyclopedia of American Business History is the first serious attempt in several decades to describe the major business events, institutions, and individuals in American history. Readers will find entries crossing all of the traditional categories-descriptions of individuals, events, companies, legislation, and movements that have had a significant impact on American history and business life. Each entry is accompanied by a short bibliography that will enable the reader to pursue the topic further. They reference the best known or most general books or articles and have been chosen as the next logical place for a reader to look up information. But in some cases, little information has been written about the entries to date, although they have been included because of their importance. A more general bibliography is included at the end of the volume.

Because much of business history is still in the making, we have tried to make the entries in this volume as up-to-date as possible. In some cases, this required arbitrary decisions about what material was included and excluded. The guiding principle used here was to include material that was developed enough to allow the reader to pursue the subject in greater detail. Some of the more recent material may stand the test of time, while other recent entries may disappear in the future. Not all material once thought relevant has weathered the decades and centuries well.

This encyclopedia's entries begin with the period after American independence. Beginning a historical timeline is always difficult, but the founding of the Bank of New York and the New York Stock Exchange is a convenient general time at which to start. A few entries precede this period, but the overwhelming majority of entries date from the late 18th century. Encyclopedia entries traditionally are narrow in their scope except for the entries on trends or time periods. In order to allow readers to get a broader sense of their importance, each entry is cross-referenced to other entries of related importance so that by reading them together, readers can get a better sense of their importance and effects on business life. A timeline has also been included so that the major events in business history are presented visually.

The vast majority of these entries center around individuals, companies, laws, and trends in business. In a few cases, readers will find entries that are not necessarily American but are universally known and well-established tools used in business practice. Their effect on American business and finance is indisputable, and they have been included in the list of entries.

* * *

Traditionally, much of business history has been dominated by finance, and this current volume

reflects that influence to an extent. In the 19th century, record keeping was not exact, and many of the records and accounts that were bequeathed to posterity were passed down by institutions like the New York Stock Exchange, the country's oldest surviving business institution (along with the Bank of New York). As a result, many financial and banking events were duly recorded, while other areas of business, like accounting and advertising, were mainly ignored until more recently.

Other than finance, the area of business that received the most attention in the 19th and early 20th centuries was manufacturing, traditionally considered an American strength and an area of innovation as well as national pride. Many innovations were uniquely American, while others were borrowed from Europe but refined to the point where many people tended to consider them as American. One of the hallmarks of American business and industry was an ability to produce vast quantities of manufactured goods, giving the country a distinct advantage over the European competition. In many cases, the easy availability of many of these goods, such as steel and automobiles, led many casually to believe that they had their origins in the United States.

Only when manufacturing and production were well established did the management theorists enter the business scene, beginning early in the 20th century. Efficiency became the goal of business when it became apparent that production was no longer a serious issue. Management theory also rose at a time when organized labor was flourishing, giving more credence to efficiency theories and new ideas about production and distribution of goods, since labor costs were rising as the unions pushed for better wages and benefits for their members. In order to cover the increasing costs, business had to adopt new methods that would produce better economies of scale and reduce fixed and variable costs.

Advertising and marketing also began to develop in the 20th century. In the 19th century, billboard and print advertising were the major methods of informing customers about new products. After World War I, consumerism exploded on a scale not witnessed before; getting a message to consumers about products became increasingly difficult and competitive. This led many marketers to begin studying consumer behavior and buying patterns. In addition to marketing, the field of public relations also grew substantially, demonstrating that image was becoming as important as quality. Many industrialists and financiers hired public relations experts, as did many companies keen to show themselves in the best possible public light.

The 1920s became a crucial decade for the development of American business, both positively and negatively. Automobiles, radios, and new home building led the charge during the decade, and production reached historic highs, fueled by a booming stock market and low interest rates. A property boom in Florida also attracted many investors and speculators and led to the rapid development of infrastructure in the state. Consumer credit also was introduced, allowing many customers traditionally relying on cash to pay for consumer durables on time. But the party ended abruptly in October 1929, when the stock market crashed. Asset values declined precipitously from their inflated levels, and the country quickly sank into the Great Depression and would not fully recover until the years following World War II, when production levels again increased to, and often exceeded, those of previous years.

The 1920s also are crucial in understanding business history. Modern consumer society was born during the decade. Consumption reached two-thirds of gross domestic product, and the role of the consumer and consumer financing became entrenched. Equally important for students of business history (but less well known) is the fact that better record keeping began in the 1920s, as the government began collecting more systematic and uniform business statistics than was previously the case. Economic statistics especially began to replace the anecdotal evidence used heavily in the past by commentators and writers, especially those who wrote about finance and the markets. Although somewhat rudimentary by later standards, this record keeping and statistics gathering also marked the beginning of the modern era in business, when soft numbers and ideological preferences gave way to a more empirical method of studying business phenomena.

Although the Great Depression and World War II interrupted this cycle, it would resume again in the 1950s and continue unabated until the present. As business developments continued at a dizzying pace for the rest of the century, the standard areas of business inquiry were established. Manufacturing and production, finance, advertising and marketing, management science, and accounting were all well entrenched and would be joined by the new art of computer science later in the century. Internet-based business would follow in the 1990s.

While the 1920s remain a crucial decade for business history, another more general event is also crucial to understanding the evolution of business and the modern corporation. In the second half of the 19th century, a process began that built momentum as the years passed. This was the phenomenon known as the rise of managerial capitalism. As companies grew larger, the need for capital for expansion grew, as did the need for bringing in managers from outside the close ranks of the company or the family members who founded it. These professional managers marked the rise of managerial capitalism and ushered in a new period of American business history. Labor was now more divided than ever before in many firms, and these managers were employees rather than owners of the company. Often, they brought an expertise badly needed if their companies were to survive and prosper. The concomitant rise of management theory early in the 20th century certainly helped the movement toward professionalism within the managerial ranks. And business schools began to be founded, catering first to graduate students and then undergraduates, seeking to produce new generations of potential managers imbued with theory at early stages in their careers.

Some events became watersheds in American history and have received emphasis in the entries that follow. In the 20th century, the stock market crash of 1929 and the Great Depression set off a chain of events that profoundly altered business for the rest of the century. The precipitous market collapse and the string of bank failures that had been occurring throughout the 1920s set off a torrent of new legislation in the Hoover administration and the first administration of Franklin D. Roosevelt. New securities and banking laws were established, and the new accounting standards required by the Securities Exchange Commission, itself a product of the new legislation, established generally accepted accounting principles that survive to the present day.

Even when the crises were not created by the stock market or domestic events, the ramifications could be felt throughout the business community. The currency exchange crisis occurring in the summer of 1971 resulted in a realignment of the world's major currencies, a subsequent change in American bank regulation, and the eventual introduction of the euro as the world's second major reserve currency behind the dollar. These events often are overlooked by business historians, who tend to concentrate on domestic issues, but are included here because of their far-reaching effects on American business and history.

While finance and manufacturing remain the two oldest fields in business history, recent developments in accounting history and advertising history have given a more complete picture of American business over the last two centuries. Also, scandal has often interrupted to make these once arcane fields more important. The collapse of the Enron Corporation and WorldCom early in the 21st century made vital a reexamination of the long-standing securities laws and accounting principles established since 1933, especially since they occurred while what were widely believed to be the most stringent securities and accounting principles in the world were in effect.

Business history also attests to the legacy that immigrants left on American affairs. Although many of those names today are assumed to be American, readers will notice that Alexander Graham Bell, Alexander Brown, Andrew Carnegie, John Jacob Astor, Samuel Insull, Jacob Schiff, Cyrus Vance, and Alexander Hamilton, to name but a few, all came to the United States at various stages in their lives and left an indelible imprint. Whether they came as children or as adults, all were able to capitalize on the opportunities afforded them and build empires based on steel, telephones, fur trading, and finance. Many of the original institutions they built, especially in fur trading and finance, were designed after European models preceding them but would emerge as uniquely American institutions.

Many of the opportunities immigrants as well as established Americans were able to exploit occurred in a growing economy free of many of the regulations known today. Railroad regulation did not occur for several decades after the lines were first widely used, and many regulations over other industries did not occur until the first third of the 20th century. Congress did not enact the first permanent income tax until 1913, so that many early entrepreneurs had already built substantial fortunes, and their families were well established by the first world war. When combined with the lack of meaningful statistics about many American industries and government, this only added to the highly anecdotal nature of American business. After early attempts at regulation, the introduction of the income tax, and closer study of the nature and character of business, attitudes began to change in the era of managerial capitalism, which had already entered its third generation.

Until the period following World War I, the United States was an importer of capital, dependent upon Europeans for money for long-term infrastructure investments, such as railroads and communications. As a result, many banking houses arose to channel European investments into the country. Although many of them are long since departed, either gone out of business or absorbed by other larger institutions, their historical record prior to World War I is important for understanding the nature of the United States before it emerged as a world power.

In the 1980s, this trend was reversed, and the United States again became dependent on foreign capital as its trade and budget deficits began to increase and foreign investment in both tangible assets and domestic securities became vital. Although the issue raised much attention and debate that continues to the present, in business history it is not a new topic, only the current chapter in American trade and foreign investment.

Beginning in the same decade, deregulation became the avowed policy of both Republican and Democratic administrations, and many New Deal and Progressive-era regulations fell by the wayside. Regulation of certain industries, which began a slow and often tortuous history in the 19th century, fell by the wayside in favor of deregulation in the name of freer markets. Globalization of the marketplace also occurred rapidly, helping to integrate many of the world's markets in both tangible and intangible products and services. Both trends demonstrated that business history to date has been a mix of the old and the new. The rapid pace of change has made the need for an encyclopedia encompassing these events, personalities, and companies more important than ever.

advertising industry American advertising is a huge and powerful industry with expenditures approaching \$250 billion in 2001 in the United States alone, with more than \$450 billion spent worldwide. The biggest advertisers are the nation's manufacturers of automobiles, food, soft drinks, beer, and tobacco. Advertising expenditures pass through thousands of advertising agencies that primarily create the ads and buy the space or time in the media. Some agencies have formed global corporations with worldwide connections, while other, smaller agencies have chosen to specialize in retailing, direct mail, and minority markets, among other services.

European colonists brought the idea of advertising with them to America, but the concept was slow to take hold. Colonists had little need to advertise their goods and services for sale over a wide area. In 1704, the first known newspaper advertisement appeared in the *Boston Newsletter*, offering real estate for sale. During the 18th century, the *Pennsylvania Gazette* was the first newspaper to print advertisements with illustrations. And the first magazine advertisement appeared in the May 1741 issue of *General Magazine*. The majority of advertising centered on land, runaways (slaves and indentured servants), and transportation. Notices selling slaves also constituted a good percentage of these advertisements. The remaining ads were lists of goods offered for sale by local merchants and descriptions of books newly published. These simple announcements basically answered the readers' two questions—where and when? Advertising then changed dramatically.

The Industrial Revolution brought bigger and faster steam presses, lithography, new methods of paper-making, and color reproduction techniques that made volume printing cost-effective by the mid-1800s. At the same time, the country's burgeoning urban population, booming economy, and western expansion created a demand for news about business, travel, entertainment, and the availability of goods and services. This led many newspaper publishers to consider advertising as a vital source of revenue; some even included the word "advertiser" in the paper's name. The typical newspaper page looked much the same as our present-day want ads or legal announcements, with little white space and few illustrations to separate the ads.

A key development in the newspaper world was the introduction of the "penny paper," which cost only 1 cent compared to the more common 5 or 6 cents. At this low price, the papers planned to sell a lot of advertising to subsidize revenue. The result was that newspapers sold enormous amounts of space in one-inch chunks. Unlike newspapers, magazines made most of their money from subscriptions and did not accept paid notices until the 1870s.

With improved methods of transportation, manufacturers distributed their goods over wider areas and thus required sales promotions that reached beyond their local region. Advertisers found that the media arrangements needed to print their announcements included a myriad of details and time-consuming tasks. These included identifying effective newspapers, negotiating rates, directing the printer, confirming the insertion, and sending in payment. To fill this need, newspapers began paying agents to sell space to advertisers and thereby gave birth to an entirely new business, the advertising agency.

The first advertising agent in America was Volney B. Palmer, who started in Boston in 1841 and soon opened offices in New York and Philadelphia. Still, there were barely a half-dozen



Advertisement for farming equipment, ca. 1870 (LIBRARY OF CONGRESS)

such agencies as late as 1865. By the last part of the century, however, the newly opened agencies began to offer their services to advertisers, promising help with writing the ads, seeing that they were placed in the best possible locations, and trying to get the best possible deal with the paper. Like today, the agency is typically paid a commission by the newspaper, magazine, or television company. The advertising agency collects the money for the bill from the advertiser, takes out a 15 percent commission, and passes what is left to the newspaper or magazine or media station.

Many did not consider advertising an honorable practice. Without any formal regulation, advertisements for dubious health remedies, getrich-quick schemes, and other outrageous fakery filled the pages of national newspapers and magazines. The ad copy, commonly called "puffing," had no limit to the claims it made. This image was not helped much by advertising for patent medicines, which were the first products to heavily advertise on a national scale. However, the patent medicine companies, desperate for places to advertise, recognized that pages in magazines could efficiently promote their products.

Ads also provided a new source of income to magazine publishers. At this point, the role of the magazine publisher changed from being a seller of a product to being a gatherer of consumers. For example, *Collier's, Ladies' Home Journal, Saturday Evening Post, American Magazine, Woman's Home Companion,* and *The Delineator* were promoted in the business world as being created primarily as vehicles for advertising. These new magazines created new opportunities for national advertisers as well as new demands on agencies.

With the rise of national advertisers and the advent of new media, advertising agencies changed to meet the demand of American business. Agencies expanded beyond their initial role as sellers of newspaper space. Some agents formed billposting companies, which erected their own boards and leased space. Others organized streetcar and magazine advertising, selling the media on a national basis. Agencies also learned how to create advertising campaigns and plan marketing strategies.

This activity led to the creation of national, and sometimes global, advertising organizations. New York City, the nation's leading city in domestic and foreign trade, emerged as the center of advertising as major agencies opened up shop: N. W. Ayer & Son (1869); J. WALTER THOMPSON (1871); George Batten Co., later BBDO (1891); and Bates Agency (1893). Mathilde C. Weil, Mary Compton, and Meta Volckman operated their own agencies in New York, while other women found places in business as copywriters, advertising artists, publishers, agents, and representatives.

After the Civil War, industrialization, rapid urbanization, and massive immigration changed patterns of social life and the character of the American middle class. Manufacturers began to exploit people's desire for fashionable things, as material goods became visible symbols of personal worth and identity. Marketers soon recognized that with a memorable brand name and attractive packaging, they could charge a higher price for their products; in turn, they urged consumers to accept no substitutes. Nationwide advertising put the trademark before the readers, and the copy told why the product was better. As a result, customers knew the brand they wanted before entering the store. Thus, early manufacturers boxed and advertised hundreds of cereals, packaged soaps, flour, cigarettes, matches, canned vegetables, fruits, milk, and soup.

By the turn of the century, manufacturers routinely introduced new brand-name products with a wave of advertising. Advertisers also gradually began to turn their advertising entirely over to agencies. With full responsibility for campaigns, the advertising agencies evolved into their presentday form within the first decade of the century. Advertisements now were but one component of planned campaigns that had to be integrated into appropriate and sound marketing strategies. Skilled copywriting, layout, and illustration became important in achieving continuity and strengthening selling appeal. The role of account executive also expanded from simply bringing in new business to providing a needed liaison between the business-oriented client and creative staff, while space brokers continued to shop around for the lowest bids for each media schedule. Market research, however, proved slower in getting started than copywriting, layout, and account management.

When four-color front and back covers and one- or two-color interior ads became standard by 1900, magazines exploded with color. While humor, jingles, and trademark characters kept the names of products in the public's mind, they did not always sell them. A new advertising approach, called "reason-why" copy, shifted the focus of ads to sales arguments designed to overcome any resistance.

This hard-sell style was in sharp contrast to the simple brand-name identification campaign that sold the product name to the public. The print copy then had to convince customers they should buy the product, and at the same time, the sales pitch had to convince the merchant that he could make money by stocking it. In short, the copy style was straightforward and direct. It stated firmly what the product did and how it would benefit the buyer. In the process, reasonwhy practitioners John E. Kennedy, Claude Hopkins, and Albert Lasker established the copywriter as crucial to ad agency operations.

Until 1906, the advertising of this period was completely unregulated. In that year, Congress passed the Pure Food and Drug Act, which required manufacturers to list the active ingredients of their products on their labels. Still, advertisers could continue to say just about anything and did.

The emergence of advertising as a legitimate enterprise was perhaps evidenced with the outbreak of World War I, when "patriotic" businesses, citizen groups, and even the government kept company names in the public eye and created national advertising programs to gain public support. After the 1918 armistice ended the war, manufacturers increased their advertising budgets and spurred the return to a consumer economy.

Following a brief depression in 1921, the economy took off on a period of rising prosperity. People's newly acquired affluence also provided manufactures with a ready-made mass market. Ads sold cosmetics and goods to improve appearance—and an endless stream of new inventions to save time, eliminate the need for servants, permit the wife to leave the home, and improve the life of everyone. It was also a time of the general distribution of the telephone, electric light bulbs, electric phonographs, and cameras. The radio, another invention in this era, would have a profound effect on advertising and society.

Agencies seeking to gain a professional standing for their work supported the trend toward scientific advertising. National advertisers with multimillion-dollar budgets sponsored market and psychological research to ensure that their advertising proved an effective marketing tool. Professional journals advised the advertising industry that 80 percent and more of the readers of advertisements were women. Also, women were emotional; therefore, ads should portray idealized versions rather than prosaic realities. Keep the copy personalized and intimate. To fit these requirements, ads were filled with short stories where the woman was concerned about the impression she was making, her success in holding her husband, and the health or intelligence of her children.

Newspapers and magazines dominated mass communications until the first commercial radio broadcast in 1920. Over the course of the decade, radio emerged as a major industry through both the marketing of radio sets and the selling of airtime to advertisers. Most early station managers and many public officials, however, did not welcome commercial advertising messages, fearing that the dignity of radio would be compromised by the advertising chatter. But broadcast operating costs and pressure from the potential advertisers forced the issue, and commercial messages on radio eventually became acceptable. Ever since, radio has accepted advertising's financial support.

At the same time, J. Walter Thompson led the ad industry in both innovative copy styles and the variety of services offered to clients. The agency's billings more than tripled, from \$10.7 million in 1922 to \$37.5 million by the end of the decade, making it the industry leader in total billings, a position it maintained for the next 50 years.

The end of the Roaring Twenties was signaled by the stock market collapse of October 1929. In the worst depression in American history, a staggering number of people were unemployed, there was little money to spend, and few goods were sold. For the rest of the decade, until World War II broke out, the economy remained largely stagnant, and advertising suffered like any other sector of the economy. The total volume of advertising revenue plunged nearly 70 percent—from a 1929 high of \$3.4 billion to a low of \$1.3 billion in 1933.

Admakers faced the difficult task of promoting products that Americans either could not afford or were hesitant to purchase. In response, admakers increasingly resorted to hard-sell and even sensationalist campaigns. Ads of the 1930s were jammed with text, threatening slice-of-life stories, contests, premiums, prizes, and two-forone promotions. This resulted in a surprising backlash. New government regulations created heavy supervision and control over the way advertising was practiced, while a consumer revolt produced a series of commercially popular books that dramatized the most questionable advertising practices.

Another notable event during these years was the emergence of radio as a significant advertising medium. Different from present television formats, in which each commercial sells only one product, in 1930s radio the whole show advertised one product. Soap operas, begun in 1932, and so named for the soap companies that created and sponsored them, dominated daytime. Comedies and variety shows played in the evenings.

Advertising contributed to the World War II effort as well. After the attack on Pearl Harbor,

the U.S. government revived the poster and ad programs that had been successful in World War I. The Office of War Information formed the War Advertising Council in 1942, producing the most extensive advertising campaign in history, promoting war bond sales, internal security, rationing, housing solutions, and precautions against venereal disease. As defense production increased, many wartime advertisers also found that the themes of patriotism and conservation fostered consumer loyalty and sold goods. With the defeat of Germany and Japan, the productive wartime economy slowly transformed into an even stronger consumer economy.

Following World War II, advertising realized its greatest prosperity since the 1920s. Between 1945 and 1960, gross annual advertising expenditures quadrupled, and automobiles replaced packaged goods and cigarettes as the most heavily advertised products. During this period, many advertising agencies merged, opened offices overseas, and expanded their services. This trend toward mergers arose as clients demanded more services such as research, sales analysis, package design, and publicity. Advertisers also competed in an increasingly cluttered marketplace as business boomed. For every new product four or five major competitors already existed. In order to sell more, businesses advertised more and demanded that marketing and advertising departments claim a scientific basis for their work.

And then there was television. Its rise from pre–World War II science experiments to a television set in nearly every home occurred in the 1950s. The developers of the new medium tapped the experience of the early radio broadcasters. Recognizing that shoestring operations characteristic of many radio stations were no longer feasible, TV established networks of affiliated stations. Initially, the national commercial networks were limited to the big three—CBS, NBC, and ABC.

As had been the case with radio, the television networks at first served merely as production and transmission facilities, while advertisers controlled the programs. Philip Morris cigarettes, for example, owned *I Love Lucy*, General Mills sponsored *Betty Crocker's Star Matinee*, and Dutch Masters cigars funded the *Ernie Kovacs Show*. By 1950 TV advertising revenue reached \$100 million; soon thereafter TV revenues overtook those of radio. Four years later, in 1954, television became the leading medium for advertising. By 1960 nearly every home had a television set.

The first television ads were simply televised radio commercials, and sometimes the announcer could even be seen holding the script. These commercials, as well as most programming until 1957 (except filmed entertainment), aired live because videotape recording had not yet been invented. Animated commercials also reached a zenith in the late 1950s, in part because they were less costly than glamorous models and actors. Advertisers also targeted children as a specific market to sell toys, cereals, and candies.

Full sponsorship of commercial entertainment faded from television during the 1960s when most advertisers decided that programs were too expensive to sponsor and strategically ran their messages on several other programs. When the networks took over the responsibility for programming from advertisers, they at first referred to advertisers whose commercials appeared during their programs as "participating sponsor." Today most broadcast advertising is simply sold as spot announcements or "spots" that is, the breaks between the programs.

Scenes of modern life, sentiment, and a reliance on science and technology characterized advertisements of this era. Two of the most significant advertising personalities of this period were Rosser Reeves of the Ted Bates Agency and consultant Ernest Dichter, best known for his motivational research (MR). Reeves emphasized science and research, and his ads typically featured simple repetition of a single theme, or the "unique selling proposition" (USP). Also, Reeves pioneered the use of the new medium of television as a force in American political campaigns. In 1952, he sold presidential candidate Dwight Eisenhower in the same way that he promoted toothpaste, with a USP: "Eisenhower, man of peace."

Consumer researcher Ernest Dichter pioneered the MR approach, replacing the statistical techniques of polling and counting with concepts derived from psychology and psychoanalysis. MR examined what triggered people to make choices on the subconscious and unconscious levels. Noted for his work on Chrysler, for example, Dichter deduced that more men bought a sedan even though they were attracted to a convertible, because they associated the hardtop with their wife and the sportier vehicle with a mistress. But MR was not without its critics. The publication of Vance Packard's best seller The Hidden Persuaders (1957) warned the public that large-scale efforts were manipulating people "against their free will."

Advertisers, too, reinforced traditional family values. A profusion of ads pictured idealized versions of the mythic conventional family with well-behaved children and narrow gender roles. However, in the following decade people turned from science to inspiration, youth rebelled, and women and African Americans demanded inclusion and fairness.

Advertising during the 1960s was slow to respond to the massive social changes of the era. While the nation was struggling with civil rights, the Vietnam War, and the sexual revolution, advertising often portrayed women and minorities in subservient roles. It appeared that only white people bought and used products, and that women had few aspirations beyond the home and family.

What was revolutionary about advertising in the 1960s was "creatives" (art directors and copywriters) having a bigger say in agency management. Since the unique style of the ad design was so closely identified with a single artist and a single copywriter, the new project teams worked better in small agencies rather than in huge advertising companies. The result was that accounts moved their work from old-line, traditional agencies and took their campaigns to innovative, boutique advertising companies that were fast and flexible. And a wide variety of products, notably Pepsi, traded on youth and the idea of youth. The creative revolution, and the look it produced, is most often associated with four famous advertising agencies: Leo Burnett, Ogilvy & Mather, Doyle Dane Bernbach, and Wells Rich and Green.

In 1935, copywriter Leo Burnett opened his shop, Leo Burnett Co., in Chicago. Like Reeves, Burnett focused on the product but also sparked interest with good artwork, information, recipes, and humor. Burnett's campaigns used a host of continuing characters called "critters," as well as jingles, in both print and television ads. Likeable, animated characters created by Burnett include the Jolly Green Giant, Tony the Tiger for Kellogg's Frosted Flakes, and Snap! Crackle! And Pop! for Kellogg's Rice Krispies. The familiar cowboy, the Marlboro Man, became one of the great campaigns in advertising history.

When David Ogilvy opened his agency on Madison Avenue in 1949 (later Ogilvy & Mather), he believed that an ad should be a dignified explanation of what was being sold. The ad followed the Ogilvy formula: a handsome picture, a long headline, and straightforward, low-key copy. Ogilvy also devised unique hooks to capture the reader's attention, and then repeated them to link his ads together. For example, the Hathaway man's eyepatch, the Schweppes salesman's Van Dyke beard, and the quietly ticking clock in the dignified Rolls-Royce all became identified with their brands.

The innovative approach of Bill Bernbach and his New York–based agency Doyle Dane Bernbach (DDB) represented another leading force in advertising. His ads were humorous, limited to a single selling point, and sometimes used only one sentence or two to a page. There were the campaigns for Volkswagen, Levy's Rye Bread, and Alka-Seltzer. He believed that the purpose of an ad was to persuade people to buy, and anything that detracted from that idea and those words was bad design. Admakers need to simplify and to dramatize the selling idea to make memorable the message of the advertisement.

Mary Wells's agency Wells Rich and Green started as one of the first major agencies ever headed by women. Wells produced memorable commercials for Alka-Seltzer's "Try it, you'll like it." And for the Braniff International Airlines "Flying Colors" campaign, she painted the planes pastel shades and dressed the stewardesses in Pucci outfits.

It was also the beginning of the merger movement that swept the industry throughout the 1970s and into the next. Advertising agencies grew rich in the 1960s and early 1970s as corporations poured their money into creative campaigns. The ad agencies then poured their profit into in-house research, and they got larger. But that trend changed in the mid-1970s, when a severe recession and double-digit inflation stifled the economy. What had started as small, flexible idea-houses in the 1960s had become large and sluggish. The need for costly research activities and the huge sums of money resulting from advertising contracts set the agencies up for a wave of mergers and takeovers in the 1980s, combining them into a far smaller number of huge corporations.

At the same time, the civil rights movement led to more cultural diversity throughout the advertising industry. The most noticeable reform involved presenting African Americans in a range of normal occupations and tasks rather than as demeaning stereotypes. However, few African Americans worked on Madison Avenue in any capacity, professional or clerical. To address this imbalance, agencies created new training programs and white-collar positions for minorities. Several national African-American agencies also opened. In 1956, Vince Cullers had started the nation's first African American–owned full-service agency, followed by Burrell, Inc., in 1971 and UniWorld headed by Bryon Lewis.

Women also took a cue from the successes of the civil rights movement, and the second wave

of the feminist movement hit Madison Avenue. The women of the 1960s were a new phenomenon, better educated and more socially and politically aware. They also represented almost half of the total workforce in the country. In terms of marketing and advertising, women were not going to be influenced by the same advertising and promotional messages. But advertisers continued to address women in terms of "idealized roles" rather than "reality situations." Feminist criticism did not abate until the advertising industry began to pay attention to feminist concerns with gender issues. By the mid-1970s, ads not only depicted the professional woman at work but also increasingly pitched her cars, homes, and insurance.

By the late 1970s, many women had opened their own agencies. Among these were Shirley Polykoff, Jane Trahey, Paula Green, Jo Foxworth, Lois Geraci Ernst, and two African-American adwomen, Joyce Hamer and Caroline R. Jones.

Advertisers faced still other challenges in the health hazards associated with tobacco and a revived consumerism. In 1964 the surgeon general announced that cigarette smoking was a health hazard that required remedial action. For advertisers this meant that warning notices had to be printed on every pack, and cigarettes could no longer be advertised on television and radio.

The 1970s also resulted in added REGULATION. First, a group of Boston women founded the Action for Children's Television, which lobbied the government to limit the amount and content of advertising directed at children. Also, the FEDERAL TRADE COMMISSION and the industry's National Advertising Review Board demanded higher standards of honesty and disclosure from the advertising industry. Most notable among the campaigns judged to be misleading were Warner-Lambert for Listerine, Campbell Soup, and Anacin.

A final point that needs to be made is that both consumers and formal regulatory agencies restricted advertising, yet technological advances posed unprecedented opportunities. The development of the VCR, cable television, and the laser disc all occurred during this period. Also, advertisers learned how to reach more specific audiences through the diversity of new cable TV programming such as ESPN, CNN, TBS, and Nickelodeon. In the 1980s, television advertising was influenced by the rapid-cut editing style of MTV, while infomercials presented a long advertisement that looked like a talk show or a half-hour product demonstration. Then came personal computers, laptops, and hand-held computer systems.

The success of Silicon Valley and the emergence of Pacific Rim countries also led to a flood of creativity from the West Coast. For the first time, New York City no longer dominated the creative scene. Creative marketers could now be found at the offices of California agencies such as Chiat/Day,



Large billboard advertisements in New York City (SPENCER/GETTY IMAGES)

Hal Riney, and Foote Cone & Belding. Other innovative agencies also appeared in such cities as Minneapolis, Dallas, Atlanta, and Portland.

In the 1980s, glamour, wealth, and power were back in style. Well-heeled, well-traveled consumers expected quality goods, fashions, furniture, and architecture. Despite rising production costs and an increasingly cluttered marketplace, manufacturers spent a great deal of money on image building for cosmetics, perfume, and fashion. Advertisers no longer described how their products worked or why they were better or different; rather, powerful images alone were expected to evoke confidence in the brand.

In 1987, however, the downturn on Wall Street signaled the "good life" was out and the "simple life" was back. The recession of the late 1980s continued into the 1990s and led to far reaching changes in the industry. Global competition also put American corporations under pressure to restructure, consolidate, and simplify.

The economic realities of the 1990s, combined with changing demographics and lifestyles, have created a new breed of savvy consumers. Advertisers also had to adapt to the concept that consumers have greater control of the information they receive about products and brands-and consumers give information back to the firms, for example, through e-mail and tracking of Internet surfing. The proliferation of cable television, direct marketing technology, and the growth of interactive, wireless, and broadband technologies has further fragmented the media. A growing investment in advertising has resulted in so much clutter that promotion options, such as online communication, brand placement in film and television, point-of-purchase displays, and sponsorships, are more attractive to advertisers.

As new technology presents new communication options, advertising as a process has not changed. So far, advertising is still a paid, mass communication effort to persuade and inform. As a business process, advertising continues to be one of the primary marketing tools that contribute to profits by stimulating demand and nurturing brand loyalty.

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Juliann Sivulka

airline industry The U.S. airline industry is responsible for transporting more than 600 million passengers and 18 million pounds of freight per year, and employs approximately 600,000 people nationwide. In 1997, passenger and freight revenues exceeded \$89 billion. The industry is comparatively young, just over 80 years old; its robust performance is the result of constant interplay between technological innovations, government regulations, and evolving customer requirements.

The first scheduled air service in the United States was a small Florida air taxi service that began in 1913. However, the modern airline industry dates from 1918, when the U.S. Army inaugurated, and the U.S. Post Office acquired, the Air Mail service. Benefiting from advanced airplanes and engines developed during World War I, the Post Office established a scheduled coast-to-coast network. The Post Office gradually expanded its airmail routes for the next five years.

In the mid-1920s, federal legislation designed to stimulate commercial aviation considerably influenced the development of airlines. The Air Mail Act of 1925 authorized the Post Office to contract with private companies for mail delivery along regional Contract Air Mail (CAM) routes. Ford Air Transport flew the first CAM flight in 1926. Other airlines awarded CAM routes included Western Air Express, Pacific Air Transport, and Varney Speed Lines. Beginning in 1927, PAN AMERICAN AIRWAYS flew international airmail.

Shortly after scheduled services began, the Air Commerce Act of 1926 transferred authority for operating the airmail system to the Department of Commerce. The transfer was complete by 1928. Advances in aviation technology during the 1920s improved the proficiency and reliability of airlines. Blind flying and radio navigation capabilities permitted nighttime and cross-country flights. Many airlines received grants from the Daniel Guggenheim Fund for the Promotion of Aeronautics to finance the development and purchase of airplanes.

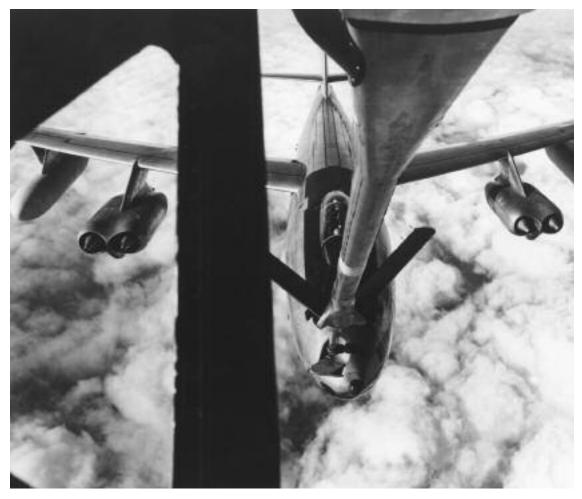
Supportive legislation and operating subsidies encouraged financiers to view airlines as sound investments. As a result, larger, more viable regional airlines appeared. When Jack Maddux acquired Transcontinental Air Transport and Western Air Express in November 1929, the resulting company—TWA—became a major national airline.

Charles Lindbergh's 1927 solo Atlantic flight generated popular interest in air travel. The Air Mail Act of 1930 capitalized on this interest by establishing a premium for airlines that flew passengers as well as mail. Airlines encouraged the AIRPLANE INDUSTRY to develop suitable multiengine aircraft, the ancestors of today's airliners. Among them were the Douglas DC, the Lockheed "Electra" series, and the BOEING 247. During the mid-1930s, airlines shifted their focus from airmail to passengers as their primary source of revenue. Further rearrangement came in 1934, when Congress canceled all domestic airmail contracts due to collusion between the postmaster general and several airlines. New bids were eventually sought, but due in part to this scandal antitrust regulations required all airline operators to divest their aircraft and engine manufacturing holdings. For example, United Aircraft & Transport split into United Aircraft Corporation and United Air Lines. This structure has remained the industry's standard.

Comprehensive federal REGULATION of air commerce began in earnest with the Civil Aeronautics Act of 1938. This act established the Civil Aeronautics Authority (CAA) under the Department of Commerce. One of the purposes of the CAA was to ensure fair competitive practices in the comparatively small industry. Two years later an independent Civil Aeronautics Board was established to control routes, fares, safety, and entry by new airlines.

Developments during World War II significantly influenced the postwar industry. After 1945, airlines had access to larger aircraft with more powerful engines, produced by companies with substantially greater output capabilities. New international agreements and a reorganized CAA favored expansion. Airlines benefited from improved navigation and landing aids. Charter, freight, and regional services appeared, using inexpensive surplus transports.

Jet propulsion, an important wartime technological innovation, significantly altered the industry in the mid-1950s. Fuel efficiency and power initially limited commercial applications, but the development of the Pratt & Whitney JT-3 engine allowed Boeing and Douglas to develop commercial airliners around it: the 707, which entered service in 1958, and the DC-8 in 1959. Though conversion to jetliners proved expensive, by the early 1960s jet aircraft began to dominate air travel and enabled the major airlines to overtake railways and ocean liners as the primary method of long-distance passenger transportation. Concurrent with the development of jetlin-



Aerial view of a Boeing B-47 Stratojet (LIBRARY OF CONGRESS)

ers, an independent Federal Aviation Agency (later Administration; FAA) superseded the CAA in January 1959. The FAA later became part of the Department of Transportation.

In response to the need to carry more passengers more cost-effectively, wide-body airliners were introduced in the early 1970s. However, the oil crisis and an economic recession slowed airline growth; when airlines sought fare increases to offset losses, industry critics cried that regulation had turned airlines into inefficient, monopolistic sluggards. In 1978, Congress passed the Airline Deregulation Act, which ended more than 50 years of direct federal oversight of the industry. The resulting competition inspired innovations such as hub-and-spoke systems, frequent flier miles, and computer reservation systems.

By 2000, airlines were generally prospering. Despite shakeups and mergers, competition thrived, and airlines turned small but consistent profits. New airlines competed and collaborated with major carriers to provide domestic and international service. Nevertheless, concerns about the quality of safety and service led to increasing tensions between airlines and travelers and even the airlines' own employees. Concerns about industry competitiveness in the global marketplace inspired a new round of consolidations. Observers are uncertain whether problems will increase now that airlines answer to stockholders rather than to the government or to customers.

The terrorist attacks of September 11, 2001, in which the world watched transcontinental airliners become weapons of mass destruction, will likely alter for at least a generation the relationship of air travel to American life. Increased security and heightened passenger unease appear to be the new norm. In addition, the price of jet fuel has steadily increased, on top of which several airlines have been embroiled in labor disputes with airline employee unions over salaries and pension plans. All of these factors came into play when United Airlines-the third-largest airline in the United States-declared bankruptcy in 2002, from which it is still trying to recover. The larger airlines are also suffering from the competition being presented by low-cost carriers such as Southwest Airlines and Jet Blue. These smaller airlines have found ways to cut costs, lower fares, and remain profitable-forcing the larger airlines to match their lower fares and thereby reducing profits. As the industry recovers from the losses of both revenue and reputation, however, it will likely resume its pattern of change in response to new competitors, markets, and opportunities.

See also EASTERN AIRLINES.

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Paul Lagasse

airplane industry The manufacture of aircraft, missiles, and related systems is a high-profile and a high-risk industry. Aerospace sales account for nearly 2 percent of the nation's GDP, generating more than \$155 billion in sales and \$10.8 billion in profits in 2000. Success factors include science and technology, the state of the economy, competition, and customer priorities.

The army issued the country's first airplane production contract to the Wright brothers in 1908. Airplane companies were not profit-making manufacturing ventures, but rather small-scale establishments. Many short-lived companies appeared prior to 1917, along with more durable firms such as Martin and BOEING. World War I accelerated industry growth and cemented a permanent relationship with the military. Airplane orders rose dramatically; most were for license production of superior European designs. Because of wartime production control by the automobile industry, airplane production levels never reached anticipated levels. After the armistice, the government canceled more than \$100 million in contracts, and many companies folded.

Growing legislative support, a strong economy, and technological innovations helped the postwar airplane industry grow. New firms capitalized on novel approaches to design or manufacturing. Many of these companies, including Douglas, Lockheed, and Northrop, gained publicity through races and record-breaking flights. Legislation in the 1920s stimulated the industry to design transport aircraft and ensured the continuity of government orders. Popular interest in aviation grew, and financiers began investing in manufacturers. Research led to faster, safer, and more fuel-efficient airplanes. Large trusts such as United Aircraft and Transport Corporation, North American Aviation, and Curtiss-Wright appeared, consolidating airplane manufacturers and airlines under one corporate umbrella. These lasted until 1934, when antitrust legislation permanently separated manufacturers from airline operators.

Through the 1930s, domestic and foreign demand for airliners and warplanes grew dramatically. As the government's call for defenserelated manufacturing intensified, companies frequently sought government aid to build and staff new factories.

After Pearl Harbor, production came under government control. Companies relied on subcontracting and licensing to fulfill mass-production orders. More than 300,000 complete airplanes, 800,000 piston engines, and 700,000 propellers were manufactured between 1940 and 1945. However, as with World War I, sudden contract cancellations at war's end threatened the survival of many manufacturers.

Renewed demand for commercial aircraft softened the blow for several companies. Douglas, the largest prewar manufacturer of airliners, returned immediately to airliner manufacture, as did Lockheed. Attempts by other firms to enter the airliner market proved unsuccessful. Other firms survived by moving into niche markets such as helicopters, light aircraft, and subassemblies.

The president's Air Policy Commission in 1947 issued a report calling for the maintenance of a strong airplane industry to supply the armed forces. Firms began experimenting with jet propulsion and high-speed aerodynamics. The Korean War allowed airplane manufacturers to gain experience mass-producing jet aircraft. The decline in military orders after the war was offset by a rise in demand for commercial aircraft. The stage was thus set for the introduction of jet airliners, which revolutionized not only commercial air transport but also the economics of the industry.

In the mid-1950s, Boeing parlayed its experience with mass-producing jet bombers into the design of the 707 airliner, which entered service at the end of the decade. Douglas introduced its DC-8 jet airliner a year later. Other transitional designs appeared as firms sought to discover a new equation of efficiency, economy, and reliability to accommodate jet engines.

Beginning in the late 1950s, the airplane industry became the aerospace industry as a result of increased military demand for missiles and related technologies. Manned and unmanned spaceflight represented a high-profile opportunity for many firms to succeed in a new field.

Despite efforts to diversify, by the 1960s increasing project costs and decreasing unit quantities per order threatened to bankrupt many companies. There were several high-profile mergers, including McDonnell Douglas and Martin Marietta. Firms came under intense criticism for controversial military projects that were called too costly, over-managed, and unnecessary. By the 1970s, military and commercial sales had stabilized at \$20 billion. Although the number of aircraft produced dropped considerably; critics claimed the industry operated at overcapacity. Manufacturers sought to improve economies of scale by introducing intercontinental widebody airliners. Boeing's 747 was the first, followed by McDonnell Douglas's DC-10 and Lockheed's L-1011. However, with rising fuel costs airlines could barely afford them. Efforts to develop supersonic transports were halted by predictions of low passenger yield, poor fuel economy, and potential environmental hazards.

The doldrums of the 1970s were overcome by the effects of airline deregulation and increased military spending, beginning in the early 1980s. The trend toward fewer numbers of increasingly expensive aircraft continued into the 1990s, exemplified by the Rockwell B-1 and Northrop B-2 bombers and the McDonnell Douglas F-18 and Lockheed F-117 fighters. The "make-orbreak" nature of such contracts, and the relaxation of antitrust scrutiny in the face of international competition, resulted in more joint projects and mergers in the 1990s. For example, the team of Lockheed/Boeing/General Dynamics developed the YF-22 fighter for the air force; the rival YF-23 was developed by Northrop and McDonnell Douglas. Shortly thereafter, Northrop and Grumman announced their merger, followed by Lockheed and Martin Marietta that same year. In 1997, McDonnell Douglas merged with longtime commercial rival Boeing to create the world's largest aerospace firm.

Private and business aviation was never as lucrative as commercial and military aviation. By the late 1970s, major manufacturers had left the field to smaller, specialist companies such as Piper, Cessna, and Lear. After years of strangulation caused by product liability litigation, domestic purchases have risen steadily due to recent legislation designed to reduce the impact of liability suits.

The future of the aerospace industry will likely be oriented toward increasing international competition. Newly opened markets in Asia and eastern Europe represent both opportunities and challenges. U.S. firms will doubtless face tough competition from overseas private and state-owned manufacturers for the civil and military markets of the new millennium.

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Paul Lagasse

American Express Company The American Express Company is one of the most visible companies in the world. Known primarily for its widely used green charge card and blue box logo, American Express provides travel and financial services to millions of people and businesses each year.

The American Express Company has a long history. It was founded in 1850 to carry packages and financial instruments mainly on the RAIL-ROADS; the express offered direct delivery and insurance for its consignments. The new firm was actually a merger of smaller companies run by three legends of American business history: Henry Wells, William Fargo, and John Butterfield. The first two went on to found WELLS FARGO & Company, while Butterfield organized the Overland Mail, the first effort at a land postal link between the West Coast and the East. The three men fought each other often but the benefits of the merger were so apparent that the company survived its internal strife and grew rapidly. By the late 1860s, American Express had formed a CARTEL along with four other express firms (Adams Express, United States Express, Southern Express, and Wells Fargo) to divide territory and control competition within the express business. These efforts at cartelization were remarkably successful, and the five dominated the business for more than 50 years.

The express cartel was able to control its business because federal law barred the United States Post Office from carrying packages over a certain weight. But the Post Office spurred American Express toward an important innovation. In an effort to win a greater share of financial transport, and to prevent the theft of letters containing cash, the Post Office introduced the postal money order in 1864. This eroded a lucrative part of the express business, and in 1881, the new president of American Express, James Congdell Fargo (William's younger brother), authorized the creation of an express money order that quickly won a large market share of the money order business.

Several years later, Fargo was traveling abroad and found it difficult and expensive to change small sums of money from one currency to the next. He returned home determined "to do something" about it. He turned to Marcellus Fleming Berry, the man who had devised the express money order system. Berry created the American Express Traveler's Cheque, a money order with a specific face value and (originally at least) a guaranteed conversion rate into all of the major European currencies. The traveler's cheque—the TC in company parlance—is the most significant original product idea in the company's history.

The traveler's cheque (the company chose the British spelling of "check") was launched in 1891 at a time when Americans were just beginning to travel abroad in large numbers. The cheque was a huge success. In order to service cheque holders, as well as to conduct an international express business, American Express began to establish offices in Europe, which led in a short time to a more general business for travel and tourism throughout the world.

The success of the TC, money order, and travel businesses could not have been more opportune for American Express. In 1905, the express industry was brought under the regulatory supervision of the INTERSTATE COMMERCE COMMISSION; eight years later it faced competition from the Post Office's parcel post; and finally, in 1918, under the stresses of war, the U.S. government forced a merger of all express operations into a separate entity, the American Railway Express Company. But American Express was able to survive the change and expanded its financial and travel operations. By the 1920s, it had a worldwide network of offices.

In the 1920s and for more than 30 years thereafter, the traveler's cheque was the company's main source of profit. The TC's profitability came not from small service charges the company gained on each sale, but rather from the fact that people bought cheques one day but redeemed them later, often weeks later. This meant there was always a balance of money for uncashed cheques, a "float" that could be reliably tracked and invested in safe interest-bearing instruments. By the early 1950s, the TC float had reached more than \$250 million and was invested mainly in municipal bonds, guaranteeing the company several million dollars in annual income. In the 1950s, the company wondered whether a new device for travel and entertainment, a universal charge card pioneered by Diners' Club, posed a threat to the TC, and there was a running debate within the company over how to respond to the threat. Many younger executives wanted to acquire Diners' Club, while some senior officials wanted to create an American Express card. But the only opinion that mattered was that of the chief executive, the autocratic Ralph Reed, and he seemed to oppose any involvement in the "credit card" business. Late in 1957, however, he authorized the creation of an American Express credit card (as they called it then), which was launched the following year.

The effort was so poorly thought out that the card led to millions of dollars in losses over the first five years, and Reed's successor, Howard Clark, tried to sell the card operation. When that effort failed, Clark instead found a skilled manager who turned the unit profitable, and the company embarked on an aggressive market program. The tag line, "Don't leave home without it," became one of the most famous ad slogans of the 20th century, and the card soon surpassed the TC as the company's principal moneymaker.

The success of the card gave the company a high stock price and an urge to use it for acquisitions. Clark acquired the Fireman's Fund Insurance Company, while his successor, James Robinson, added brokerage companies, private and investment banks, and financial advising operations. By the 1980s, American Express was hailed as a "financial supermarket," one of the strongest diversified financial companies in the world.

But the various parts of the company did not always mesh, and before long American Express divested itself of insurance, brokerage, and investment banking subsidiaries. As income fell, commentators wondered whether American Express could survive as an independent entity, especially since the card's profitability seemed in doubt.

But American Express has had a knack for surviving. Over the years, it was threatened by

government regulation, a takeover attempt by the Chase National Bank, and a scandal in a small warehousing subsidiary that almost led to the company's bankruptcy. But American Express survived those crises as well as recent downturns in its fortunes. At the end of 2002, it was still independent, still very profitable, and, with a market capitalization of more than \$50 billion, still a force to be reckoned with in the financial world.

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Peter Z. Grossman

American Federation of Labor The American Federation of Labor (AFL) was the predominant labor organization in the United States from the late 1880s until 1936, when a split occurred that generated the Congress of Industrial Organizations. It was rooted in a culture of labor radicalism that flowed from the post–Civil War period to the Second World War, but in time it became an increasingly moderate, even conservative, force representing particularly (though not exclusively) skilled workers in craft unions.

The founding of the organization can be traced to 1881, when a national gathering in Pittsburgh, Pennsylvania, came together under the banner of the Federation of Organized Trades and Labor Unions of the United States and Canada (FOTLU). It replaced the National Labor Union that had existed from 1866 to 1872 but had been pulled apart by the lure of divergent electoral strategies. FOTLU veered away from electoralism, also seeking to be more efficiently organized and more narrowly focused than the more expansive labor reform group, the Knights of Labor. While some dedicated socialists were prominent among its founding members, other key founders were not, and the federation as a whole helped to consolidate the trend toward an increasingly nonradical "pure and simple" unionism in the U.S. labor movement.

"We have numberless trades unions, trades' assemblies or councils, Knights of Labor and various other local, national, and international unions," declared the call for the national conference that formed FOTLU. "But great as has been the work done by these bodies, there is vastly more that can be done by a combination of all these organizations in a federation of trades." Among the key architects of the new organization were Samuel GOMPERS and Adolph Strasser of the Cigarmakers Union and Peter J. McGuire (often credited as initiating both May Day and Labor Day) of the Carpenters Union. All had come out of the socialist movement, and the influence of Karl Marx is clearly perceptible in the preamble of the FOTLU constitution: "A struggle is going on in the nations of the civilized world between the oppressors and the oppressed of all countries, a struggle between capital and labor . . . This history of the wage-workers of all countries is but the history of constant struggle and misery engendered by ignorance and disunion; whereas the history of the non-producers of all ages proves that a minority, thoroughly organized, may work wonders for good or evil. . . . Conforming to the old adage, 'In union there is strength,' the formation of a Federation embracing every trade and labor organization in North America, a union founded upon a basis as broad as the land we live in, is our only hope."

This preamble was carried over into a new constitution in 1886 that reorganized the organization under a new name—the American Federation of Labor. The AFI's president, from its founding until his death in 1924 (with a one-year hiatus) was the tough-minded Samuel

Gompers, who moved in an increasingly pragmatic direction.

Initially, many associated FOTLU and the AFL with the socialism that had significant influence in some working-class circles of the time. Socialism-favoring replacement of capitalism by social ownership and democratic control over the economy-was not viewed positively in this era of triumphal industrial capitalism. Gompers explained that the allegation of his being part of a socialist conspiracy was a slander based partly on a misunderstanding. "In those early days not more than half a dozen people had grasped the concept that economic organization and control over economic power were the fulcrum which made possible influence and power in all other fields," he later wrote in his autobiography. "Control over the basic things of life gives power that may be used for good in every relationship of life. This fundamental concept on which the AFL was later founded was at that time not formulated in men's minds, and the lines between Socialists and trade unionists were very blurred."

Indeed, during the 1880s, Gompers became known not as an advocate of socialism but as an advocate of what became known as "pure and simple trade unionism." This meant organizing workers into unions that would focus on struggles at workplaces around issues of higher wages, fewer hours of work, and improved working conditions-to the exclusion of radical social causes, whether socialism or anything else. When asked what the labor movement wanted, Gompers once replied simply: "More." Yet Pennsylvania Federation of Labor president James Maurer has left this record of one of Gompers's many "pure and simple" union speeches: "If a workingman gets a dollar and a half for ten hours' work, he lives up to that standard of a dollar and a half, and he knows that a dollar seventy-five would improve his standard of living and he naturally strives to get that dollar and seventy-five. After that he wants two dollars and more time for leisure, and he struggles to get it. Not satisfied with two dollars he wants more; not only two and a quarter, but a nine-hour workday. And so he will keep on getting more and more until he gets it all or the full value of all he produces."

Despite the underlying militancy of this perspective, however, Gompers steered the federation into what labor radicals would denounce as a "class-collaborationist" course. He sought positive relations with business leaders in organizations such as the National Civic Federation, and-with the slogan of "support our friends and punish our enemies"-backed "capitalist politicians" willing to take pro-labor positions. By the early 1900s, he was openly and vehemently denouncing socialists and socialism (though always expressing admiration, even in his endof-life autobiography, for Karl Marx). Nor was he above siding with employers and government authorities in efforts to destroy the radical Industrial Workers of the World (IWW) during World War I. More than this, and despite an expansive rhetoric about the U.S. labor movement embracing all workers, Gompers and those around him adopted bigoted attitudes toward blacks, Asians, and new immigrants from southern and eastern Europe, as well as toward women. By contrast, he was quite vocal and proactive-from the 1917 Russian Revolution onward-in opposing communism within the labor movement as well as globally. Many saw the AFL as white, male, and "100% American"-and while Gompers never argued for such a position, his policies contributed to making this a reality.

The policies pioneered by Gompers were continued by William Green, who assumed the AFL presidency with the death of Gompers in 1924. As an official in the UNITED MINE WORKERS OF AMERICA, Green had favored industrial unionism and union involvement in broad social reform efforts, but as AFL president he would become the foremost standard bearer of the dominant AFL orientation: narrow craft unionism and a "pure and simple" focus on seeking to improve wages and conditions at the unionized workplace. This contributed to the erosion of AFL membership, as skilled trades in many sectors of the economy were being sidelined by the rise of mass production industries.

For many, "pure and simple" unionism had evolved into an exclusive concern for the narrow economic interests of unions' own members, with a disregard for larger social questions. An approach sometimes called "business unionism" often predominated: Not only were union leaders very pro-business (seeking far-reaching accommodations with employers), but also they saw the union itself as a business providing services to its paying members, with union representatives being called "business agents" and notions of democratic control by the membership being replaced by a notion of hierarchical "businesslike" efficiency. With the phenomenal growth of gangsterism in the "roaring twenties," corruption and racketeering made significant inroads among some unions in the federation. And in the conservative political atmosphere of the decade, the AFL inclined toward an acceptance of the dominant laissez-faire philosophy-rejecting the idea of government programs to help disadvantaged workers.

Within AFL ranks, voices of dissent and opposition to craft union conservatism grew. A. Philip Randolph, leader of the all-black Brotherhood of Sleeping Car Porters, successfully fought to get his union into the AFL, and then consistently protested against racist practices in the ranks of organized labor. With the devastating impact of the decadelong Great Depression that began in 1930, increasing numbers joined socialists and other radicals in challenging laissez-faire and pro-business perspectives. Most significantly, a number of unions organized on an industrial basis (including all skill levels and occupations within a given industry) began arguing against the narrow craft orientation of the AFL. This included John L. LEWIS of the United Mine Workers, David Dubinsky of the International Ladies Garment Workers, and Sidney Hillman of the Amalgamated Clothing Workers, who spearheaded the formation of a Committee for Industrial Organization in 1935.

The reaction of Green and other AFL officials to the industrial union challenge was to denounce and finally expel them, only to see the industrial unions transform their committee into the Congress of Industrial Organizations (CIO). The CIO embraced a spirit of union militancy and radicalism (allowing the active participation of various socialists and communists as CIO organizers) that engendered-throughout the late 1930s-a series of dramatic strikes that organized millions of unskilled and semiskilled workers into a variety of new unions: the United Auto Workers (UAW), the United Electrical Workers (UE), the United Steelworkers (USWA), the National Maritime Union (NMU), the Transport Workers Union (TWU), the International Longshoremen's and Warehousemen's Union (ILWU), and many others.

CIO staff member Shirley Quill's description of AFL union officials conveys profound cultural differences between the two federations: "The AFL leaders were exactly what they appeared to be. Representing plumbers, carpenters, electricians and dozens of the old-line organizations, they were crafty, comfortable, conspicuously well-fed, successful powerbrokers in their own fiefdoms. They competently negotiated contracts covering wages, hours, working conditions and pensions, and stared blankly when such arcane subjects as discrimination, minority rights, seniority for women and voter registration appeared on the agenda."

And Victor Reuther (brother of UAW leader Walter REUTHER) later reminisced: "AFL officials periodically journeyed to Florida to spend several weeks, spending a few hours each morning in formal session, then going to the races or golf course or whatever for the rest of the day. The CIO Executive Board, under Philip Murray and then under Walter, usually met in a hotel conference room in some northern industrial city—Pittsburgh, Chicago, New York, or Washington—never too far removed from industrial workers who wanted to come before it to discuss urgent problems."

"Labor's civil war" generated much debilitating conflict and destructive "raiding" practicesoften with AFL unions signing backdoor contracts with employers who were interested in keeping out the more militant CIO. Yet the CIO challenge also played an important role in galvanizing sectors of the AFL (most dramatically the International Brotherhood of Teamsters) to organize on an industrial basis, and in modernizing itself in a variety of ways. More than this, elements of the CIO ferment and experience were brought into the AFL when some of the industrial rebels rejoined the federation. Most dramatic (though quite short-lived) was the return of John L. Lewis and the United Mine Workers. Earlier and more sustained was the "coming home" of David Dubinsky, the liberal-minded ex-socialist, who brought with him not only the ILGWU but also the former communist leader Jay Lovestone. Lovestone would become the architect and director of the AFI's fiercely anticommunist foreign policy, which soon became interwoven with efforts of the U.S. State Department.

An additional point of convergence was the full support that both labor federations gave to the U.S. war effort during World War II-establishing "no strike" pledges and participating in the War Labor Board, for example. Both had also become aligned with the Democratic Party, thanks to pro-labor policies advanced by President Franklin D. Roosevelt. With the end of the war and the beginning of the cold war, a development in the CIO would establish another point of convergence: the massive and thoroughgoing purge of communists and communist-led unions, and the marginalization of other left-wing influences. Not long after, the AFL would take measures to check the influence of racketeering. These developments-and the deaths in 1952 of AFL president William Green and CIO president Philip Murray—set the stage for a merger.

The AFL was now led by ex-plumber George MEANY, of whom more than one CIO leader had a low opinion. Phil Murray had described Meany as "some kind of loud-mouth bum from New York," commenting, "I can't stand him . . . [I] don't want to have anything to do with him." The

younger and more dynamic Walter Reuther one-time socialist, bristling with innovations and idealistic rhetoric—was now president of the CIO. When the merger came, however, and the AFL-CIO came into existence in 1955, it was George Meany, a master of organizational maneuver and expertise, who quickly asserted himself as the dominant force. With the merger, about 36 percent of the U.S. labor force was unionized, an all-time high.

Meany's comments shortly after assuming the AFL-CIO presidency reflect the triumph of an extreme variant of the AFL's "pure and simple" ideology. "I stand for the profit system; I believe in the profit system. I believe it is a wonderful incentive," Meany declared to a group of U.S. businessmen. "I believe in the free enterprise system completely. I believe in the return on capital investment. I believe in management's right to manage." Rhetorically asking "what there is to disagree about," Meany concluded: "It is merely for us to disagree, if you please, as to what share the workers get, what share management gets from the wealth produced by the particular enterprise." Despite the dissatisfaction of labor dissidents, this orientation would be predominant in the AFL-CIO for years to come.

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Paul J. Le Blanc

American Stock Exchange The Curb Exchange, as the American Stock Exchange (AMEX) was known in its early days, was one of the most colorful attractions in New York. The exchange was actually operated on the street, hence the term curb, and orders for execution were yelled down, or hand signaled, to brokers from clerks in windows of the offices overlooking the street. Brightly colored jackets or hats were also worn by the brokers on the street, so that clerks could more easily identify their own broker-a custom still in use on most stock exchange floors around the world today. Hand signals thus became an integral part of this exchange and continue to be used to this day, despite the advent of electronics on the floor. Like other organized stock exchanges, the exchange uses the auction method of buying and selling stocks, whereby all orders pass through a specialist on the floor. After many years of rain, sleet, and snow, the exchange moved indoors in 1921 and was officially renamed the American Stock Exchange in 1953.

For many years, the AMEX served as an incubator for issues that would eventually get listed on this exchange after a period of trading in the "over-the-counter" market. It was from the American Stock Exchange that maturing issues then moved to the NEW YORK STOCK EXCHANGE (NYSE). In the 1960s, that progression began to change when some small companies became listed on the AMEX and grew into investor favorites but never changed their listings. With the growth of the NATIONAL ASSOCIATION OF SECU-RITIES DEALERS Automated Quotations market (NASDAQ) and the aggressive listing efforts of the NYSE, this long-standing procedure has become dormant in recent years. Stocks stay on NASDAQ or move directly to the NYSE, with few stopping at the American Stock Exchange in

between. This has slowed the growth of the AMEX in recent years and forced it to search for other markets and other products.

In 1975, it became the second exchange in the United States to trade listed options, and this has been the exchange's bright spot for the last three decades. Today the AMEX is the second largest volume trader of listed options, behind the Chicago Board Options Exchange, and has been the creator of many innovative derivative products. In addition to options, the exchange has successfully experimented with other hybrid types of instruments that combine features of stocks and MUTUAL FUNDS, especially those that represent a basket of market indicators. These are known as index funds and market baskets.

As a result of pressures created by the 1990s bull market, the exchange needed to establish links with other exchanges in order to survive. The need for capital to expand was intense because of the need for new communications and computer systems. Finally, in 1996 the AMEX was merged with the NASDAQ. The marriage between the two different types of market was initially unsuccessful, and the NASDAQ began searching for a buyer for the exchange. The growth of the AMEX in the future will be intimately tied to its ability to find a suitable merger partner and to continue to develop new investment vehicles that can engender trading in new derivative instruments if not stocks.

See also STOCK MARKETS.

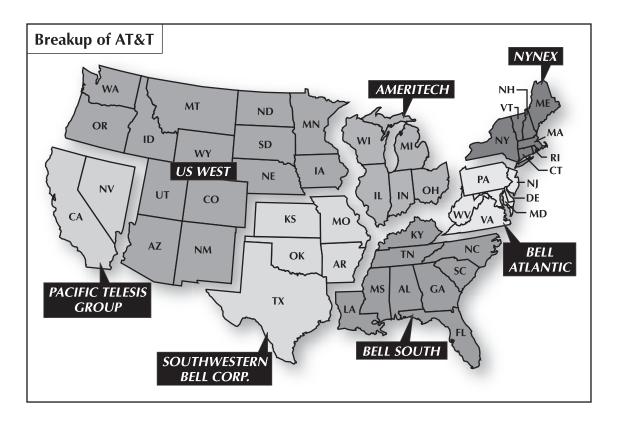
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Lee Korins

American Telephone & Telegraph Co. (AT&T) The American Telephone and Telegraph Co. at its peak in the 1970s was the largest



company on Earth. It had more than 1 million employees and was active in every state of the union. It provided telephone service to almost all Americans, manufactured and leased telephone equipment, and conducted research that led, among other things, to the development of modern computers through the invention of transistors at Bell Labs. It took AT&T a century to reach this position and only a decade to fall from it.

AT&T was formed in the 1870s to exploit Alexander Graham Bell's telephone patents. It was very successful, but met vigorous competition when the original patents expired. AT&T became the dominant telephone company early in the new century by focusing its attention on the intercity telephone network and, no doubt, some hard competing. Most telephone traffic was local, given the nature of economic life at the time and the primitive nature of long-distance telephony, but AT&T's unique network gave it a distinct competitive advantage.

Bell's original company was organized as the Bell Telephone Co. in 1878. Its first general manager was Theodore Vail, hired away from the U.S. Post Office by Thomas A. Watson, one of Bell's early colleagues. From that point, the company developed quickly, based upon Vail's management expertise and far-sightedness. When he took the reins, less than 26,000 telephones were in service. Over the course of the next 10 years, Vail imposed his own design on the company, transforming it into a system rather than just a telephone company. Of its several original components, the American Telephone & Telegraph Company proved to be the most functional. Other parts of the company, namely the New England Telephone Company, sold licenses to smaller companies.

As the Bell System, composed of AT&T subsidiaries, grew to dominate the national telephone scene, it was subject to its first antitrust prosecution. In a consent decree in 1913, AT&T agreed to stop buying telephone companies and instead connect them to its network. During and after the Great War, the government decided to work with AT&T as a regulated monopoly rather than to promote competition. The dream of Theodore N. VAIL, president of AT&T in 1885–87 and again in 1907–19, of "one system, one management, universal service," was on its way to fulfillment.

AT&T was subject to its second antitrust prosecution after the Second World War, focusing on the market power of Western Electric, AT&T's manufacturing arm. The suit was settled by a consent decree in 1956 in which AT&T restricted itself to the telephone business. This appeared to be a minor constraint since AT&T had sold off its interests in radio, movies, and television, all promoted by research done in AT&T's Bell Labs, before the war. As computer and telecommunications technology grew less distinguishable, however, the constraint became more troublesome.

AT&T also agreed to transfer revenues from long-distance calls to Bell operating companies to keep local rates low, allowing some of the benefits of rapid technological advance in long distance telephony to be realized by local services. The resulting relatively high price of interstate calls attracted other smaller companies who saw a profit opportunity under the price umbrella formed by the high long-distance rates. An early challenge to AT&T was mounted by MCI, one of the small companies that initially wanted to use the phone company's lines. Discussions with AT&T proved fruitless, and the challenge was taken to court. The FCC encouraged MCI and other aspiring companies as a way to reintroduce competition into telephony. The third antitrust prosecution of AT&T started initially from concerns about Western Electric's equipment monopoly, but it quickly added MCI's accusations of unfair treatment. The suit dragged on for almost a decade and resulted in a consent decree that ended the Bell System.

Finally, AT&T agreed to settle the suit with the Justice Department after prolonged legal battles. The Modification of Final Judgment of 1982, so called because it was cast as a modification of the 1956 consent decree, allowed AT&T to retain Western Electric and Bell Labs in return for divesting itself of the Bell operating companies. The Bell operating companies were grouped together into seven Regional Bell Operating Companies, or RBOCs. Until 1996, the RBOCs were enjoined from competing directly with AT&T in long-distance service, and AT&T was unable to compete effectively with the RBOCs for local service. AT&T has attempted to enter local telephone markets, in competition with its former subsidiaries, which offered long-distance service of their own in competition with their former parent. In 2004, AT&T announced it would no longer be selling telephone services to residential customers and would concentrate on core businesses such as voice and data services to large corporations. AT&T, once the biggest company on Earth, is now only one telecommunications company among many.

See also Bell, Alexander Graham; Watson, Thomas A.

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Peter Temin

American Tobacco Co. Founded by Washington Duke after the Civil War, American Tobacco grew to be the largest company of its type in the world by the end of the century. The original company was located in Orange County, North Carolina. Duke served in the Confederate Army during the Civil War. After his return from a Union prison, he and his family rebuilt the fam-

ily farm, which had deteriorated during the war, and began growing leaf tobacco suitable for smoking. His original product was called "Pro Bono Publico." Within a year of the war's end, his farm was producing more than 15,000 pounds annually. By the early 1870s, he was producing more than 100,000 pounds annually.

In 1874, Duke moved his operation to Durham, the capital of the North Carolina tobacco business. His sons Brodie and James B. DUKE were active in the family business, and Duke rapidly became one of the richest men in the county. His major competitor manufactured the famous Bull Durham brand of smoking tobacco, and in order to compete with that company Duke admitted an outside investor and expanded his company. It became known as W. Duke, Sons & Co. In 1881, it began manufacturing cigarettes in addition to pipe tobacco.

The company became automated in 1884, when Duke purchased a machine capable of rolling cigarettes. After the machine succeeded in reducing labor costs, James B. Duke opened a branch operation in New York City. This helped the company gain access to a national market, and the branch became crucial to the company's further success. Encouraged by the business expansion of the period and the growth of large trusts in the late 1880s, Duke and his four major competitors decided to merge, forming the American Tobacco Co. in 1890. The consolidation was typical of the period of trust growth, although it would draw the attention of trustbusters in Congress and government. Before the merger, the companies produced more than 90 percent of the nation's tobacco. After the merger was complete, the company became known as the "tobacco trust" because of its dominance of the market.

American Tobacco was also the largest producer in the world by 1890. Washington Duke left the company to his sons in order to pursue other interests, including philanthropy. But the company's success was challenged by ANTITRUST forces in the administration of Theodore Roosevelt, and a suit was filed seeking the breakup of the company in 1908. Lower courts ruled in favor of the Justice Department, and the case was appealed to the Supreme Court. In 1911, two weeks after the Standard Oil Company decision, the Court upheld the lower courts and ordered the breakup of the company—the second monumental decision ordering the breakup of a major monopoly that year.

As a result, four major companies were created in the wake of the order—the new American Tobacco Co., Liggett & Myers, P. LORILLARD & COMPANY, and R. J. Reynolds. The creation of new companies, spun-off from the old parent, was similar to the breakup of Standard Oil. Recognizing the antitrust sentiment in the country, James B. Duke had by that time branched out into other interests, including electric power production in the South. Since 1904, he had been involved with the establishment of the Southern Company, a major utility. But his tobacco company became a significant economic force in the South, especially in North Carolina, and became the standard for the industry.

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antitrust Characterizing the process of reviewing MERGERS to decide whether they violate antimonopoly laws. The name derives from the period of trust creation in the United States, from 1875 to 1911, when many large "trusts" were formed in order to consolidate various industries by merging companies in similar lines of business. The trusts eventually gave way to the modern HOLDING COMPANY, but the term *antitrust* survives, dating from the passage of the Sherman Antitrust Act in 1890.

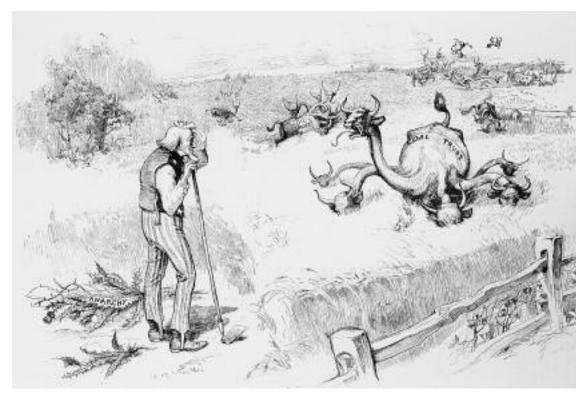
The SHERMAN ACT was the first major antitrust legislation passed in the United States. Previously, the only way to attack monopoly in the courts had been through the COMMERCE CLAUSE in the Constitution, which brought mixed results because of its limited potential applications. After the act was passed, trust creation continued, and a record number of mergers were consummated during the McKinley administration in the late 1890s. But after Theodore Roosevelt became president, more antitrust cases were mounted, initiated by the Justice Department. Actions were initiated against the Northern Securities Company, American Tobacco Company, Standard Oil Company, and the United States Steel Corp. among others. The first decade of the 20th century became known as the golden era of antitrust.

Two of the most notable antitrust casesagainst Standard Oil and American Tobaccowere upheld by the Supreme Court in 1911, and both companies were ordered to be broken up. In 1914, more antitrust legislation was added when Congress passed the CLAYTON ACT in an attempt to prevent price discrimination, interlocking directorships, and vertical mergers, topics not specifically covered by the Sherman Act. The Clayton Act prohibited companies from acquiring the stock of others in order to prevent competition. Like the Sherman Act, the law was vague in places and did not always prevent horizontal combinations from taking place. Congress also created the FEDERAL TRADE COMMISSION (FTC) in 1914 to help prevent price discrimination and protect consumers by issuing cease and desist orders against companies that had complaints filed against them for unfair trade practices. The agency was intended to enhance the Sherman Act and give the government a method of preventing unfair practices short of filing suit under the 1890 legislation. Today antitrust actions on the federal level can be initiated by the Antitrust Division of the Justice Department or the FTC.

Antitrust laws were complemented by antitrust policy, as seen in the political attitude of the administration holding office toward big business and mergers in particular. In some cases when administrations in office were friendly to business, as in the case of McKinley, mergers were allowed to proceed at a rapid pace. In other cases, such as the administration of Theodore Roosevelt, "trust busting" was in vogue, and many cases were brought before the courts in keeping with the administration's progressive leanings. During the 1920s, another burst of mergers occurred as successive Republican administrations did not pursue antitrust in the courts, especially after U.S. Steel was ruled a "good trust" by the Supreme Court, ending a decade-long court fight in favor of the company. The friendly attitude toward mergers lasted until the NEW DEAL.

Antitrust policy was given a boost during Franklin D. Roosevelt's second administration when Thurman Arnold of the Yale Law School was named head of the Antitrust Division of the Justice Department. The staff and budget of the division were increased dramatically, and new cases were pursued. During the first FDR administration, antitrust laws had been relaxed in favor of pursuing economic recovery during the Depression, but another RECESSION occurred in 1937 that convinced many in the administration that business was to blame. Stronger antitrust actions followed. An inquiry into industrial concentrations in 1939, investigated by the Temporary National Economic Committee (TNEC), discovered that many major industries were dominated by a few large firms, despite previous attempts to level the playing field. But after the outbreak of World War II, antitrust activity again fell as economic activity concentrated on the war effort. The one law that was passed during the 1930s-the ROBINSON-PATMAN ACT (1936)-was aimed mostly at the expansion of CHAIN STORES and did not have any substantial applications until after the war.

After the war, industry began to expand, and many large CONGLOMERATES were formed. Unlike horizontal or vertical mergers, these companies were an amalgam of many different types of companies and as such did not fall under any of the



Cartoon depicting Uncle Sam trying to control the monopolies, 1887 (LIBRARY OF CONGRESS)

existing antitrust laws. As a result, Congress passed the Celler-Kefauver Act in 1950, seeking to slow the growth of conglomerates. The act did not succeed in preventing their growth, however, and it was not until the Nixon administration took office in 1969 that antitrust activity again became more vigorous. Most of the focus of the administration's policies was on protecting larger, more established companies from the predatory tactics of many of the newer conglomerates. Attempts were made or discussed, unsuccessfully, to prevent mergers among the top 200 companies so that the conglomerates could not take over the largest companies using their high prices in the stock market to acquire larger firms without using cash.

Another attempt to protect companies from predatory takeovers by conglomerates was made

when Congress passed the Williams Act in the late 1960s, requiring companies acquiring more than 5 percent of another company's stock to register with the Securities & Exchange Commission. While not able to prevent takeovers, especially hostile takeovers, the law required a waiting period of 20 days while the SEC reviewed the filing, allowing some breathing space for the target companies.

During the 1960s and 1970s, many actions were brought against a wide range of companies. Among the largest and best-known were those against the IBM Corp. and AT&T as well as actions against such smaller but well-known companies as Schwinn and the Brown Shoe Company. The case against IBM was eventually dropped, but the case against the telephone company was pressed until it finally agreed to a breakup in 1982. When it did, the Antitrust Division scored its biggest victory since the landmark cases of 1911. The case also helped establish DEREGULATION as a trend in business generally, especially during the Reagan administration after 1982. The AT&T breakup encouraged Congress to begin deregulating other protected industries, a process that continued well into the 1990s.

During the 1990s in the Clinton administration, antitrust activities began strongly again with actions against a number of companies, including Intel and Microsoft Corporation. These cases proceeded while Congress passed legislation to help deregulate other industries, notably the TELECOMMUNICATIONS INDUSTRY and the UTILITIES industry. The cases were brought both by the Justice Department and the Federal Trade Commission. The case against Microsoft was upheld in the courts, making it another significant victory in antitrust, although the company was penalized rather than broken up. Throughout its history, antitrust has scored notable successes and failures against companies charged with price fixing and other anticompetitive practices. Often it has been most effective in blocking mergers before they could be consummated. Once mergers have been consummated, it is more difficult to seek antitrust remedies.

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Astor, John Jacob (1763–1848) *fur trader, real estate developer, and financier* Astor was born in Waldorf, Baden (today Germany). He arrived in the United States at age 21, landing in Baltimore in 1784. On the voyage to New York, his ship was frozen in Chesapeake Bay for part of the winter. While on board, he met someone who told him stories of fur trading in the Pacific Northwest, and he became determined to enter the business. Although often thought to have arrived in America as a penniless youth, within two years he had established a musical instrument business, suggesting at least some moderate means.

With the Treaty of Paris in 1763 and then the American War of Independence, many of the existing business structures in North America were changing. Understanding the changing market conditions as a result of the Revolution, Astor moved into the fur business, selling furs and purchasing trade goods in New York, Albany, and Montreal, then transporting them to New York for direct sale in Europe.

By 1790, Astor also became involved in the China trade, along with Montreal merchants. He held a small but guaranteed share in China ships along with Alexander Henry, and McTavish, Frobisher and Company. With the profits from these ventures, Astor began to buy land both in Lower Canada and in the Mohawk Valley. The business pattern that emerged by 1794 of trading furs, the China trade, and land, would continue into the future and earn Astor a large fortune.

The implementation of Jay's Treaty in 1794 between the United States and Canada led to a further reorganization of trade and a break with the North West Company. In the next 20 years, Astor began profitably to expand his involvement in the China trade and to expand his fur trading activities. These activities in many ways mirrored the westward movement of the new republic. In 1808, the American Fur Company was chartered in New York and by the end of 1811 had established Astoria at the headwaters of the Columbia River. In that same year, Astor became a partner in the South West Company. Throughout this period, Astor used some of his profits to buy land in New York City. His purchases made him one of the city's largest landowners, and parts of the city were eventually named after him, especially in the borough of Queens.

The War of 1812 led to a number of changes. Although the American Fur Company would continue to operate for decades, Astoria was sold to the North West Company in 1813. In New York, Astor became involved in war financing, buying and selling government bonds profitably, along with Stephen GIRARD and the American representative of BARING BROTHERS, the British bank. He subsequently became involved in the Second BANK OF THE UNITED STATES and its branch in New York.

With the death of his grandson in 1819, Astor's direct involvement in his business affairs was reduced. Leaving them in the hands of his son, William, he sailed to Europe, where he stayed on and off for much of the remainder of his life. He became known as the wealthiest American of his day, and his fortune was one of the first significant ones to be accumulated in the 19th century. He was reputed to be the first American millionaire. When he died in 1848, John Jacob Astor had a net worth of \$20 million. In his will, he bequeathed \$400,000 for the establishment of a reference library in New York City.

Astor also began a family dynasty that continues to this day. Astors have become prominent in publishing, real estate, and British politics as well.

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Ann M. Carlos and Frank D. Lewis

automotive industry In 1900, motor vehicles were built one at a time by hundreds of startup companies for sale to rich people as novelties. Most of these manufacturers disappeared by the 1920s, and except for a brief period after World War II, three companies—GENERAL MOTORS, Ford, and Chrysler—controlled around 90 percent of the U.S. market between the 1929 stock market crash and the 1973 oil crisis.

Into the 21st century, the two surviving U.S.owned motor vehicle producers—GM and Ford—held only one-half of the U.S. market. New competitors from Asia and Europe had begun selling and making motor vehicles in the United States, using efficient production methods that resulted in high-quality products.

Controversy surrounds the identity of the builder of the first workable gasoline-powered motor vehicle in the United States. Claimants during the early 1890s included Henry Nadig in Allentown, Pennsylvania (1891), John William Lambert in Ohio City, Ohio (1891), Gottfried Schloemer and Frank Toepfer in Milwaukee, Wisconsin (1892), Charles H. Black in Indianapolis, Indiana (1893), and Elwood P. Haynes in Kokomo, Indiana (1894).

The first company organized in the United States for the purpose of producing and selling motor vehicles was the Duryea Motor Wagon Co. of Springfield, Massachusetts. Duryea sold four cars in 1895 to lead all U.S. producers. Its reputation was enhanced by winning the first important motor vehicle race in the United States, in Chicago in November 1895.

European manufacturers clearly had a head start on their American counterparts during the late 19th century. In France, De Dion–Bouton & Trépardoux pioneered production of steam-powered vehicles in 1883. Panhard & Levassor started building and selling the first "modern" motor vehicle in 1892, with the engine mounted in the front rather than under the driver.

Carl Benz and Gottlieb Daimler debated who was first in Germany during the 1880s. Daimler was the first to design a four-cycle gasolinepowered engine in 1883; he received the first German patent on a three-wheeled gasolinepowered vehicle in 1885, but did not start manufacturing vehicles until 1890, three years after Benz. Benz made the first authenticated tests of a vehicle with three wheels and a onecylinder gasoline engine in 1885, patented it in 1886, started sales in 1887, and built a fourwheeled vehicle in 1893.

Motor-vehicle sales grew rapidly in the United States during the first decade of the 20th century, from 2,300 in 1900 to 120,000 in 1910. More than 3,000 firms were organized to manu-

facture motor vehicles, though only a few hundred achieved commercial production and sales of more than a handful.

First to sell more than 1,000 in a single year—in 1900—was the Columbia, an electric car built in Hartford, Connecticut, by the Pope Manufacturing Co., founded by Col. Albert A. Pope, the nation's leading bicycle manufacturer. A year later, the steam-powered Locomobile became the second to exceed sales of 1,000.



Charging the battery of a Detroit electric automobile (LIBRARY OF CONGRESS)

Southeastern Michigan quickly emerged as the center of U.S. auto production early in the 20th century. The amount of national production clustered in southeastern Michigan reached 80 percent in 1913. Michigan's edge came in part from expertise with gasoline engines. Of the roughly 4,000 motor vehicles sold in the United States in 1900, 40 percent were powered by steam, 38 percent by electricity, and only 22 percent by gasoline. By 1908, the three-way competition was over: Gasoline engines accounted for 83 percent of sales, and the other two power sources soon disappeared altogether.

Michigan had become a center for production of gasoline engines for agricultural and marine uses during the late 19th century. The Olds Motor Works in Lansing was a leading producer of small stationary engines to operate farm implements. Olds was the first to build motor vehicles in Detroit, in 1899, but when the factory burned two years later, the company moved back to Lansing, where it became a prominent community fixture for most of the 20th century. The Oldsmobile Curved Dash was the first largevolume low-priced car, hitting peak sales of 4,700 in 1903.

Henry M. Leland, head of Leland & Faulconer Manufacturing Co., the nation's leading producer of marine gasoline engines, also in Detroit, organized the companies responsible for the two surviving U.S.-made luxury vehicles: Cadillac in 1903 and Lincoln in 1917. Leland & Faulconer was also a major supplier of engines, transmissions, and other components to early motor vehicle manufacturers.

For five years, while he experimented with motor vehicles, Henry FORD was in charge of keeping generators in operation at one of the Edison Illuminating Company's Detroit power plants. Ford became good friends with Thomas EDISON, who despite his role in developing electricity encouraged Ford to use gasoline to power his cars.

Michigan also became the center of the motor vehicle industry because of expertise in building bodies. Flint in particular was a center for production of horse-drawn wagons and carriages. Largest was Durant-Dort Carriage Co., organized in 1886 by William C. DURANT and J. Dallas Dort. Early motor vehicles had bodies adapted from horse-drawn carriages.

Anticipating the demise of the horse-drawn carriage, Durant entered the motor vehicle industry by taking control of a struggling Flintbased Buick Motor Company in 1904. David Buick, a plumbing parts producer, had started the company bearing his name, but was unable to make it profitable. Under Durant, Buick became the best-selling brand in 1909.

Availability of investment capital also influenced the clustering of motor vehicle production in Michigan. Wall Street bankers regarded investing in motor vehicle producers as too risky because of the high failure rate. In Michigan, start-up funds came from wealthy investors who had made their fortunes in Michigan's extractive industries, such as copper, iron, and lumber.

From the thousands of companies trying to enter the motor vehicle industry during the first decade of the 20th century, two quickly emerged as the leading manufacturers: FORD MOTOR CO. and General Motors. These two companies were the sales leaders in the United States and worldwide nearly every year through the 20th century and into the 21st century.

After two failures, Henry Ford established the successful Ford Motor Co. in 1903. Ford's priority from the beginning was to build low-priced vehicles affordable for working people and practical in reducing their daily tasks. This strategy went against the conventional wisdom that luxury cars were more profitable to build. Only very wealthy people could afford cars in 1900, and they were used primarily for recreation. Henry Ford's genius was to recognize that the desire to own a motor vehicle was nearly universal.

After several years of experimentation, Ford brought out the Model T in 1909, priced at \$650, at a time when the average American vehicle cost \$2,000. One-half of the cars in the world were Model Ts during the 1910s, and more than 15 million Model Ts were sold before production ended in 1927 (when it was priced at only \$290).

Despite its low price, the Model T was extremely profitable because of innovative mass production techniques, especially the moving assembly line, which Ford installed at his Highland Park, Michigan, factory in 1913. Each worker was given a specific task to perform, repeated every few seconds throughout the day. Workers were arrayed along the line based on the logical sequence of tasks to be performed, and the moving line brought the needed materials in turn to each of them. Ford reduced the amount of time needed to build a car from 1,260 person-hours in 1912 to 533 in 1915 and 228 in 1923.

Ford passed the benefits of the moving assembly line to the public through lower prices, thereby stimulating universal demand for vehicles in the United States, and in turn swelling Ford's gross receipts. Ford also passed on benefits to his workers by more than doubling their wages to \$5 a day in 1914.

The \$5 a day wage made Henry Ford a folk hero in the United States. A lifelong pacifist, Ford sailed to Europe in 1915 to try to stop World War I. He barely lost a race for the U.S. Senate from Michigan in 1918 to an opponent, Truman Newberry, who spent a fortune and was forced to resign the seat a few years later because of fundraising irregularities during the election.

Success with MASS PRODUCTION and the Model T gave Henry Ford a belief in the absolute infallibility of his judgment. He insisted on selling only the primitive Model T until 1927 despite the advice of his son Edsel and other top advisers, nearly all of whom left the company. He refused to adopt modern cost accounting, bookkeeping, or billing practices.

Ford's eccentric behavior took a more sinister turn during the 1920s. He criticized bankers, teachers, lawyers, doctors, insurance, charity, sugar, and jazz. Ford's "Sociological Department" investigated the living conditions and personal habits of his workers to certify them as worthy of the \$5 a day wage. Ford published about 90 antiSemitic articles. Ford's Service Department, led by ex-convicts and organized crime figures and staffed by thugs, monitored worker behavior, even trips to the bathroom.

General Motors was created in 1908 by Flint carriage maker William C. Durant, who had already turned Buick into the best-selling brand. Recognizing economic benefits resulting from large size, Durant acquired numerous parts makers to supply Buick and moved them to Michigan. In 1908, Durant brought the leading motor vehicle manufacturers to a Detroit hotel room and proposed that a "trust," or monopoly, be created, much as had occurred in steel, telephone, and other industries. When Henry Ford demanded cash for his company, the deal collapsed. Durant then established General Motors in 1908 as a HOLDING COMPANY to acquire as many carmakers as possible to supplement Buick.

Durant started with Olds, which had lost its sales leadership after Ransom E. Olds left the company in a dispute with his financial backers. Durant bought the Pontiac-based Oakland Motor Car Co. a few days before its owner, Edward Murphy, died in 1909. Oakland struggled until it brought out a popular low-priced model called Pontiac in 1931. Cadillac was acquired from Henry Leland in 1909.

Unable to repay all the loans he had secured to pay for GM's rapid expansion, Durant was forced by the bankers to resign in 1910. Durant organized several new companies, including Chevrolet, which was based on a prototype developed by a famous race driver, Louis Chevrolet.

In one of the most remarkable events in American industrial history, Billy Durant, through his Chevrolet Motor Co., regained control of General Motors in 1916. By all accounts an extremely charming man, Durant convinced GM stockholders to turn over their GM shares to him in exchange for Chevrolet stock and a promise of greater profits.

Durant again overextended GM and again was forced to resign, this time for good. After another failed attempt to create a car company, Durant died in poverty and obscurity. Control of GM passed to DUPONT. Alfred P. Sloan, president and then chairman of the board of GM between 1923 and 1956, pioneered modern management practices, including decentralized day-to-day decision making and a standardized accounting system.

Sloan created a "car for every purse and purpose," assigning a distinctive price segment to each of the company's products, from the lowpriced Chevrolet, which displaced Ford as the country's best-selling brand, to the dominant luxury car brand, Cadillac. GM introduced the annual model change, in which mostly cosmetic "improvements" were unveiled once a year amid fanfare, thereby convincing many motorists to trade in their otherwise serviceable older models for brand new ones. To facilitate frequent trade-ins, GM also pioneered selling cars on credit.

In 1929, a record 4.3 million vehicles were sold in the United States. The 1929 sales record would not be exceeded for 20 years. Sales declined to 1.3 million in 1932, at the depth of the Great Depression, and halted altogether between 1942 and 1945 for World War II. Ford and GM had established themselves as the two industry giants during the 1910s. They were joined during the 1920s by CHRYSLER CORP., which grew rapidly after its incorporation in 1925. They became known as the Big Three carmakers.

Walter CHRYSLER, who had run GM's Buick division and Willys-Overland Co., became president of Maxwell-Chalmers Co. in 1923. In 1924, he introduced a line of cars named Chrysler, which became so successful that he changed the name of the company to Chrysler Motors Co. in 1925, and dropped the Maxwell line of cars altogether in 1926. Chrysler passed Ford during the 1930s as the second leading carmaker behind GM.

High unemployment and poor working conditions in the plants still open during the 1930s fueled union organizing activities. Skilled craftspeople had put together early motor vehicles by hand. Along the mass-production moving assembly line, work was repetitive and automatic, with a specified number of seconds allocated to perform each task. Workers were expected to exercise little thought, judgment, or skill. Unskilled labor was supplied by immigrants to Detroit, especially African Americans from the U.S. South and eastern Europeans.

The UNITED AUTOMOBILE WORKERS (UAW) union successfully organized General Motors following a 44-day sit-down strike in early 1937 at a Flint Fisher Body plant. Chrysler and smaller producers quickly recognized the UAW. Ford held out until 1941. The UAW initiated a "pattern bargaining" process during the 1950s in which it picked one of the Big Three for intense negotiations. To add pressure, the union would call a strike against only the targeted company while its competitors could continue to produce and sell vehicles. The contract signed with the targeted company served as a pattern for contracts negotiated with the other two of the Big Three.

The Big Three were hit hard by the Depression. Sales declined between 1929 and 1932 from 1.5 million to 322,000 at Ford, from 1.4 million to 522,000 at GM, and from 400,000 to 200,000 at Chrysler. However, smaller companies were even more devastated and were forced to cease production altogether. By the mid-1930s, Chrysler, Ford, and GM sold 90 percent of the vehicles in the United States, and they would continue to account for nearly 90 percent of sales in most years through the 1960s.

Immediately after World War II, several smaller companies together captured one-fourth of the market, taking advantage of the enormous pent-up demand for motor vehicles. But the independents fell by the wayside once the Big Three completed conversion from military to civilian production and introduced newly designed postwar models. Among the smaller independents, Studebaker merged with Packard in 1954 and ceased production in the mid-1960s. Also in 1954, Nash and Hudson formed American Motors, which hung on until acquired by Chrysler in 1987. GM's position in the post–World War II market was especially dominant. After Henry Ford's death in 1947, the Ford Motor Co. began a modernization program under grandson Henry Ford II. A strong group of managers known as the "Whiz Kids" were brought in to revive Ford. Chrysler's sales slipped behind Ford into third place when its redesigned postwar cars proved less appealing and less well built than its competitors.

Had it engaged in aggressive price-cutting, GM might have driven every other carmaker out of business. But the company decided that it could not exceed its 50 percent market share without incurring the wrath of congressional antitrust watchdogs. Therefore, GM used its dominant position to raise prices and swell profits. GM's annual rate of return during the quarter-century after World War II was more than twice as high as other carmakers and other U.S. manufacturers. By far the world's largest parts maker, GM further added to its profits by selling spark plugs, bearings, air conditioners, automatic transmissions, and other parts to Ford, Chrysler, and the smaller independents.

GM set up an Art and Color Section in 1927 led by Harley J. Earl, the industry's most influential designer for the next four decades. Innovative styling such as tailfins, chrome trim, and hardtop bodies (no pillar between the front and back doors) took precedence over engineering improvements. The dominance of General Motors at mid-century was best captured by its president, George Wilson, at 1953 U.S. Senate hearings to confirm his appointment as secretary of defense in the Eisenhower administration: "[F]or years I thought what was good for our country was good for General Motors—and vice versa."

GM's power reached its peak during the 1960s, when it tried to smear Ralph NADER, who had argued in his 1965 book *Unsafe at Any Speed* that the company was more concerned with profits than safety in developing its Corvair model. GM's campaign backfired, and the company ended up settling an invasion of privacy suit for \$425,000, which Nader used to set up consumer advocacy programs.



A 1956 Ford Crown Victoria automobile (LIBRARY OF CONGRESS)

Prior to 1973, the Big Three regarded foreign cars as a minor nuisance. British sports cars such as MG and Triumph had style and flair, but imports—nearly all from Europe—were in general objects of ridicule and held a combined total of only 1 percent of the U.S. car market in 1955. Reliability was abysmal: Broken-down foreign cars sat for weeks until replacement parts arrived from Europe by boat.

The one exception during the 1950s and 1960s was Volkswagen, whose U.S. sales increased from 26,000 in 1955 to 156,000 in 1960 and 569,000 in 1970. The German carmaker's appeal touched two rapidly expanding groups of U.S. consumers: households seeking an economical second car and baby boomers seeking an alternative to their parents' massive "land cruisers." The Big Three blunted the growth of foreign car sales by introducing smaller models of their own in 1960, including Ford's Falcon, Chrysler's Plymouth Valiant, and GM's ill-fated Chevrolet Corvair.

The OPEC oil embargo during the winter of 1973–74 and rapid oil price rise during the rest of the 1970s induced many Americans to trade in their gas-guzzling U.S. models for fuel-efficient foreign cars. But Volkswagen was not the beneficiary of this increasing interest in foreign cars; its U.S. sales declined to 294,000 in 1980 and 159,000 in 1982. Rather, Japanese companies, led by Toyota and Honda, increased their U.S. sales from 300,000 in 1970 to 2 million in 1980. GM and Ford lost money for the first time since the Great Depression, and Chrysler was saved from BANKRUPTCY by federal government loan guarantees.

U.S. companies were mandated to raise fuel efficiency from 12 miles per gallon in 1975 to 27.5 miles per gallon in 1985. As memories of high prices and shortages of petroleum faded, the Big Three were unable to recapture market share from Japanese companies. Americans were initially attracted to Japanese cars because of higher fuel efficiency, but they continued to buy them because of higher quality.

The Big Three denied the existence of a quality gap during the 1980s. They blamed the perceived gap on consumer magazines, Ralph Nader, and biased questionnaires. Japanese companies were challenged to "level the playing field" by building cars in the United States with American workers. A dozen Japanese-owned and -managed assembly plants were built in the United States during the 1980s, and quality remained high. Most telling was a joint venture between Toyota and GM called New United Motor Manufacturing Inc. (NUMMI) in Fremont, California. Under GM management, the plant had a reputation for poor quality and a dysfunctional workforce. Under Toyota management, the same workers produced high-quality cars efficiently.

Most influential in changing the attitude of U.S. carmakers was *The Machine That Changed the World*, a 1990 report by the International Motor Vehicle Program (IMVP). Funded by U.S. and European carmakers and government agencies, the IMVP identified why Japanese carmakers were able to produce better-quality vehicles more efficiently than U.S. or European firms. The IMVP team called the Japanese system "lean production."

Under lean production, Japanese firms organized workers into teams, each trained to perform a variety of operations that rotated among team members. Teams were given more control over immediate workspace, such as arrangement of machinery, and authority to address problems, including stopping the moving assembly line if necessary. Parts made by independent suppliers arrived at the assembly plant on a just-in-time basis, shortly before needed, eliminating the need to stockpile expensive inventory. Under lean production, new models were developed more quickly in response to changing consumer preferences, and assembly lines were flexible enough to accommodate model changes without a costly and time-consuming changeover period.

The Big Three adopted many lean production principles during the 1990s, thereby closing—but not completely eliminating—the productivity and quality gaps with Japanese carmakers. The economic fortunes of the Big Three improved during the 1990s primarily because of consumer interest in trucks, which increased from 20 percent of the U.S. market in 1974 to 50 percent in 2000. The Big Three ceded sales leadership in traditional four-door "family" passenger cars to the Japanese, especially Honda and Toyota, while concentrating on highly profitable sport utility vehicles and pickups.

For their part, Japanese companies struggled during the 1990s because lean production led to lean profits. Under the principle of *kaizen* (continuous improvement), productivity and quality were improved without regard for cost effectiveness. Higher profit margins were achieved by adopting optimum lean production, which combined elements of lean and mass production. More parts were standardized, products were consolidated onto fewer distinctive platforms (chassis and underpinnings), and development and assembly times were sharply cut.

Into the 21st century, the Big Three's most significant competitive disadvantage was heavy pension and health-care costs that added \$1,200 to every vehicle. UAW contracts maintained generous benefits for current and retired workers and their families while permitting the Big Three to reduce their workforce. UAW membership declined from a peak of 1.5 million in 1979 to 639,000 in 2002. In contrast, Japanese companies had fewer retirees and a workforce with fewer health care needs and little interest in joining a union.

The U.S. motor vehicle industry has become part of a global system. U.S. and Canadian motor vehicle production has been fully integrated since the 1960s, while the 1993 NORTH AMERICAN FREE TRADE AGREEMENT (NAFTA) eliminated trade barriers in and out of Mexico. More goods arrive in the United States across the Detroit-Windsor Bridge than through any other port of entry in the country, largely because of Canadian-made motor vehicles and parts. In the aftermath of the September 11, 2001, terrorist attacks, however, U.S. borders with Canada and Mexico became less easy to cross, jeopardizing further integration of the North American motor-vehicle industry. Asian- and European-owned companies build and sell vehicles in the United States, while U.S. companies are major producers in Europe and own controlling interests in several Asian carmakers. The sale of Chrysler to the German carmaker Daimler-Benz in 1997 effectively erased meaningful differences between the Big Three "domestics" and "foreign" manufacturers.

Control of the world's motor manufacturing is expected to further consolidate into a handful of multinational companies. Sales and production are not expected to increase in North America, western Europe, and Japan in the 21st century; but rapidly rising consumer demand in developing countries, especially the two most populous, China and India, is expected to fuel further expansion of the world's motor vehicle industry. Another challenge facing the automotive industry comes from concern that the increasing number of gasoline-powered automobiles is damaging the Earth's environment with their tailpipe emissions. This has prompted the U.S. government to start imposing higher mileper-gallon regulations on automobiles (the strictest state being California), which in turn is forcing the automakers to explore new fuels and technologies-such as hydrogen and "hybrid" vehicles-to meet these changes.

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B

Babson, Roger Ward (1875–1967) statistician and stock market analyst Babson was born into a well-established New England family. His father was a successful dry-goods merchant who did not believe in the principles of higher education. He was undisciplined as a youth and was a member of a street gang for a brief period before obtaining his high school diploma. He then attended MIT because it provided a "technical education," which was more acceptable. After graduating in 1898, he went to work for a Boston stockbroker. He was soon fired for his overly analytical methods and independent spirit. After working for himself briefly in New York City, he returned to Massachusetts to work for another Boston broker. He then established Babson's Statistics Organization with \$1,200 in 1904. The company was later known as Babson's Reports. The original company was one of the first to accumulate and analyze business statistics and sell the service to subscribers. It was so successful that he was able to diversify his interests after several years in business.

Following the Panic of 1907 on Wall Street, Babson, already wealthy because of his service's success, expanded it to include stock market reporting and advice. The service included business and stock market predictions and made Babson very well known in investment circles. He was one of the few market analysts to accurately predict the stock market crash of 1929 although many on Wall Street did not agree. In the 1920s, statistical analysis was not universally accepted. Many Wall Street bankers did not accept that business conditions were anything less than ideal before the crash and continued to believe in a rosy future even after 1929.

In addition to his analytical services, Babson was also interested in public service. He served in Woodrow Wilson's administration as an assistant secretary of labor and advocated joining the League of Nations. Later in life, he ran for president on the National Prohibition Party ticket in 1940. But he was best known for his stock market services. In addition to his service, Babson also wrote on financial matters in regularly scheduled articles. From 1910 to 1923, he wrote about business and other matters as a regular columnist for the Saturday Evening Post. He also contributed to the New York Times and to the newspapers owned by the Scripps Syndicate. He eventually formed his own syndicate, the Publishers Financial Bureau, to distribute his writings to papers across the United States. His reputation was enhanced in the late 1920s when he began predicting a strong stock market reaction to the speculative bubble. After the crash, his reputation grew, and he became one of the most sought-after market analysts.

During his lifetime, Babson authored 47 books, including his autobiography, *Actions and Reactions*. His writings covered a wide array of social and economic topics in addition to his statistical and forecasting work. He founded Babson Institute (today Babson College) in Massachusetts in 1919 and was also instrumental in establishing Webber College for Women in Florida, in part because of his wife's support for women's education. His success opened the field to a wide array of newsletters and market analyses that created an industry of information services surrounding Wall Street and business cycles.

See also STOCK MARKETS.

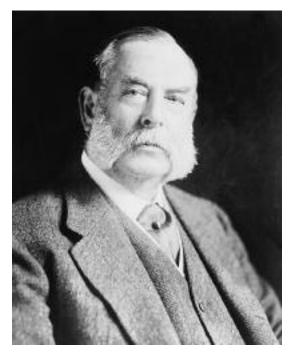
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Baker, George F. (1840–1931) *banker* Born in Troy, New York, on March 27, 1840, Baker went to live with relatives in Massachusetts when his family moved to Brooklyn and his father became a newspaperman. While living with relatives, the young boy noticed that an uncle did no apparent work, preferring to live off interest income instead. From an early age, he, too, decided that he would live off interest despite his middle-class background.

After attending the Seward Institute in Florida, a private school, Baker became a clerk in the New York State Banking Department. While working there, he became familiar with a New York banker, John Thompson, who invited him to join in a new banking venture established during the Civil War in New York City. The new institution was established in order to participate in the sale of TREASURY BONDS during the war through the national banks newly created by the National Banking Act. The bond program was run by Salmon Chase, secretary of the Treasury, who used Jay Cooke & Co. as his primary selling agent. The First National Bank of New York was established on Wall Street in 1863, and the young Baker bought shares in the company with his savings. He became its cashier and a board member in 1865 and quickly began to work his way to the top of the bank's management. During the Panic of 1873, the bank's president, Samuel Thompson, feared for the bank's survival, and Baker decided to begin buying his stock, having faith that the bank would weather the storm. As a result, he became the major figure at the bank, and in 1877 he became its president.

In the early 1880s, firmly established, Baker began buying shares in various railroad companies. He specialized in buying and selling companies after helping reorganize them and earned a



George F. Baker (LIBRARY OF CONGRESS)

good deal of his fortune in that manner. He also had extensive holdings in other banks and insurance companies. By the turn of the 20th century, he held directorships in 43 banks and corporations, making him a charter member of what became known as the "money trust" in New York banking circles. He was also the largest shareholder in the U.S. STEEL CORP. after it was organized by J. P. Morgan in 1901. He remained a close associate and confidant of Morgan. He retired from active management of the bank in 1909 but remained as its chairman. Because of his banking connections and affiliation with Morgan, he became a star witness at the Pujo hearings conducted by Congress in 1911, investigating what was known as the "money trust," the close relationships among New York bankers and their role in allocating credit and capital.

During World War I, Baker helped Benjamin STRONG of the New York Federal Reserve Bank manage operations in the money market, which included determining how much call money would be made available to the stock market. In 1916, he was indicted along with others for looting the New York, New Haven, and Hartford Railroad, but the charge was ultimately dismissed when his attorney proved that while he attended directors' meetings, he usually slept through most of them and took no part in their deliberations. Unlike many other bankers, Baker kept some distance between his bank and the securities business directly, establishing an untarnished reputation that earned him the honorary title the "Dean of Wall Street" during the 1920s. At his death, his estate was valued at \$75 million, making him one of the richest bankers in the country. He also gave substantial sums to many colleges and universities, including the Harvard Graduate School of Business Administration. His son, George F. Baker Jr., succeeded him as chairman at the bank, which was a major New York City institution before later merging with the National City Bank. After other MERG-ERS, it is a part of Citigroup today.

See also Citibank; Morgan, John Pierpont.

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Bank Holding Company Act Passed in 1956, the act was concerned with the nonbanking activities of bank holding companies (BHCs), whereas the BANKING ACT OF 1933 (Glass-Steagall Act) had dealt with the relationship between commercial and investment banks. The TransAmerica Corporation, a large California-based HOLDING COMPANY that owned the BANK OF AMERICA, was a major target of the BHCA since it had banking operations, insurance underwriting, manufacturing, and other commercial activities. The purpose of the BHCA was to regulate and control the creation and expansion of BHCs, separate banks from nonbanks within the BHC, and minimize the dangers of the concentration of economic power.

The major provisions of the BHCA were: (1) The board of governors of the Federal Reserve System (FRB) was given authority to regulate and examine BHCs, (2) the ownership of shares in corporations other than banks was generally prohibited, (3) prior approval of the FRB was required for acquisitions involving more than 5 percent of the stock of the acquired firm, (4) BHCs could acquire banks only in their home state unless the laws of another state specifically allowed them to expand into the new state though existing interstate companies were not required to divest the banks they already held, (5) transactions between BHCs and their affiliates were limited, and (6) the act reserved the rights of states to exercise jurisdiction over BHC activities. Although states did not have laws allowing interstate acquisition in 1956, they began adopting them in the 1980s and typically grandfathered companies such as Northwest Bancorporation in Iowa and First Interstate, which was operating in several western states.

The major loopholes in the legislation were the exemption of one-bank holding companies (OBHC) and the definition of a BHC as a company owning 25 percent or more of the stock of two or more banks. Without these exemptions, the law would have applied to many more financial organizations. Banks later exploited the OBHC loophole as a legal way for banks to acquire nonbanking businesses. The OBHC loophole was plugged by the BHCA Amendments of 1970.

Many of the provisions of the BHCA are no longer in effect because they have been superseded by passage of the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994, which allows bank acquisitions nationwide and interstate branching, and the Gramm-Leach-Bliley FINANCIAL SERVICES MODERNIZATION ACT of 1999, which allows organizations that can qualify as financial holding companies to enter upon any activities that are financial in nature (as opposed to closely related to banking under the original BHCA). During the period of DEREGULA-TION in banking during the 1980s and 1990s, and before the Financial Modernization Act was finally passed in 1999, the BHCA was the primary tool employed by the FEDERAL RESERVE to allow liberalization in the banking system. More recently, its importance has faded as the financial services industry has entered a deregulatory stage while the Federal Reserve has adopted a more liberal policy of regulating bank holding companies.

See also INTERSTATE BRANCHING ACT.

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Ronnie J. Phillips

Banking Act of 1933 (Glass-Steagall Act) The law passed during the first months of Franklin D. Roosevelt's administration that defined the scope of American banking for the rest of the century. It was passed as a result of congressional hearings (the Pecora hearings) investigating the causes of the crash of 1929 and the banking and stock market problems of the 1920s and 1930s. An act of a similar name passed Congress the previous year relating to the gold reserves of the United States.

The act defined the bounds of American banking. It listed the activities that a commercial bank could carry out while restricting others. Specifically, it effectively prohibited commercial banks from engaging in INVESTMENT BANKING, requiring banks that practiced both sides of the business to decide within a year which side they would choose. It did so through Section 20 of the law prohibiting commercial banks from being "engaged principally" in underwriting or trading equities, meaning that they could earn only a limited amount of their total revenue from equity related activities. The section effectively made dealing or investing in stocks impossible for commercial banks and precluded them from the investment banking business.

The exclusion was aimed at the large New York money center banks, notably J. P. Morgan & Co., which traditionally had practiced a mix of commercial and investment banking and had holdings in insurance companies as well. The National City Bank and the Chase National Bank were also heavily involved in both commercial and investment banking and were the focus of the hearings and the new law. By excluding commercial banks from holding equity, the act made expansion into other related financial services difficult and in many cases impossible.

The Banking Act also created deposit insurance through the FEDERAL DEPOSIT INSURANCE CORPORATION. Almost half of all American banks failed during the Depression, and several hundred per year were failing on average before the act was passed. As a result, many depositors withdrew their funds at a crucial time, and many banks were short of funds for lending. The "money horde" was responsible for the diminution of credit when unemployment was rising and capital expenditures waning, and the introduction of deposit insurance on a national scale helped restore faith in the banking system. There was much criticism of deposit insurance at the time, with some detractors calling it socialist or simply not necessary. But when the act passed, after a weeklong banking holiday, depositors began to return to banks.

Also included in the act was Regulation Q (Reg Q) of the FEDERAL RESERVE, which allowed the central bank to set interest rate ceilings on deposits in order to prevent banks from entering a bidding war for savers' funds. In the following decades, this provision protected banks from paying the market rate for deposits and effectively protected the banks' cost of funds. Interest on checking accounts was also prohibited. These regulations lasted for more than 40 years.

The major restrictions in the Glass-Steagall Act were lifted gradually over a period of years. In 1980, the DEPOSITORY INSTITUTIONS DEREGULA-TION AND MONETARY CONTROL ACT increased the amount covered by deposit insurance and permitted interest-bearing checking accounts. Reg Q was also phased out by the act and disappeared after the DEPOSITORY INSTITUTIONS ACT was passed in 1982. It was not until 1999, when the FINAN-CIAL SERVICES MODERNIZATION ACT was passed, that commercial banks were again free to own investment banking and insurance subsidiaries, although the Federal Reserve had been allowing the practice on a de facto basis since the early 1990s. In response to pressures from the marketplace, Congress passed that act, effectively rolling back the major restrictions of the Glass-Steagall Act and creating a more liberal banking and investment banking environment.

The Banking Act of 1933 was the most restrictive banking law ever passed. When combined with the McFadden Act of 1927, it created a peculiarly American style of banking found nowhere else. For decades, it was considered part of the "safety net" that protected savers and the banking system itself.

See also COMMERCIAL BANKING.

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banknotes The issuance of banknotes was an integral part of commercial bank operations until the mid-20th century, when the FEDERAL RESERVE monopolized their issuance and circulation. The global history of banknotes can be divided into three periods.

Paper money, made from the bark of mulberry trees, was introduced in China sometime between A.D. 650 and 800. By about A.D. 1000 redeemable banknotes were issued by at least 16 different banks. Overissue led to inflation, which may have ultimately led to the downfall of the Sung Dynasty. Governments in later dynasties also issued paper money, though not necessarily banknotes, but the Chinese experiment with paper money lapsed between 1644 and 1864.

In Europe, the earliest paper money was issued by goldsmiths who took in deposits for safekeeping and issued certificates of deposit that developed into currency. Modern banks first appeared in mid-14th-century Italy, but the Stockholm Bank of Sweden is often credited with having been the issuer of the first banknotes in Europe in 1661, redeemable in local copper coins or silver thalers. Banknotes were introduced to the British Isles by the Bank of England shortly after it opened in 1694 and by the Bank of Scotland in 1695. Whereas the Bank of England's first issues were certificates of deposit for gold issued in the specific amount of the deposit in pounds, shillings, and pence, the Bank of Scotland almost immediately issued notes in round denominations between £5 and £100, a practice employed by the Bank of England only in 1745. A £1-note was first issued by the Bank of Scotland in 1704. Given the poor state of the coinage in the late 17th and early 18th century, banknotes issued by reputable bankers became an attractive and convenient means of payment and constituted an important part of the money supply. When coin shortages grew acute, Scottish banknotes were reputedly torn into quarters and halves and accepted as the equivalent of 5 or 10 shillings, respectively.

Banks put their notes into circulation by giving them to borrowers who took out loans. So long as the bank maintained a reputation for redeeming its notes, the public was willing to hold them because they were easier to transport and transact with than gold and silver coins of various quality and uncertain value. In holding a bank's notes, the bank effectively received an interest-free loan from the note-holding public even while it earned interest from borrowers who circulated the notes on the bank's behalf. Thus, both banks and the public benefited from the issuance of banknotes. Banks earned a return from issued and as-yet unredeemed notes, and the public experienced the reduced cost of transacting through barter or with coins of uneven quality. In addition, the replacement of banknotes for coins freed precious metals for use in alternative productive activities.

The earliest paper money used in the New World was issued by the Massachusetts colony in December 1690 to pay troops recruited for an expedition against Canada. Although gold and silver, mostly of Spanish origin, circulated in the colonies, it was typically of low quality and in short supply. The money supply was regularly augmented by issues of paper money by colonial governments.

During the American Revolution, the Continental Congress issued paper money that rapidly depreciated in value during the wartime overissue and massive inflation. It was this wartime experience that led the framers of the Constitution to ban the issuance of bills of credit (paper money) by the individual states. The federal government did not issue paper money again until the exigencies of the Civil War forced its hand in 1861. In the interim, banks supplied a large fraction of the U.S. circulating medium through the issuance of banknotes. As early as 1820, banknotes represented about 40 percent of the U.S. money supply (coins + banknotes + deposits). Individual states provided corporate charters to joint-stock banks, which were given the authority to print and circulate their own notes. Most states limited banknote issues to a multiple of a bank's paid-in capital, but a few imposed explicit reserve requirements in terms of legal tender coins.

One of the most interesting and remarkedupon periods for U.S. banknotes was the Free Banking Era (1837–63). During this era, 18 states allowed banks to issue notes limited only by the value of government bonds the banks were willing to deposit with a regulatory body as collateral and the banks' willingness and ability to meet redemption calls in coin. The number of banks expanded rapidly to about 1,600 in 1860, each of which issued a half-dozen or more different denomination banknotes.

The diversity of banknotes during the Free Banking Era led to two problems: redemption of notes issued by faraway banks and counterfeiting. Redemption of notes that had traveled far from the issuing bank was often handled through interbank clearing relationships, whereby one bank would take in another bank's notes on deposit and later return them to the issuing bank. The Suffolk Bank of Boston established a regionwide clearing system across New England. Less comprehensive systems were put in place in New York, Philadelphia, and other major cities. Eventually, these clearing agreements developed into formal arrangements out of which clearinghouse associations evolved. In addition to formal interbank clearing arrangements, private brokers, known as banknote brokers, emerged who bought notes issued by faraway banks for coin or notes of local banks. It is believed that brokers set prices to reflect transportation and transaction costs, redemption risks, and a normal rate of return. In doing so they provided liquidity and monitoring functions.

The counterfeiting problem is often thought to have been rampant. Several banknote brokers published weekly or monthly newspapers that reported all known counterfeits, with a typical issue providing descriptions of several dozen to as many as several hundred known and suspected counterfeits.

In 1863, Congress passed the National Banking Act, which effectively instituted free banking on a national scale. Between 1863 and 1936 any bank meeting federal guidelines could issue its own notes, subject to a number of regulatory conditions. To reduce transaction costs and counterfeiting, all notes were produced by the Bureau of Engraving and Printing, using a common design for all banks. The only features that differentiated the notes of one bank from another were the issuing bank's name, its federal charter number, signatures of its officers, and the seal of the bank's home state. Otherwise, the pattern was identical.

The Federal Reserve Act of 1913 introduced a new currency—the Federal Reserve note—which remains the principal circulating currency in the United States up to the present. Since the first Federal Reserve notes appeared in 1914, the bank's notes have changed in size and appearance and added colors other than green, beginning with the \$20-note in 2003. In most developed countries, such as the United States, central banks such as the Federal Reserve have gained a government-mandated monopoly of the money supply. Scotland remains a notable exception. Even up to the present, individual banks in Scotland issue their own currency.

What lies in the future for banknotes? Some scholars contend that the INTERNET is likely to

generate media that resemble banknotes, otherwise known as virtual banknotes. PayPal, for instance, already acts like a deposit bank, and its transaction services are increasingly like those offered by the goldsmiths of a much earlier era. From here, it is only a short step to providers of on-line transaction services offering on-line currencies that will circulate freely among buyers and sellers on the Internet.

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Howard Bodenhorn

Bank of America California bank founded by A. P. Giannini (1870–1949) in San Francisco in 1904 as the Bank of Italy. The son of Italian immigrants, he established the bank with \$150,000 in borrowed money in order to serve the retail immigrant community in the city. His reputation was enhanced quickly when he managed to stay open during the great earthquake and fire that struck the city in 1906, by rescuing the bank's money, loading it in a horse-drawn vegetable cart, and taking it home with him. When other bankers refused to open their institutions after the quake, Giannini insisted on opening and extended credit to customers based on a handshake and a signature.

Not to be confused with a New York bank having the same name in the earlier part of the century, the bank remained primarily a California institution. In 1919, Giannini changed the name of the institution to BancItaly Corp. and again in 1928 put it under the umbrella of a HOLDING COMPANY called the Transamerica Corp. so that it could expand nationally. He then bought the older Bank of America in New York and adopted its name. Because of subsequent laws forbidding interstate branching passed by many states and the McFADDEN ACT, the bank conducted almost all of its business within California, although it was aided after 1927 by the size of the state, enabling it to have one of the largest branch networks of any bank in the country. But other subsidiaries did operate on a national basis, although most of Transamerica's activities were concentrated in western states. Giannini's fame spread in California after making loans to the wine industry and the new MOTION PICTURE INDUSTRY in the 1920s.

Prior to World War II, the bank made great inroads into consumer lending especially, being one of the first banks to offer customers consumer loans at relatively low rates when compared to other lenders. He was among the first bankers to offer auto loans and consumer loans to small customers.

After World War II, the bank began to expand into other financial services and international banking. In the late 1940s, it was the largest bank in the country. But Transamerica was the target of many antitrust inquiries, and when the BANK HOLDING COMPANY ACT was passed in 1956 the empire was restricted to operations in California. In the mid-1960s, the Bank of America developed the Visa card, a credit card that extended revolving credit to customers, unlike the established CREDIT CARDS that demanded full payment upon billing. The bank's forays into international banking were less successful, and it was significantly exposed by many loans to less-developed countries in the late 1970s and 1980s, becoming one of the largest single lenders to Mexico before

its debt crises began. It suffered a financial and organizational crisis as a result and had to have new management installed.

In 1998, the bank agreed to merge with NationsBank of North Carolina to create the first coast-to-coast banking operation in the country. The name Bank of America remained although the merger was actually a takeover by Nations-Bank. In 2004, Bank of America acquired Fleet-Boston, creating the third-largest financial institution in the United States.

See also COMMERCIAL BANKING.

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Bank of New York Founded in 1784, the bank is the oldest existing banking institution in the country. The bank's charter was written by Alexander HAMILTON, who practiced law in New York City at the time. When he became the first Treasury secretary under George Washington, he began a series of borrowings for the government, and the bank was used as an intermediary. The bank did the borrowing, and the government issued warrants on the bank. The technique helped establish the credit of the United States at a time when few foreign investors were interested in doing business with the new government.

From its inception, the bank was capitalized "in specie only," meaning that its capital was money coined in silver or gold rather than land. Its first shareholders were New York businessmen who intended that the bank be founded on a reputation for prudent management so the notes it issued would be backed by specific proportions of specie. The bank issued stock, one of the first companies in the United States to do so, and it

was traded on the New York stock market, which was conducted out-of-doors along Wall Street. In 1792, it began loaning money to the Society for Establishing Useful Manufactures, which planned a group of factories to be built in Paterson, New Jersey. It was also a lender to the two major canal projects, the Morris Canal in New Jersey and the ERIE CANAL in New York. Many of the steamship companies operating around New York also received loans from the bank. Most of the loans it originally made were short-terms, maturing in months rather than years. Its stock remains listed on the NEW YORK STOCK EXCHANGE today.

Before the Civil War, the bank was a major clearing institution for gold trading and settlements. After the war, the bank provided loans to a host of infrastructure investments, including the RAILROADS and utility companies. Of crucial importance to New York City, the bank also provided funds for its subway system, which opened in 1904. Before the BANKING ACT OF 1933 was passed, the bank merged with the New York Life Insurance & Trust Co. in 1922. It later merged with Fifth Avenue Bank in 1948 and with the Empire Trust Co., also in 1948, enabling it to strengthen its trust services even further. As COM-MERCIAL BANKING began to expand in the post-World War II years, especially in the late 1950s and 1960s, the bank established a HOLDING COM-PANY in 1969 and began to open branches around the New York metropolitan area. It also added an international office in London at the same time.

The bank's major acquisition was the Irving Bank Corporation in 1988, one of New York's best-known banking institutions. In the 1980s, the bank became one of the largest clearers of federal funds in the country and a major factor in the funds clearance system. Its business remains primarily wholesale although it does maintain a retail banking operation and branches.

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Bank of the United States, The The Bank of the United States (BUS) was actually two separate banks-the First BUS (1791-1812) and the Second BUS (1817-41). The First Bank, envisioned by Alexander Hamilton, the nation's first Treasury secretary, received its 20-year charter from Congress in February 1791. The mixed (20 percent public- and 80 percent privately owned) corporation was capitalized at \$10 million, which exceeded the combined capital of all statechartered banks, insurance companies, and canal and turnpike companies of the time. Investors were permitted to tender newly issued federal bonds as payment for \$400 shares in the bank, and this innovation helped to bring U.S. debt securities, which had only three years earlier sold at deep discounts, back to par. In doing so, the fledgling bank contributed to one of Hamilton's most important achievements-restoration of the credit standing of the United States.

In the first decade of its existence, the BUS served as a safety net for the federal government, standing ready to make loans when necessitated by low tax collections. It opened branches in New York, Boston, Baltimore, and Charleston in 1792, and later in Norfolk, Savannah, Washington, and New Orleans. By 1805, half of the bank's capital was managed by the branches. Starting with the sale of 55 percent of its shares on the open market in 1796, the federal government reduced its dependence on the bank, and the bank shifted its focus toward business lending. In the first decade of the 1800s, the bank and its branches operated essentially as a large commercial bank. It nevertheless would on occasion make specie loans to other banks when liquidity needs arose, and provided some unofficial control over note issues by regularly collecting notes of state banks and presenting them for redemption.

The establishment of a "national" bank had been a contentious political issue in 1790. At that time, those suspicious of the centralized power



First Bank of the United States (New York PUBLIC LIBRARY)

that such an institution might imply, led by Thomas Jefferson and James Madison, questioned its very constitutionality. By the time that the bank was up for recharter in 1811, these abstract issues were supplemented by a distrust of foreign ownership in the bank, which had exceeded 70 percent by 1809, and questions about its economic necessity in light of large budget surpluses. The latter arguments were pivotal in Congress's defeat of the act to recharter by the vice president's tie-breaking vote. President Madison, bound by his ideology at the time of the bank's founding, privately supported recharter but remained publicly neutral. The defeat forced the bank to wind up operations in 1812. As the bank had consistent net earnings of 9 percent over its 20-year existence and had declared dividends of 8 percent regularly, its closing proceeded in an orderly and timely manner. State banks quickly arose in its aftermath to assume its commercial banking functions. The strains of financing the War of 1812, however, led Congress soon to reconsider the efficacy of a quasi-central bank.

The Second BUS received a federal charter in 1816 with a capitalization of \$35 million, and operated under this charter from February 1817

until March 1836. The Second Bank, like the First, was established to restore order to the currency, but also to facilitate the holding and disbursement of the government's funds by acting as its banker. Aside from overexpanding note issues shortly after opening and a near-suspension of specie payments in 1819, the bank assumed its role effectively until 1829, when rhetoric over recharter escalated between Nicholas BIDDLE, who led the bank from 1823 until 1839, and President Andrew Jackson. Jackson was "afraid of all banks" and the possibility of default on their note issues, and was suspicious of an institution in which individuals could profit by lending the public treasure. The smoldering conflict led Biddle to seek early recharter of the bank in the latter part of Jackson's first term. When the recharter became a campaign issue in 1832, Jackson responded by vetoing the act on July 10, 1832.

Upon reelection, Jackson ordered the removal of all government deposits from the Second Bank in 1833 and placed them with selected statechartered (i.e., "pet") banks. With its federal charter near expiration, the bank lost much of its regulatory zeal, allowing the pet banks to use the new deposits to expand note issues. With no impending threat of note redemption by the BUS, these issues combined with inflows of specie from abroad to produce a rapid inflation between 1834 and 1836 that ended in the financial Panic of 1837. In the meantime, the Second BUS obtained a state charter from Pennsylvania in 1836 and continued operations until 1841. As bank president and still the nation's most influential banker, Biddle actively criticized Jackson's 1836 policy of requiring specie payments for the purchase of public lands, mostly in the West, to curb speculation, and even made unsolicited and apparently unwelcome attempts to steer President Van Buren away from the impending crisis immediately after Jackson left office in the spring of 1837. In the aftermath of the panic, "Biddle's Bank" used its resources and international reputation to engage in active speculation in the cotton market, and heavy losses from these activities contributed to a second financial panic in 1839. The bank's capital stock appears to have been a total loss when the doors closed on February 4, 1841.

When the Whigs regained the White House in 1841, Henry Clay quickly moved an act to charter a third bank through Congress, but it was vetoed unexpectedly by President John Tyler, who ascended to office after President Harrison's death shortly after inauguration. The nation's central banking "experiment" would not be again attempted until the founding of the Federal Reserve in 1913.

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Peter L. Rousseau

Bank of United States A New York bank, located in Manhattan, which failed in 1930 at the beginning of the Great Depression. At the time, it was the largest bank failure in American history and became one of the primary causes behind the banking reforms passed by Congress in 1933 in the first weeks of Franklin D. Roosevelt's administration.

The bank was purposely named after the long defunct BANK OF THE UNITED STATES, although it omitted "the" from its name. Many of its offices and branches were decorated with flags, giving the impression that it somehow was an official institution. The bank was located primarily in Manhattan, with branches located mostly in working-class and immigrant neighborhoods. It had about 60 branches and several subsidiaries that served 400,000 depositors. The management of the bank used the deposits to help purchase the bank's own stock in the market. When the stock market crashed in October 1929, the bank's stock price fell substantially. Since the purchases were funded with customer deposits, it also wiped out many of the deposits as well.

Although the bank was a member of the Federal Reserve Bank of New York, the collapse came too unexpectedly for an effective bailout. Many of the major New York City banks refused to help stabilize it, adding to the resentment of the large banks that was building in the early 1930s. Initially, more than \$300 million in deposits was lost, representing the savings of many workingclass and first-generation Americans.

New York banking authorities attempted to rescue the bank but were too late in preventing runs on its branches. Newspapers around the country published pictures of lines that formed outside the branches as anxious depositors lined up to withdraw their funds. The publicity led many depositors in other parts of the country to withdraw their funds from banks, adding to a national liquidity problem that developed, depriving banks of the funds necessary to make new loans. The superintendent of banks in New York was indicted for not acting quickly enough to prevent the problem. Eventually, he was exonerated and some of the deposits were partially reimbursed, but the crisis became the impetus for nationwide deposit insurance that was included in the BANKING ACT OF 1933.

The bank became the best-known failure of its day and paved the way for future legislation, although it was fraudulently managed and probably would have failed even without the market crash. Although the abuses of the bank were somewhat isolated, its problems did underline the risks to which customer deposits could be subjected by unscrupulous bank management. For that reason, the Glass-Steagall Act separated investment from COMMERCIAL BANKING when it was written, a separation that lasted until 1999. The bank became the symbol of the fragility of the financial system during the late 1920s and early 1930s, a period of thousands of bank failures.

See also NEW DEAL.

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bankruptcy A legal condition whereby an individual or corporation legally claims that it is no longer able to pay its creditors. Bankruptcy laws usually allow the filer to claim protection while it reorganizes in order to continue doing business, a different stage of bankruptcy than declaring that the business or economic enterprise is no longer able to continue. Creditors may force a company into bankruptcy in order to protect the priority of their claims against it. In either case, bankruptcy is legally declared.

Bankruptcy is defined by the U.S. Bankruptcy Code, written and periodically updated by Congress. Originally, bankruptcy laws dealt harshly with those declaring insolvency. Congress passed bankruptcy laws in 1800, 1841, and 1867. The first was passed after a stock market panic in the outdoor market conducted in New York, caused by William DUER, resulting in him being sent to debtors' prison where he eventually died. The law was repealed three years later. The next two were passed in the wake of stock market panics and were repealed several years later. The 1841 law was repealed three years after being enacted. The 1867 law was the first to include protection for corporations. It, too, was repealed.

A more substantial law was passed in 1898, which gave companies the opportunity of seeking protection from their creditors. However, it required a period of great economic instability and distress to pass new laws designed to give further protection. During the Great Depression, Congress passed two more laws, one in 1933 and the other in 1934. Then the Chandler Act was passed in 1938, allowing for the possible reorganization of businesses rather than their dissolution.

For the next 40 years, bankruptcy laws did not undergo major changes because the number of major bankruptcies was very small. The major exception was the filing by the Penn Central Railroad in 1970. A major reform was added to the code in 1978 when Congress passed the Bankruptcy Reform Act, which streamlined the procedures used for filing and increased the number of bankruptcy courts. Once a bankruptcy proceeding has been initiated, the questions arise of exactly what to do with the failing entity. Generally, two types of proceedings follow.

Under a Chapter 11 proceeding, the company is protected from its creditors while it reorganizes under the auspices of the court. When a bankruptcy plan has been approved by the courts and the SEC, the firm's creditors then must also approve the plan. If reorganization proves unfeasible, then the company enters Chapter 7 of the law and must liquidate itself in order to satisfy creditors. Other amendments to the act followed. The Bankruptcy Amendment Act of 1984 limited the right of companies to terminate labor contracts. In 1986, another chapter was added to account for farms.

Sometimes filing for Chapter 11 bankruptcy has been used as a defense against large claims against a company. By freezing its assets and protecting current creditors and shareholders, a company can immunize itself against a large product liability claim or other anticipated lawsuit. This tactic was employed during the 1980s to protect some drug and medical device manufacturers against claims from customers. In the 1980s and 1990s, many well-known companies filed for bankruptcy, some being household names. Included among them were EASTERN AIR-LINES, Continental Airlines, Allied Stores and Federated Department Stores, Greyhound, R. H. Macy, and PAN AMERICAN AIRWAYS. Another filing by Texaco was instigated as part of a corporate defense against an unwanted takeover. To date, the longest-standing bankruptcy proceeding was by the LTV Corporation, which declared Chapter 11 in 1986 and was reorganized only in 1993. The company was forced to file again in 2001.

Another reform was passed with the Bankruptcy Reform Act of 1994. This act includes increased streamlining procedures and also addresses individual bankruptcies more than its predecessors. It created a National Bankruptcy Commission to report on continuing bankruptcy reform. The 1994 act contains many new provisions for both businesses and individuals, including provisions to expedite bankruptcy proceedings and provisions to encourage individual debtors to use Chapter 11 to reschedule their debts rather than use Chapter 7 to liquidate.

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Baring Brothers A British banking house founded in 1763, originally as a merchant business specializing in textiles and commodities. The firm shifted to the merchant banking business under the guidance of Francis Baring in 1776. The partnership served as the major banker to the gentry, British businesses, and the Crown of England. By the time of the Napoleonic Wars, the bank was called the "sixth great power" in Europe along with the major European governments.

Baring was a major factor in British-American trade in the late 18th and 19th centuries. The

bank served as banker and often principal in many major financial transactions, including the Louisiana Purchase. It was the major conduit for British funds to be invested in the United States, often through local agents. Local bankers with ties to the bank acted as investment agents, and substantial funds were invested. It often acted as intermediary for the British Crown, which had funds invested in the United States. In the late 18th and early 19th centuries, many Americans feared the influence of Baring because it was assumed that the bank represented the interests of George III, whose mental state deteriorated after the loss of the American colonies. The British remained major suppliers of capital to the United States until the 1890s.

Among Baring's agents in the United States were David Parish of Boston, Kidder Peabody & Co. of Boston, and Lee Higginson & Co., also of Boston. After the Civil War, Kidder was its main agent and helped funnel British funds into railroad investments as well as property and farms. Its major competitor as supplier of funds to the United States was another well-established European bank, the House of Rothschild, whose agent in the United States at the time was August BELMONT.

Baring's influence began to wane after the bank failed during a financial crisis in 1890. It had become heavily invested in South American bonds and was saved only by a bailout by the Bank of England. After that incident, the bank's influence in the United States began to wane as it retrenched its operations. The bank continued to operate in Britain until 1995, when a major trading scandal in its Singapore office forced it to close its doors. It was absorbed by the Dutch financial services group ING and operates as a subsidiary of that company presently.

The main contribution of Baring to the development of the American economy was as a conduit for British overseas investment throughout the 19th century. The strength of the European bankers in this respect illustrated how dependent the United States was on the inflow of long-term investment capital for much of that century, until its own financial markets became developed. The American merchant banks that served as its principal agents in the United States also became major banking institutions until the House of Morgan began to supercede them in the 1890s and early 1900s.

See also foreign investment; Rothschild, House of.

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Barron, Clarence W. (1855–1928) *newspaperman* Born in Boston, Barron's father was a teamster. He graduated from Prescott Grammar School and the Graduate English High School in 1873 and went to work for the *Boston Daily News* and then the *Evening Transcript*. From 1878 to 1887, he was a reporter covering many beats but then began gravitating toward financial reporting. He became financial editor of the *Boston Transcript*. Recognizing the need for sound financial news, he founded the Boston News Bureau in 1887 and in 1897, the Philadelphia News Bureau. In 1893, he wrote his first book, *The Boston Stock Exchange*.

Financial news at the time was spotty and dominated by journalists often paid by Wall Street interests, who planted stories with journalists in order to affect the prices of stocks. Barron, however, saw the role of financial journalist as defending "the public interest, the financial truth for investors and the funds that should support the widow and the orphan." As a result, he became one of the first journalists to see his role as a conduit of nonbiased financial information as well as a commentator on financial markets.

In 1902, he purchased control of Dow Jones & Co., publisher of the *Wall Street Journal*, for \$130,000 following Charles Dow's death. The

paper's circulation was about 7,000; by 1920 it reached 18,750. In 1912, he became president of Dow Jones and the *Wall Street Journal*. Barron introduced new printing equipment, and the newsgathering side of the company expanded. By the end of the 1920s, more than 50,000 copies of the paper were in daily circulation. In 1921, he founded the weekly financial newspaper that bears his name—*Barron's*. He served as the paper's editor in addition to being president of Dow Jones and publisher of the *Wall Street Journal*. The newspaper was an immediate success, reaching a circulation of 30,000 in its sixth year.

Barron testified before the Massachusetts Public Service Commission in 1913, when it was investigating the New Haven Railroad, and in 1920 he helped expose the investment racket conducted by Charles PONZI. He was the subject of a \$5 million libel suit for his 1920 muckraking exposes of Ponzi. The suit was dropped after Ponzi's arrest and conviction.

Barron is widely considered the father of American financial journalism. Many of his anecdotes and stories about the financiers of his period can be found in *They Told Barron* (1930) and *More They Told Barron* (1931). He also wrote several other books, including *War Finance, As Viewed From the Roof of the World in Switzerland, The Mexican Problem, The Audacious War,* and *Twenty-Eight Essays on the Federal Reserve Act.* He died in a sanitarium while visiting as part of a weight-loss program.

See also NEWSPAPER INDUSTRY.

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Baruch, Bernard Mannes (1870–1965) *financier and government official* Born in South Carolina, Baruch's father was a physician who moved to New York in 1881. Bernard was raised in New York City and graduated from the City College of New York in 1889. He went to work after graduation and made his first million dollars by the time he was 30. He became a governor of the NEW YORK STOCK EXCHANGE and was one of Wall Street's best-known investors in the 1920s.

Baruch's first job on Wall Street was with A. A. Houseman & Co. in 1891. He began speculating in railroad stocks and soon bought and sold American Sugar Refining. His first serious market operation earned him \$60,000 and sealed his fate as a speculator. As the Spanish-American War ended, he cut short a vacation and returned to New York, sensing that the market would rise on the news. He traveled to the city on a weekend, climbed through a window at the Houseman office, and traded stocks in London while the U.S. market was still closed. Shortly afterward, he bought a seat on the New York Stock Exchange for \$39,000 and opened his own office. He was so successful at making money in the market that he began to look for something more challenging to do with his time.

Following Woodrow Wilson's career since he became president of Princeton University, Baruch actively supported his presidency and was rewarded for his support. Baruch served in Woodrow Wilson's administration as chairman of the War Industries Board in 1918 and a year later served on the U.S. delegation to the Versailles peace conference. In the early 1920s, his name was linked by Henry Ford's Dearborn Independent to a Jewish plot to control the world, a common paranoia in the 1920s. Commenting later on the claim, he wrote that, "similar attacks were picked up and mounted by the Ku Klux Klan . . . to say nothing of Joseph Goebbels and Adolph Hitler." He continued his interest in the stock market and made a substantial reputation by being one of the major Wall Street investors to withdraw most of his money from the market before the 1929 crash. Sensing that the stock market was becoming perilously high prior to 1929, he also proposed a bankers' pool of funds to help prop it

up in the event it fell, but was turned down by Wall Street bankers.

In the 1930s, Baruch was an active supporter of the NEW DEAL but never became secretary of state, a job he coveted. He supported government institutions designed to stimulate the economy but was not a supporter of government price supports, As a result, he began to drift away from FDR and the New Deal.

During World War II, he served on a committee writing an influential report on the state of the RUBBER INDUSTRY. He also served President Harry Truman after the war on the U.S. Atomic Energy Commission studying the U.S. position on atomic energy. Despite his government service, his reputation as an investor earned him the most accolades and opprobrium, although he was always quick to point out that he paid most of his own expenses while in government service. He also donated substantial sums to educational institutions in New York City. A 1953 gift to the City University of New York resulted in the university renaming its business school after him. Despite a strong penchant for the press and self-promotion, Baruch was one of Wall Street's best-known figures who glided between New York and Washington with great ease during the two world wars.

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Bell, Alexander Graham (1847–1922) *inventor* The inventor of the telephone was born in Scotland. As a boy and young man, Bell was interested in speech therapy and technologies that could help those with speech and hearing problems to communicate with others. He was exposed to these problems at an early age since both his father and grandfather were interested in communications. His grandfather, Alexander Bell, wrote a book on speech and elocution, and his father was a speech teacher in Dublin. Mabel Hubbard, his mother—and a painter—was deaf.

At age 23, Bell moved to Canada with his parents. A year later he began teaching at the Boston School for Deaf Mutes. After Morse developed the TELEGRAPH, Bell began to study electrical transmission and developed the idea of a "harmonic telegraph." This sort of device, which led to the development of the telephone, envisaged sending more than one message along an electrical line directly to the recipient rather than a telegraph office, which would then have to forward a telegraph message by hand to the ultimate recipient. He teamed with Thomas WATSON, another inventor and proven technician. In 1875, they developed the first device capable of carrying sound along an electrical line. Within a year, Bell filed for a patent on his new device, which was



Model of Alexander Graham Bell's first telephone (LIBRARY OF CONGRESS)

granted on March 7, 1876. In the same year, the first telephone was introduced at the Philadel-phia World's Fair.

Bell formed the Bell Co., which became his vehicle for carrying out telephone development. After several legal skirmishes with WESTERN UNION TELEGRAPH CO., the Bell Co. emerged victorious from the courts and became the acknowledged leader in telephone systems. The Bell Co. and its smaller affiliates were consolidated as the AMERICAN TELEPHONE & TELEGRAPH CO. (AT&T) in 1878. Its first general manager was Theodore VAIL, who would resign but later return when the company was reorganized early in the 20th century. The Bell companies held most of the patents covering telephonic technology until the 1890s, when many of them began to expire, opening communications to competition.

In 1881, Bell won France's Volta Prize and used the \$10,000 award to set up the Volta Laboratory in Washington, D.C. He worked with two associates, his cousin Chichester Bell and Charles Sumner Tainter, at the laboratory, and their experiments soon produced major improvements in Thomas Edison's phonograph, allowing it to become commercially viable.

After freeing himself from the day-to-day operations of his company, Bell continued research and inventing. One of his first innovations after the telephone was the photophone, a device allowing sound to be transmitted on a beam of light. Bell and Tainter developed the device, and in 1881, they successfully sent a photophone message over 200 yards from one building to another. Bell regarded the device as his greatest invention, even greater than the telephone. The photophone was the principle upon which laser and fiber-optic communication systems were later founded.

In 1907, four years after the Wright brothers first flew at Kitty Hawk, Bell formed the Aerial Experiment Association with four young engineers whose goal was to create airborne vehicles. By 1909, the group had produced four powered aircraft, one of which, the Silver Dart, made the first successful powered flight in Canada in 1909. Bell spent his later years improving hydrofoil designs, and in 1919, he and Casey Baldwin built a successful hydrofoil.

He also lent considerable support to *National Geographic* and *Science* magazines. When he died, the country's telephone system went silent for a minute to honor him. He remains the most famous American inventor.

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Belmont, August (1813–1890) financier, politician, arts patron, and sportsman Belmont was born to Jewish parents in Germany and immigrated to the United States at the age of 23. Rising from the position of office boy to confidential clerk for the Rothschilds' banking firm in Frankfurt, Belmont was in New York when the Panic of 1837 ruined the Rothschilds' agent there. He established August Belmont and Company, a private banking firm, and soon became a dominant figure on Wall Street, where his longterm connection to the Rothschilds worked to his advantage. His firm's early fortunes relied on its foreign exchange transactions, on commercial and private loans, and on investments in industrial, railroad, and government securities.

Despite being a naturalized American, Belmont harbored political and diplomatic ambitions, and he was helped in realizing some of them through his wife's uncle, John Slidell, a leading Washington Democrat. President Franklin Pierce rewarded Belmont's 1852 campaign largesse by naming him minister to the Netherlands. While at The Hague, Belmont negotiated a commercial treaty opening the Dutch East Indies to American merchants. He also played a less public role in drafting the Ostend Manifesto (1854), which some fellow American diplomats hoped would convince Spain to sell its Caribbean possession, Cuba, to the United States. Belmont continued his strong affiliation with the Democratic Party with major contributions to President James Buchanan's 1856 election campaign; he also served as chairman of the Democratic National Committee during the subsequent presidential campaigns of Stephen A. Douglas (1860), George B. McClellan (1864), and Horatio Seymour (1868).

During the Civil War, Belmont was a prominent "War Democrat" and successfully persuaded the Rothschilds and other leading European financiers to avoid any involvement with Confederate bond issues. In the postwar period, Belmont sided with the "hard money" bloc. He called for the prompt resumption of specie payments by the United States Treasury and opposed the compromises of the Bland-Allison Act (1878). When the American economy revived after a mid-1870s depression, August Belmont and Company became a leading investment banking house, often associated with J. P. Morgan and Company in underwriting syndicates that floated large issues of railroad and industrial stocks and bonds.

Belmont had a keen appreciation of the arts, especially painting and opera. He purchased many paintings to adorn his Fifth Avenue mansion. In 1878, he helped found the New York Academy of Music for operatic productions and symphonic concerts and served as head of its board until 1884.

Belmont also established for himself a major reputation in the world of sports. He was instrumental in bringing thoroughbred horse racing to the United States and supported two large horse breeding farms. It was he who began the Belmont Stakes in 1867, which subsequently became the famous "last leg" of a Triple Crown for threeyear-old race horses, following the Kentucky Derby and the Pimlico Preakness. He served for almost a quarter of a century as president of the American Jockey Club.

Belmont died on November 24, 1890, two weeks shy of his 77th birthday. He was succeeded at the family bank by his son August BELMONT II, who became equally famous in banking, social, and sporting circles.

See also ROTHSCHILD, HOUSE OF.

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Irving Katz

Belmont, August, II (1853–1924) *banker and sportsman* Son of New York banker and socialite August Belmont and Catherine Slidell Perry, the daughter of Commodore Matthew Perry, August II was born in New York City. He attended Harvard, graduating in 1874, and entered the family banking business, run by his father until his death in 1890. He then assumed the reins of the firm. While at college, August was an avid track runner and helped import the first spiked running shoe into the United States, which helped revolutionize competitive running.

Known mostly as a socialite, August II nevertheless continued the family banking tradition. Much of the family business was built upon the relationship of his father with the Rothschilds, and August continued the tradition. The Anglo-German banking family was a major source of FOREIGN INVESTMENT for the United States until the outbreak of World War I. In 1900, he was instrumental in helping finance the New York subway system, which opened in 1904. In addition, Belmont contributed much time and energy to the continued development of the American Jockey Club, founded by his father, and also to racing his own horses, again following in his father's tradition. He also helped finance the Cape Cod Canal, which opened in 1914. The U.S. government used the canal extensively during World War I to reduce shipping time between New England, New York, and points south. The family maintained a stake in the canal that was not sold until the 1920s.

During World War I, Belmont served as an officer in the U.S. Army, serving in Spain as a major, helping purchase livestock for the military. During his later years, he was preoccupied with horse breeding and racing. As a result, the family firm, August Belmont and Company, began to fade as a major Wall Street investment bank. The bank still made headlines in the early 1930s when it became the object of a retroactive lawsuit by the Soviet government, claiming that Belmont held a deposit from Russia that had never been returned.

Belmont died in 1924, and the family firm was closed. Its assets were liquidated to pay off debts, while his heirs chose to remain in the investment banking business at other firms rather than continue the family firm. His stables and horses were also liquidated, sold off to other prominent businessmen and socialites. His death marked the official end of Rothschild influence in American finance, although in reality it had ended some years before. Both he and his father made an indelible mark upon American finance, combining finance with extensive socializing and influencing Wall Street for years to come. They are best remembered for their contributions to American horse racing, especially the Belmont Stakes run in New York.

See also Belmont, August; Rothschild, House of.

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Better Business Bureaus The Better Business Bureaus sprang from the early 20th-century "truth in advertising" movement. Advertising was then emerging as a distinct profession and hoped to elevate its low public standing. Unfortunately, the largest advertisers were patent medicine manufacturers who pioneered national marketing techniques while peddling false promises of health "cures." Muckraking exposés by Ladies Home Journal (1904-05) and Collier's (1905) revealed that the ingredients contained in these nostrums included everything from innocuous herbs to alcohol and opium. A horrified public pressured Congress to pass the Pure Food and Drug Act (1906), which required the labeling of drugs. National advertising agencies responded by dropping patent medicine accounts. Eight years later, Congress established the FEDERAL TRADE COMMIS-SION (FTC) to deal with unfair trade practices. The Wheeler-Lea Act of 1938 further empowered the FTC to deal with "deceptive" advertising and other misleading "acts or practices."

Local advertising clubs, meanwhile, set up volunteer "vigilance committees" (later renamed "Better Business Bureaus") to monitor advertising and retail trade. In 1914, the Minneapolis advertising club established the first full-time, professional Better Business Bureau. The concept spread to dozens of other U.S. and Canadian cities. For example, the NEW YORK STOCK EXCHANGE, seeking to eradicate stock swindlers, helped found the Better Business Bureau of New York City. The bureaus kept files on businesses, investigated scams, and reported criminal cases to the authorities. They worked closely with newspaper publishers, urging them to reject deceptive ads, and also cooperated with the American Medical Association in exposing health quackery. The Association of Better Business Bureaus (ABBB) represented the local BBBs, while a National Better Business Bureau (NBBB) focused on national advertising. In 1971, these two associations merged to form the Council of Better Business Bureaus (CBBB). The BBBs were successful at curbing fraudulent advertising and

sales claims. However, cases involving borderline deception were more difficult to challenge given the subjective nature of the violations. Moreover, some large advertisers flouted the BBB code of ethics. Nevertheless, the drastic reduction in outright fraud and dishonesty, so prevalent in the early 20th century, was a major accomplishment. Member firms valued the BBB for its efforts to eliminate unfair competition and channel consumer dollars into honest businesses.

The BBBs' history is intertwined with the CONSUMER MOVEMENT. During the 1930s, consumer activists launched an unprecedented attack on advertising with best-selling books such as Arthur Kallet and F. J. Schlink's 100,000,000 Guinea Pigs. Consumers' Research and Consumers Union tested products against their advertised claims and found many wanting. The low popular opinion of advertising was reflected in the colossal success of Ballyhoo, a magazine that spoofed leading advertisements. The BBBs responded to this widespread public cynicism by becoming involved in consumer education. They published buying guides and held conferences to bridge the gap between businesspeople and consumer advocates.

Consumer advocacy intensified in the 1960s and 1970s as Ralph NADER and other advocates demanded stricter government control of business. A separate critique of advertising's corrupting influence on the public, particularly children, led to calls for the censorship of commercial speech. Fearful of government control, the leading advertising associations joined the Council of Better Business Bureaus in establishing the National Advertising Review Board (NARB). The NARB is responsible for regulating national advertising content. It reviews the decisions of the CBBB's National Advertising Division. Although the NARB lacks legal authority, advertisers have abided by its judgments.

The Better Business Bureaus also arbitrate consumer disputes. Large corporations, regulatory agencies, and courts have turned over an increasing number of complaints to the BBBs. Recently, the Council of Better Business Bureaus has worked to bring self-regulation to Internet commerce. Companies may apply for a BBB seal of approval for their Web sites. This issue will certainly grow in importance as consumers spend more money online.

The Better Business Bureaus have a controversial past. Muckraking journalists and aggrieved business owners denounced the BBBs for acting as busybody detectives. This was especially true in the 1930s, when books appeared with such sensational titles as *The Indictment of the Better Business Bureau Conspiracy* (1931) and *Rackets: An Exposé of the Methods and Practices of the Better Business Bureaus* (1933). More recently, consumer advocates have questioned whether the BBBs represent business or the consumer. Thus, by mediating between business and consumer groups, the BBBs are vulnerable to charges that they did too little, or too much, for either side.

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Jonathan J. Bean

Biddle, Nicholas (1786–1844) *banker, legislator, and diplomat* Born in Philadelphia, Biddle was the son of a Philadelphia banker. Recognized as a child prodigy, he entered the University of Pennsylvania at age 10 and was scheduled for graduation at 13. Because of his age, he was not granted a diploma and so enrolled at the College of New Jersey in Princeton, graduating as valedictorian at age 15. He then returned to Philadelphia to study law with his brother William and jurist William Lewis. In 1804, he became secretary to John Armstrong, the ambassador to France. Adding to his resume, he also helped work on the details of the Louisiana Purchase and attended Napoleon's coronation. Biddle also served as secretary to James Monroe, the new ambassador, in 1807. He later edited the papers of Lewis and Clark but abandoned the effort when he was elected to the Pennsylvania legislature in 1810. He also founded the literary journal *Port-Folio*. During the War of 1812, he served on the Philadelphia Committee on Defense and twice ran unsuccessfully for Congress. He also served in the Pennsylvania legislature, where he became familiar with the BANK OF THE UNITED STATES. He was appointed to the bank's board of directors by Monroe in 1819, and when Langdon Cheves resigned, he was appointed president of the bank in 1822. He remained its president for the next 14 years.

The bank was heavily influenced by his leadership, and it became known as "Biddle's Bank," a nickname that later did not sit well with President Andrew Jackson. During the 1820s, the bank was very successful, and the economy grew under Biddle's guidance. Biddle helped transform the bank, which previously had been a Philadelphia bank with branches throughout the East and South, into a central bank. He used the bank to effectively counter trends within the economy, providing liquidity when there appeared to be business slowdowns and contracting it when the economy expanded. But after the election of 1828, when Andrew Jackson took office, the new president believed the bank was unconstitutional despite an earlier Supreme Court ruling in MCCULLOCH V. MARYLAND in 1819.

Congress reauthorized the bank in 1832, but Jackson vetoed the bill. After Jackson refused to renew the bank's charter, Biddle remained with it for several years until it eventually closed its doors. It later changed its name to the Bank of the United States of Pennsylvania. He finally resigned from the greatly diminished institution in 1839. He was later charged with fraud but eventually acquitted of all charges.

The failure of the Second Bank of the United States was due in part to Biddle's inability to deal with the politics of Jackson, who once told him



In this cartoon, President Andrew Jackson refuses to renew the charter for the Bank of the United States. Nicholas Biddle, with the head and hoofs of a demon, runs to Jackson's left. (LIBRARY OF CONGRESS)

that "I do not dislike your bank any more than all banks." There was some animosity on the president's part toward wealthy men of letters, of whom Biddle was the best example of his generation. The animosity had a distinct downside since the United States was left without a central banking institution until the FEDERAL RESERVE was created in 1913. The vacuum left by the failure of "Biddle's Bank" was filled by private bankers in later years, notably by John Pierpont Morgan, whose power and influence finally led to the establishment of a true central bank almost a hundred years later.

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Black-Scholes model A formula for pricing stock options. Stock options are a type of derivative instrument that provides the holder the right, but not the requirement, to buy or sell stock at a future date. Options to buy are called "call" options, and those to sell are "put" options. The Black-Scholes model was developed in 1970–71 by Fischer Black and Myron Scholes, with collaboration from Robert C. Merton. The three were young economists at the time. The model at first received a hostile reception from mainstream economists and was immediately rejected from three academic journals before

finally being published in a leading economics journal in 1973. All three researchers soon became leaders in the academic field of financial economics and before long became influential Wall Street advisers.

Their research eventually earned Scholes and Merton the 1997 Nobel Prize in economic sciences. (Black died in 1995 and could not be named a recipient, although he was cited in the announcement.) The Black-Scholes model itself is mathematically complicated, but in many cases the option price depends only on the volatility (or variability) of the underlying stock. In this sense, options are said to provide the price of volatility. Greater volatility translates into greater option prices because of the very nature of options they do not have to be exercised in the "bad" outcomes, so the option holder receives potential benefits without any downside.

The Black-Scholes model works due to an underlying arbitrage argument. Since a stock and a bond can be combined to mimic exactly the payouts of an option, the price of the option must be the same as the price of that "replicating portfolio," or there would have to be an arbitrage opportunity that investors could exploit. The results of the Black-Scholes model can also be derived from a decision-tree framework pioneered by John Cox, Stephen Ross, and Mark Rubinstein in the mid-1970s. This technique relies on computer power and Monte Carlo simulation to reproduce all the possible scenarios for the movement of a stock and made Black-Scholes more operational by allowing option pricing in more complex situations.

The Black-Scholes model quickly revolutionized the pricing of derivative securities and helped an active market develop in options. Few, if any, academic studies in economics have had a bigger impact on the "real world." In 1973, the CHICAGO BOARD OF TRADE opened a stock options exchange—the Chicago Board Options Exchange. Other exchanges quickly followed suit, and the model became associated with their development from their earliest days. The OPTIONS MARKETS quickly spread to include interest rates, and now a variety of options trade beyond those on stocks—including such new instruments as swaps, caps, floors, and swaptions. Both the over-thecounter and exchange-traded derivatives markets are among the largest in the world and currently trade trillions of dollars each year. In addition, hidden options can be found and priced in a variety of business and finance applications.

The model has also been used to price stock options granted to executives as part of their compensation packages. The controversy arising in the late 1990s over executive compensation and the use of stock options gave the model additional life as one of the few ways in which such executive compensation tools could be adequately priced for accounting purposes.

See also FUTURES MARKETS.

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Paul Harrison

Boeing Co. The largest and one of the most successful American manufacturers of civilian and military aircraft. The company was founded by William E. Boeing (1881–1956) in 1916, originally to make seaplanes. Boeing had left Yale in 1903 and made his fortune in the timber industry in the Pacific Northwest. He became interested in airplanes in 1908 and spent the next several years learning about them while taking flying lessons. In 1915, he teamed with George Westervelt to build a biplane capable of landing on water and nicknamed it the B & W. They began producing the plane, and the Boeing manufacturing company was born.

During World War I, the company achieved its first notable success. In 1917, Boeing knew that

the U.S. Navy needed training airplanes, and he sold the navy a seaplane called the Model C. The seaplane performed well, and the navy ordered 50 more—the company's first production order. By 1918, 337 people were on the Boeing payroll, and the company's future was more secure.

In 1919, Boeing delivered the first international air mail from Canada to the United States. The post office later rewarded Boeing with the first airmail route, from Chicago to San Francisco. He also founded Boeing Air Transport, the predecessor to United Airlines. In all cases, Boeing used his own planes in his commercial enterprises, using the revenues to aid in further aircraft development. He sold his interest in the company in 1934 to pursue other ventures, but the company retained his name.

Boeing planes became the standard in aviation. A Boeing plane was used to drop the atomic bombs on Japan, and the company's lunar orbiter and Moon Rover were used in the first Moon landing. In 1952, the company tested the B-52 prototype that was to become a standard for the military and a year later the B-47E, a jet bomber. The original presidential plane, Air Force One, was a Boeing 707, and newer models are still used by the White House. The 707 became the world's most popular long-distance jet in the mid-1950s after Pan American World Airways ordered 20 for its fleet. It revolutionized air travel, allowing many more people to fly than ever before. Although William Boeing died in 1956, the company was faithful to many of his original business strategies. It has diversified into other lines, including the building of irrigation projects and desalinization plants, and providing computer services. In addition, the company continued to produce planes and other hardware for the space program and also purchased rival McDonnell Douglas as well as Rockwell International and Hughes Electronics, a communications company.

During the post–World War II years, Boeing began developing missile systems for the military. Building upon research done in the 1940s to develop a guided missile system, whereby the missile is guided by an analog computer, the company developed intercontinental ballistic missiles and also developed the ground systems needed to house and deploy them. It won the contract for the first Minuteman missile program from the Defense Department in the early 1960s.

During the 20th century, Boeing was the world's leading aircraft manufacturer. Its most serious competition in the 1990s came from the European consortium Airbus Industries. The consolidation of the domestic aircraft manufacturing industry was due mainly to Boeing's influence and success because the company maintained a tight hold on the market with reliable aircraft and design innovations.

See also AIRPLANE INDUSTRY.

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Brandeis, Louis D. (1856–1941) *Supreme Court justice and social reformer* Born in Louisville, Kentucky, Brandeis's family moved to Germany in 1872, when his father sold the family business in Kentucky, anticipating the RECES-SION, or panic, that would follow in 1873. Louis attended school in Germany and entered Harvard Law School when his family returned to the United States. After graduating, he initially practiced law in St. Louis but quickly returned to Boston, where he established a practice with a law school classmate, Samuel Warren. The new firm became known as Warren & Brandeis. He continued to practice law in Boston until 1916.

Adopting social and economic reform causes early in his career, he became known as "the people's lawyer." Often working pro bono, he developed strong sympathies for the trade union movement and the women's rights movement. Between 1900 and 1907, he defended the public interest against the Boston utilities and also argued successfully before the U.S. Supreme Court that labor laws applied to women as well as men. During the argument, he made use of statistics and economic information, and this sort of presentation became known as the "Brandeis brief."

Brandeis was also an ardent opponent of monopoly concentrations and the abuses of the concentration of capital by New York bankers, often referred to as the "money trust." Many of his principles can be found in his 1914 book, *Other People's Money*, in which he described how bankers used deposits for their own political ends. It was written after congressional hearings into the money trust. He also wrote *Business*, *A Profession* (1914), about the success of Filene's Department Store in Boston.

Before World War I, Brandeis's political leanings were seized upon by his opponents in order to portray him as an enemy of big business. He opposed bankers' control of the New England railroads. He began a long legal battle against J. P. Morgan's control of the New Haven Railroad that lasted from 1905 to 1913. In the end, Morgan was forced to divest control of most of the bank's holdings. He also became arbitrator in a strike by New York garment workers. After seeing the plight of the workers, many of whom were Jewish, he became active in Zionist causes and remained so for the rest of his life. He was the author of Woodrow Wilson's economic platform in the 1912 presidential elections and often tutored Wilson on economic matters. As a result, Wilson named him to the Supreme Court in 1916. He was confirmed as the first Jewish justice despite some anti-Semitism surrounding his confirmation.

During Franklin D. Roosevelt's presidency, Brandeis often consulted with members of the administration at a distance. He upheld many of the legal challenges to the NEW DEAL brought before the Court but did argue that the NATIONAL RECOVERY ADMINISTRATION was unconstitutional. He retired from the Court in 1939 and died two years later. While best remembered as a justice, Brandeis was the embodiment of a crusading lawyer imbued with progressive ideas who often, and successfully, challenged big business during the era dominated by the trusts.

See also ANTITRUST; MORGAN, JOHN PIERPONT.

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Bretton Woods system The international monetary structure devised at a conference held at Bretton Woods, New Hampshire, beginning in 1944. Even before World War II ended, the Allies realized that the postwar period would require a new exchange rate system in order to prevent a recurrence of the distortions that characterized the foreign exchange markets in the 1920s and early 1930s and led to World War II. The power given to the International Monetary Fund (IMF) at the conference to monitor exchange rates lasted until 1971 and was known as the fixed parity system.

The Bretton Woods conference was called in order to create a viable monetary system that would take effect when World War II ended. One of its main objectives was to create a system in which unilateral devaluations of currency would not be possible without a country consulting its major trading partners. During the 1930s, unilateral devaluations were common as many major trading countries attempted to make their exports cheaper by devaluing their currencies, adding to the international economic slowdown. Bretton Woods created two major international economic organizations—the International Bank for Reconstruction and Development (World Bank) and the International Monetary Fund (IMF). The IMF was charged with maintaining the new dollar parity system adopted by the countries attending. The World Bank originally was charged with helping rebuild Western Europe but later began making development loans to less developed countries by borrowing funds in the international bond markets.

Under the Bretton Woods system, the U.S. dollar was given a gold value of \$35 per ounce, and the rate was fixed. Other currencies were then given a value in dollars that was allowed to fluctuate only \pm 1.00 percent from their parity value. If a currency fluctuated from this band, the country's central bank was obliged to intervene on its behalf. The dollar thus became the new international exchange standard, although gold remained the underlying standard because of the fixed rate given to the metal in dollar terms. The major trading currencies (hard currencies) traded in the FOREIGN EXCHANGE MARKET were quoted in dollar terms.

When trade conditions warranted, some currencies could become overvalued or undervalued with the fixed parity system. If a currency was overvalued, its exports would fall while imports rose, causing an imbalance in trade suggesting that the currency needed to be devalued. Under the system, the country involved would seek permission from the IMF to officially devalue its currency in dollar terms. A devaluation by a major trading country normally meant that one of its major trading partners would have to revalue its currency, stating its dollar terms higher than in the past.

In the summer of 1971, the U.S. dollar came under severe pressure in the markets because the United States was experiencing a balance of payments deficit. Political and economic pressure mounted for the United States to devalue, but the Nixon administration maintained that it would not do so. Then in August, President Nixon announced devaluation as part of an economic package designed to fight inflation. The convertibility of the dollar was severed, and the currency began to decline in the markets. After months of uncertainty, an international monetary conference, held at the Smithsonian Institution in Washington, officially ended the Bretton Woods system of fixed parities. The old band of 1 percent was replaced by a new one of 2.25 percent and gold officially revalued at \$38 per ounce. But the attempt at stability was short-lived, and within months the Smithsonian agreement collapsed. The new system that emerged was referred to as one of floating exchange rates.

Under the floating rate regime, the power of the IMF was substantially reduced over the major trading countries. Also, exchange rates for the major trading currencies were determined by market forces and used no fixed parities. Since 1972, the floating exchange rate system has become more volatile since no bands exist to constrain trading, and spot rates between currencies can fluctuate without any restraint unless a central bank decides to intervene on behalf of its own currency. The new volatility caused problems for American business since it required changes in the ways in which corporations hedged their foreign exchange exposures. Many companies began to experience wide swings on their balance sheets since their overseas assets and liabilities began to fluctuate more widely than in the past.

See also EURO; GOLD STANDARD.

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Brown Brothers Harriman A private banking firm founded in Baltimore in 1800 by Alexander Brown, an Irish immigrant, as a trading company specializing in textiles. His sons opened more branches of the house in other eastern cities and gradually moved into banking. The first branch was John A. Brown & Co., opened in Philadelphia in 1818. A New York office, Brown Brothers, was opened several years later and became the flagship for the other houses, which eventually closed down, leaving Brown Brothers as the premier private bank in New York before the Civil War.

A keen student of economics, Alexander Brown died in 1834. As a sign of respect for his efforts in keeping Baltimore and Maryland solvent in the wake of Andrew Jackson's refusal to extend the charter of the Second BANK OF THE UNITED STATES, all ships in Baltimore harbor lowered their flags to half-mast upon learning of his death. The firm remained under the control of family members well into the 20th century. Alex. Brown & Sons remained in Baltimore as a brokerage and is today a subsidiary of Deutsche Bank, which bought it in 1997.

The Liverpool branch of the bank was in financial difficulties in 1837 as a result of a panic in the United States, which severely affected British-American trade, and had to be bailed out by the Bank of England, with guarantees from Peabody & Co. in London, the predecessor of J. S. Morgan & Co. During another panic 20 years later, Brown Shipley, as the British firm became known, returned the favor and made a loan to allow Peabody to remain afloat after falling upon hard times.

Brown Brothers became the major private bank in the country in the 19th century until the emergence of Drexel Morgan & Co. in the 1880s. It engaged in banking, securities, and trade finance. Before the Civil War, it helped finance North Atlantic shipping, becoming principal owner in the Collins Line, a major North American shipping company sailing the North Atlantic. Several family members perished with the *Artic*, a transatlantic steamship that sank off Newfoundland in 1854, the greatest passenger shipping disaster prior to the sinking of the *Titanic*. After the war, Brown Brothers became the target of the muckraking efforts of Elizabeth Cady Stanton and Parker Pillsbury, who charged the Browns with mismanagement of the line. The firm also became involved in railroad financing after the war.

Need for additional capital required it to merge with Harriman banking interests in 1930, and it became known as Brown Brothers Harriman. The Glass-Steagall Act of 1933 forced the bank to give up its securities operations, which were spun off to Brown Harriman & Co., later to become Harriman Ripley & Co. One of its partners at the time was Prescott Bush, father of future president George H. W. Bush and grandfather of George W. Bush. But it remained a private bank and as such was able to retain its seat on the NEW YORK STOCK EXCHANGE. It remains one of the few private banks existing today, specializing in investment management and international finance in addition to private banking.

See also INVESTMENT BANKING.

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bucket shop A term originally used in the late 19th century to describe a place where small investors would place bets on stocks and commodity futures contracts. Bucket shops took orders from customers beginning with small odd lots, sometimes on margin as low as 10 percent of a stock or commodity's value, and would pretend to invest the money in the market. In fact, they usually did not invest it at all but simply paid the investor based on the stock's movement or sometimes disappeared, stealing investors' funds.

Often, the stock or commodity futures exchanges would find bucket shop operators on the floor of their exchanges, attempting to determine the direction of prices so that they would know what tips to give investors or how to invest their own money without assuming risk. The exchanges finally passed rules to eliminate them. Before World War I, the Chicago commodities exchanges, and particularly the CHICAGO BOARD OF TRADE, declared open warfare on the bucket shops in the courts in an attempt to drive them out of business. Often, the bucket shops would take customers' money and open a contrary position in the market, ensuring that the customers would lose their money while the bucket shop profited. The public's use of bucket shops in the pre-1920 period was relatively widespread since the shops appeared to be offering "leverage" to the man in the street.

The futures exchanges won a major victory against the bucket shops in a landmark Supreme Court case, *Board of Trade of City of Chicago v. Christie Grain & Stock Co.* in 1905. The bucket shops claimed that the exchanges and WESTERN UNION, the company that provided the wire services, were restraining trade by refusing them access to their transmitted prices. The Court ruled that the bucket shops could not use prices transmitted by the Chicago Board of Trade in their own business, pretending to be legitimate in the process. Although suffering a setback, bucket shops continued to thrive through the 1920s.

In the 1920s, their presence began to fade as the exchanges became more organized and less tolerant of their activities. Finally, the securities laws passed during the 1930s put an end to their activities. Today, the term is used to imply that a company deals for itself first rather than the clients it is supposed to represent as broker. During more recent bull markets and periods of intense speculation, many "boiler rooms" have appeared, selling worthless stocks and derivatives to unsuspecting investors, keeping the bucket shop tradition alive and well.

See also FUTURES MARKETS; STOCK MARKETS.

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Buffett, Warren (1930-) financier Warren Buffett was born in Omaha, Nebraska, on August 30, 1930, the son of a wealthy stockbroker. As a child he was allowed to work in his father's firm, where he absorbed useful investment principles and also dreamed of acquiring great wealth. More important, Buffett acquired an acute grasp of statistics and financial analysis that served him well throughout his long career. He passed through the University of Nebraska in 1950 and was greatly influenced by reading the book Security Analysis (1934) by Benjamin Graham and David Dodd. That same year he enrolled at Columbia University's business school to study under Graham and further inculcated his mentor's strategy for success on the stock market. This entailed buying stocks at no more than two-thirds of net capital and usually traded at low prices because other investors were ignoring them. Buffett was so impressed by Graham's approach that he offered to work at his investment firm without pay but was declined. He was eventually hired by Graham as an analyst in 1952, worked in New York City for four years, and then returned to Omaha in 1956. There, with \$5,000 of his own money and \$100,000 raised from other sources, he founded his own investment firm, the Buffett Partnership. At that time Buffett began formulating his own personal approach to investment, based on realistic appraisal of the companies in question and a determination to retain stock for as long as a firm was well managed. In time he also broke with Graham's approach of looking for statistical bargains and sought out companies that were underrated for various reasons.

From the onset, Buffett proved himself to be one of the 20th century's most brilliant investors.

His success enabled him to purchase controlling stock in the failing American Express company in 1963 and, as interim CEO, he turned it around with tremendous profit. Two years later Buffett bought out Berkshire-Hathaway, a textile firm based in New Bedford, Massachusetts. This investment repeatedly failed to realize profits, but Buffett used it as a means for raising additional capital for investments elsewhere. As usual he was spectacularly successful, and in 1969 he dissolved the Buffett Partnership to concentrate more on building his own wealth. Over the next two decades Buffett carefully acquired profitable companies such as See's Candies, various insurance companies, and numerous media outlets, all of which proved lucrative. By 1984 he was positioned to obtain controlling stock of the American Broadcasting Company (ABC) while also expanding his holdings in Time, Incorporated. The following year he orchestrated the takeover of ABC by Capital Cities and secured an 18-percent interest in the new company. In 1986 Buffett invested heavily in the Wall Street investment firm SALOMON BROTHERS, basically ignored the stock market crash of 1987, and reaped considerable profit by holding on to stock rather than selling it under adverse conditions. In 1995 Buffett fulfilled his most ambitious endeavor, that of arranging the acquisition of ABC by the Walt Disney Corporation. This resulted in formation of the world's largest media conglomeration, again with windfall profits for Buffett.

Presently, Buffett is the country's secondrichest man after Microsoft chairman Bill GATES.

But for all his wealth and influence he consistently projects a simple, homespun persona and continues living modestly in a home he acquired in 1958 for \$31,000. Buffett is also prone to dispensing folksy, down-to-earth advice to investors. His basic message is play the game for the long haul and ignore any notion of quick or easy profits. Investors are also advised to champion companies that are presently undervalued, yet are well managed, as these are most likely to return a steady profit on investments. He also looks unkindly upon venture capital firms as too unpredictable and feels that TV stations, advertising agencies, and newspapers are the best investment risks. Curiously, he declines to get involved with computers due to his unfamiliarity with high technology. The rumpled, down-toearth Buffett remains the chairman of Berkshire-Hathaway and is popularly viewed in investment circles as the "Sage of Omaha."

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John C. Fredriksen

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Carnegie, Andrew (1835–1919) *industrialist* Born in Dunfermline, Scotland, in 1835, Carnegie immigrated to the United States with his family in 1848. The family settled in Pittsburgh, Pennsylvania, where Andrew went to work to help support the family rather than attend school. He took his first job in a factory when he was 13 for a salary of \$1.20 per week.

After working at a telegraph company and teaching himself Morse code, Carnegie went to work for the Pennsylvania Railroad, where he was the personal assistant to Thomas Scott, later to be the railroad's president. He worked at the railroad for 12 years before striking out on his own. Recognizing that the cargo the railroad carried, especially crude oil, was more lucrative than railroading itself, Carnegie made some investments that increased his annual income to almost \$50,000 per year during the Civil War. In 1862, he organized a company to build iron bridges, initially for the Pennsylvania Railroad. The company was later reorganized as the Keystone Bridge Company and became one of the first companies to build bridges made of iron rather than wood, which had been the standard. The company supplied iron for the Eads Bridge

over the Mississippi River in St. Louis and the Brooklyn Bridge over the East River in New York. In 1867, he organized the Keystone Telegraph Co. to lay telegraph wires alongside railroad lines, recognizing that the railroad phenomenon had created a communication as well as transportation revolution.

In the early 1870s, Carnegie decided to expand into steel production. Steel had been improved significantly by the Bessemer process, developed in Britain by Henry Bessemer, and Carnegie decided to begin manufacturing it in the United States. Within a short period of time, he was producing steel for the RAILROADS and was quickly becoming one of the largest producers in the country. His first steel company was called Carnegie, McCandless & Co. His management style included a rigorous use of cost-cutting measures designed to make production as efficient as possible while keeping costs down. In 1889, he published the "Gospel of Wealth," in which he held that the wealthy have an obligation to guard society because of their wealth and merit. He later changed his views on social matters to more egalitarian positions. Although highly successful, a future acquisition caused Carnegie



Andrew Carnegie (LIBRARY OF CONGRESS)

eventually to reconsider his involvement in the industry.

In 1883, he acquired the Homestead steelworks in Pennsylvania but also inherited a labor dispute between the management of the company and its union, the Amalgamated Association of Iron and Steel Workers. Henry Clay FRICK was manager of the Homestead plant after Carnegie acquired it and adopted a hard-line position concerning striking workers. Frick attempted to break the union's hold on the plant and hired private Pinkerton detectives to guard against the workers. In the summer of 1892, a pitched battle broke out between the workers and guards. A total of 18 died in the battle before order was restored. The plant only reopened a year later in 1893. The public commotion caused by the affair brought labor practices in general,

and Carnegie's management of the plant specifically, under close scrutiny. The conflict tore at his interest in promoting labor's objectives on the one hand and cost efficiency on the other.

Finally, Carnegie decided to sell what had become Carnegie Steel to J. P. Morgan in 1901. He was approached by Charles SCHWAB, a close ally of Morgan, about selling the steelworks and wrote the selling price on a piece of paper that Schwab immediately gave to Morgan. Morgan agreed to the \$480 million purchase price, to be paid in bonds and stock, and the deal became the largest takeover in history. The resulting company became known as U.S. STEEL and was the largest in the world. It was the first company whose balance sheet was valued at more than \$1 billion. As a result, Carnegie became the richest man in the world. He also became one of the most disconsolate, at least temporarily, when Morgan later confided to him that he could have received \$100 million more if he had held out for a higher price.

After selling Carnegie Steel, Carnegie engaged in philanthropy on a scale not yet seen in American business. He founded the Carnegie Institute of Technology in 1900 and endowed thousands of public libraries, colleges, and universities through the Carnegie Endowment, established in 1911. He also established the Carnegie Endowment for International Peace in 1910. He died in Massachusetts in 1919.

See also Morgan, John Pierpont; steel industry.

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Carrier, Willis H. (1876–1950) *engineer and inventor* Born in Angola, New York, Carrier was from an old New England family; one of his ancestors was burned at the Salem witch trials. After finishing high school and teaching for several years he entered Cornell and graduated with a master's degree in 1901. In the same year, he went to work for the Buffalo Forge Co. as an experimental engineer. While working at the company, he met Irving Lyle, who would later be his business partner. A year later, he made his first air-conditioning installation in a Brooklyn, N.Y., printing plant. For the first few years, air conditioners were used to cool machines, not buildings as is common today.

Carrier was involved with air-conditioning throughout his life. He received his first patent for an "apparatus for conditioning air" in 1906. He presented his "Rational Psychrometric Formulae," the basis for calculations in air conditioning, to the American Society of Mechanical Engineers in 1911. Using their pooled savings of \$35,000, Carrier and a group of like-minded engineers founded the Carrier Engineering Corp. in 1915.

From the beginning of his career, Carrier was concerned not only with lowering temperature but controlling humidity as well. The first commercial enterprises to install his devices were movie theaters in Texas, using the machines to cool the environment rather than industrial machines. The era of modern air-conditioning engineering began in 1922, when he developed the first safe, low centrifugal, refrigeration air conditioner using a nontoxic refrigerant. In another coup for his invention, Congress installed air conditioners in 1928. By 1930, Carrier had installed more than 300 air-conditioning units in movie theaters around the country.

Carrier's operations were moved from Newark, New Jersey, to Syracuse, New York, which lured him with local tax incentives and other inducements. In 1939, he developed a system capable of cooling SKYSCRAPERS. He held more than 80 patents during his career, including those for refrigerants as well as for mechanical innovations.

Carrier's inventions are credited with helping the United States develop its infrastructure and businesses uniformly throughout the country, regardless of climate. As air conditioners improved and became more affordable, they ceased to be a luxury item and became standard for new buildings as well as existing structures. New areas of the country were opened for development, especially in the South and Southwest, and a new phase of post-World War II migration began. Known as "The Chief," he died in New York City at age 73. His company was bought by United Technologies Corporation and remains a UTC subsidiary. His invention is one of the most significant, but overlooked, American developments of the 20th century.

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cartel A group of companies banding together to control the price of goods or services by regulating the supply. By regulating the supply, they are able to control prices and quantity. Usually, the members of a cartel are the largest producers in the industry, which may otherwise have few other members of significance. More recently, the term *shared monopoly* has been used in place of cartel.

Cartels originated during the mercantilist age when several companies sharing the same interests banded together in order to control prices. During the early years of industrialization, cartels were common because there were not enough companies existing to provide competition in some industries. The first cartel of significance in the United States was the South Improvement Co., formed in 1871 by John D. Rockefeller's Standard Oil Co. and other oil producers. The company successfully negotiated rebates with the RAILROADS that would lower their haulage costs while at the same time paying them a kickback from the fees paid by nonmembers of the company. When the new rates were accidentally posted before an announcement was made, many small oil producers discovered that their haulage rates had increased sharply and blamed the company for their plight. When the SHERMAN ACT was passed in 1890, cartels became illegal in the United States as they were considered to be organizations formed to restrain trade and fair competition. Other ANTITRUST laws, notably the CLAYTON ACT, also attempted to control cartel formation and behavior.

While antitrust laws forbid cartels in the United States, they do operate internationally, often controlling the supply and affecting prices of commodities. The best-known international cartel is OPEC (Organization of Petroleum Exporting Countries), a group of oil producers, mainly from the Middle East and Asia, that controls the output of oil from their countries. It is an example of a government-controlled cartel, organized to protect the prices and supply of the countries' major export.

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chain stores The name given to retail stores that establish branch operations in multiple locations, often across state lines. Originally, the term was applied to department and grocery stores that began expanding and later was applied to large all-purpose stores that sold more than one

line of merchandise. Usually the stores were an expanded form of a well-known, established retailer.

Chain stores were established in the late 19th and early 20th centuries, but the 1920s proved to be crucial to their development. After World War I, many stores began expanding into branches in order to capitalize on the prosperity of the 1920s. Among the first were retailers that had started as catalog merchants. SEARS, ROEBUCK opened its first branches in 1925; Montgomery Ward began in 1926. The grocery, or food, chains were already operating extensive branch operations. The GREAT ATLANTIC & PACIFIC TEA CO. had 14,000 branches nationally by the late 1920s, while Safeway and Piggly Wiggly Stores expanded regionally. Clothing retailers such as J. C. PENNEY also expanded rapidly during the decade.

The expansion of the stores was aided greatly by the popularity of the automobile, which allowed people to drive to the stores in order to shop. The combination of the two helped revolutionize American life and contributed to the development of the suburbs. Most of the original stores were located in major cities, and they viewed the development of the suburbs as a natural expansion of their urban business. But the movement was not without its critics, many of whom maintained that the stores were destroying the small-town character of rural and semirural American life. The stores began a political and public information campaign to fight these attacks in the 1920s.

Many of the chain stores were financed by smaller Wall Street investment banks in the 1920s such as Merrill Lynch, GOLDMAN SACHS, and LEHMAN BROTHERS. Critics held that Wall Street was helping to destroy small-town America and that the chain stores were behaving like monopolies. The same criticism was also leveled at banks and movie theaters, both of which were also expanding. The chains became a major public policy issue in the 1930s, with critics claiming that they were destroying the American way of life by ruining small businesses while sending profits out of the community to big cities such as New York and Chicago. There was also an element of anti-Semitism in this attitude since similar arguments were leveled against Jews in Germany, who either owned or operated many large retail establishments.

Banks and cinemas ultimately faced either antitrust charges or antiexpansion legislation designed to prevent them from crossing state lines or insisting on exclusivity by showing only studio-produced films. The MCFADDEN ACT was seen as an antibank expansion law by many when it was passed in 1927. In 1936, the chain stores faced their greatest challenge when the ROBINSON-PATMAN ACT passed Congress. The act was aimed directly at the chains and became known as the "chain store act."

The stores kept expanding after World War II despite the protests and legal challenges. The stores moved into the suburbs with the general expansion of the suburbs in the 1950s and 1960s and became anchors at many newly built shopping malls. The major chains developing in the post-1970 period, such as Wal-Mart, heard similar complaints as they expanded around the country in the 1970s and 1980s. Their critics maintained that they were driving small merchants out of business by undercutting prices and establishing themselves through economies of scale that smaller merchants could not match.

See also K-Mart; Merrill, Charles; Walton, Sam; Ward, Aaron Montgomery.

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Chase Manhattan Bank In 1799, a water company named the Manhattan Company was founded in New York. Part of its original charter also provided for a banking company, which was begun as the Bank of Manhattan Company. Among its founding members were Alexander HAMILTON and Aaron Burr. The bank quickly became established in New York City and originally made loans to New York State to finance expansion of the ERIE CANAL.

After the Civil War, John Thompson founded the Chase National Bank, named after Salmon P. Chase, secretary of the Treasury during the war. The bank obtained its charter as a national association through the NATIONAL BANK ACT of 1864, designed to rationalize the banking system. In 1927, it became the largest bank in the country, with assets of \$1 billion. Along with some other large banks, the bank delisted its stock from the NEW YORK STOCK EXCHANGE in 1928, ostensibly to prevent speculation. In 1930, Chase bought the Equitable Trust Company from the Rockefeller family, which received a substantial block of stock in return. From that time, Chase became known as the "Rockefeller bank." David Rockefeller later became chief executive of Chase in 1961.

The bank's reputation suffered in the early 1930s as it became one of the focal points of discontent after the Crash of 1929 and the early years of the Great Depression. During Senate hearings in 1933, Albert Wiggin, president of the bank during the 1920s, testified about his own activities during the stock market bubble. It was revealed that he had often traded the bank's stock for his own account even when it appeared to run counter to the bank's interests. It was he who had the stock delisted from the stock exchange, and the speculation occurred during the same period. As a result of his revelations and those of others, the BANKING ACT OF 1933 was passed. His successor, Winthrop Aldrich, helped heal the image of the bank, and he became one of the few bankers supporting financial reform during the NEW DEAL. After the new law was passed, Chase divested itself of its securities affiliates and chose the path of commercial rather than INVESTMENT BANKING like J. P. Morgan, which also chose COMMERCIAL BANKING.

Throughout the 20th century, much of the bank's growth came through MERGERS. The Bank

of Manhattan Company bought the Bank of the Metropolis in 1918; Chase purchased it in 1955 and changed its name to the Chase Manhattan Bank. By 1955, the bank had purchased more than 20 smaller banks. Like many other large banks in the 1950s and 1960s, Chase wanted to expand to the suburbs, outside its Manhattan base, but was initially constrained by local New York banking laws. The bank created a HOLDING COMPANY, the Chase Manhattan Corporation, in 1969 in order to diversify its holdings and expand; that same year a change in New York State banking laws allowed banks to cross county lines, something they had been prohibited from doing in the past. As a result, the bank opened branches in Long Island and other boroughs of the city. The bank also listed its stock on the stock exchange again after an absence of 40 years.

As part of its expansion in large retail banking, the bank developed the New York Cash Exchange (NYCE), the first successful major attempt at automated teller machines (ATMs), in 1985. The bank maintained a mix of retail and wholesale banking functions. In 1996, it merged again, this time with the Chemical Banking Corp. to again form the largest bank in the country. It lost the top spot shortly thereafter when CITIBANK merged with Travelers Group.

In 2000, it completed its best-known merger when it purchased J. P. Morgan & Co. in order to gain entrance into investment and wholesale banking. The \$36-billion stock-only deal closed in December 2000, ending J. P. Morgan's long history of independence. The new entity was named J. P. Morgan Chase, with the Morgan side conducting investment banking and wholesale banking business while the Chase side emphasized retail banking in its many forms. The new bank ranked as one of the top-five banking institutions in the country.

See also Bank of America; Bank of New York; Morgan, John Pierpont.

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chemical industry The U.S. chemical industry owed a great debt to Europe, where an inorganic chemical- and coal-based industry, with emphasis on synthetic dyestuffs, started to develop well before it did in this country. The domestic industry came into its own when hydrocarbons from American refineries and natural gas started to be used as feedstock for an organic chemical industry, while Europe's organic chemicals were still based on coal. World War II gave a further impetus to this so-called petrochemical industry, as North American companies built plants to produce aromatics for high-octane aviation gasoline, synthetic rubber for tires, and a variety of plastics all based on hydrocarbon feedstock. Petrochemical production processes became the growth engine for chemical production throughout the world, with the United States leading in the development and commercialization of many new technologies in this area. As chemical engineering, the science that led to the construction of very large and economical plants, was also pioneered in the United States, the country became the worldwide leader in growing a robust chemical industry. It made synthetic products-polymers and plastics, synthetic rubber, fibers, solvents, adhesives, and many other products-available at relatively low cost to consumers, thus spurring rapid growth of the industry as natural materials-wood, cellulose, glass, paper, metals-were increasingly replaced by synthetics.

Europe and Japan built a similar petrochemical industry, often based on U.S. technologies. Later, other regions and countries started to build plants of this kind, a trend that accelerated as a number of countries in the Middle East and elsewhere started to industrialize, in some cases based on inexpensive local hydrocarbons from crude oil and natural gas. The U.S. chemical industry, which had undergone an unprecedented wave of innovation, development, and growth between 1940 and 1970, entered a more mature phase by the 1980s, when technology development slowed and international competition started to become a factor.

Many petrochemical processes had started to reach the limit of further improvement, and so researchers turned their attention increasingly to pharmatechnology and biotechnology, to electronic chemicals for computers and other hightech equipment, and to other such specialties, which had greater potential for profit. At the millennium, the U.S. chemical industry was in intense competition with many other countries and had largely lost the advantages it had originally enjoyed due to low-cost feedstocks available on the U.S. Gulf Coast. The industry is now considered largely mature, in a manner similar to that of the cement, steel, and paper industries, but it has remained one of the biggest and most important domestic industries.

The domestic chemical industry can be said to have started in the Philadelphia area when DUPONT DE NEMOURS built its first black powder plant in 1802, followed a couple of decades later by a sulfuric acid plant built in Bridesburg. In Baltimore shortly thereafter, a superphosphate plant was built, which treated bones with acid. In 1839, Eugene Grasselli, an Italian immigrant, built a lead chamber sulfuric acid plant. Tar distilleries, based on coal tar from coke ovens, started being constructed later in the 19th century, separating from tar wastes and off-gases a number of organic chemicals, such as benzene, phenol, creosotes, naphthalene, and higher aromatic chemicals, as well as ammonia. Coal-based town gas for household uses also started being produced, yielding similar materials as chemical byproducts. The Solvay process for the production of soda ash, developed in Europe, was placed into production near Syracuse, New York, in 1884, and two other plants of this kind were built at the turn of the century to supply the new plate glass industry. A Canadian, T. L. Willson, built an electric furnace to make calcium carbide, leading to the production of acetylene and calcium cyanamide in North America in 1905, a notable producer being American Cyanamid.

Europe's chemical industry led that of the United States in a number of ways, based on a traditionally greater emphasis on chemical research in Germany, France, England, and other countries. In the late 1700s and 1800s, researchers such as Lavoisier, Berthelot, Gay-Lussac, Kekule, Sabatier, Woehler, Liebig, Perkin, Nobel, and others made many breakthrough developments that led to the establishment of plants to produce synthetic dyestuffs, human-made fibers, explosives, soda ash, solvents, and medicines, such as acetylsalicylic acid (aspirin). Synthetic dyestuffs such as alizarin and indigo, to supplant and eventually replace imported natural dyes, began production in England, Germany, and France in the 1860s and 1870s using raw materials from coal distilleries. The German chemical industry in particular became paramount not only in its own market but also in exporting to other countries including the United States. Eventually the I. G. Farben CARTEL became so powerful that it dominated world production in many chemicals, as it also established plants, joint ventures, or other cooperative arrangements (such as selling cartels) with U.S. producers DuPont, Allied Chemical, and others. The development of dynamite production by Alfred Nobel, based on nitroglycerine, led to another worldwide cartel, which included two plants in the United States by 1873.

Nitric acid was first produced by the Merrimac Chemical Company in 1905 and aniline by the Benzol Products Company in 1912. Synthetic phenol via the chlorobenzol process was made by DOW CHEMICAL shortly after World War I, taking over from a less efficient phenol process.

The first plastics developed in England were based on nitrocellulose and camphor and known as Xylonite. In the United States, John Wesley Hyatt, looking for a substitute for the ivory used in billiard balls, established a plant in Newark, New Jersey, to make this type of polymer in 1872, giving it the name Celluloid. It was soon used to make knife handles, films, collars and cuffs, and other products. It became the most important plastic produced until 1909, when Leo Baekeland, a native Belgian who had immigrated to the United States, discovered another plastic material based on phenol-formaldehyde, which was termed Bakelite.

Monsanto had been established in 1902, first as a producer of saccharin, then of other organic and inorganic chemicals. Cellulose was also initially used to produce so-called manmade fibers and films. Cellulose acetate, first produced in France, did not become commercially important until acetone could be used as a solvent, leading to so-called acetate silk, manufactured in the United States and elsewhere around the turn of the century. The first highly successful manmade fiber, viscose rayon, based on wood or cotton pulp, was developed by Courtaulds in England in 1895 and was first produced in the United States by Avtex Fibers in 1910.

By 1914, the U.S. chemical industry had become relatively self-sufficient, with the exception of having to import potash and nitrates, as well as having essentially no dyestuffs industry. Chlor-alkalies were being produced in quantity at Niagara Falls and elsewhere, with Hooker Chemical, Niagara Alkali, and Dow as important producers. The Frasch sulfur mining process developed on the Gulf Coast, where large deposits had been discovered, started to yield large quantities of sulfur for sulfuric acid production and other sulfur compounds. Borates were produced by U.S. Borax in the West. Stauffer Chemical was making acids and phosphates, and a British firm, Albright and Wilson, was producing phosphorus and sodium chlorate. Industrial gases were produced by Air Reduction Company, affiliated with Air Liquide in France, and by Linde Air Products Company.

Union Carbide and Chemicals acquired the Presto-Lite company, which had for some time produced acetylene from calcium carbide for use in automobile headlights and street lights. Union Carbide also bought an interest in Linde and started experimenting at Linde's plant in Tonawanda, New York, to crack hydrocarbons in order to make both acetylene and ethylene from ethane, plentiful in natural gas. A commercial plant was built near Charleston, West Virginia, in 1921, and by 1927, the firm was making ethylene glycol for a product needed in antifreeze protection for automobiles. In 1923, Ethyl Corporation introduced tetraethyl lead to raise gasoline octane, making possible the development of high-compression car engines.

High-pressure synthesis work in Germany just before the war was responsible for one of the biggest chemical industry breakthroughs, the development of a process to make synthetic ammonia from hydrogen and nitrogen. While the process was patented and therefore not readily available to U.S. companies, within a decade Shell Chemical in Martinez, California, and DuPont at Belle, West Virginia, were able to build synthetic ammonia plants with successful operations achieved in 1930, using a somewhat lower pressure to skirt the BASF patents.

Dow Chemical, incorporated in 1892, had become a large producer of bromine from wells in the Midland, Michigan, area. A joint venture with Ethyl Corporation at Kure Beach, North Carolina, used a process to extract and purify bromine from seawater. In the late 1930s, Dow built the first large-scale outdoor chemical complex on the Texas Gulf Coast to extract bromine and magnesium from seawater, also making chlorine-caustic, ethylene, ethylene glycol, and ethylene dibromide, used as a solvent for tetraethyl lead (TEL).

Thermal cracking plants installed by refineries were yielding increasing quantities of ethylene, propylene, and aromatics, all ideally suited as petrochemical feedstocks. The first so-called petrochemical plant was built by Esso (now Exxon) at the Bayway, New Jersey, refinery, making isopropyl alcohol via the hydrolysis of refinery propylene, using sulfuric acid to effect the reaction. Esso at that time had strong relations with Germany's I. G. Farben combine, whereby the know-how for a number of technologies developed by the two entities was shared. For example, the German firm provided to Esso its know-how in hydrogenation reactions, while Esso shared its knowledge of making TEL. In the late 1930s, Esso started high-temperature steam cracking of crude oil fractions to ethylene and higher olefins, related to the work that Union Carbide had been doing in Charleston. Hydrogenation was used to remove sulfur from refinery streams going into gasoline and fuel oils.

Shell Chemical at its Emeryville, California, research laboratories was developing techniques to make high-octane blending components (e.g., isooctane) from propylene and butylenes using a dimerization catalyst. Other developments commercialized by Shell in the 1930s included synthetic glycerin and methyl ethyl ketone, which became an important paint solvent.

The 1930s also saw considerable progress in the field of plastics. Union Carbide and B.F. GOODRICH developed techniques to soften polyvinyl chloride (PVC) resin, the product formed by copolymerization with vinyl acetate, the latter by the development of so-called plasticizers. PVC became the first important thermoplastic resin, finding a myriad of uses in piping, seat covers, shower curtains, toys, and other applications. Meanwhile, Dow was working on technology to produce styrene, leading a few years later to production of polystyrene resins, which have much greater clarity than PVC. Dow polystyrene was put on the market in 1937.

The much-heralded work by Wallace Carothers at DuPont led in the late 1930s to the development and commercialization of a number of synthetic polymers and fibers, notably nylon. Somewhat earlier, DuPont had built a plant to make neoprene, a specialty rubber. Teflon, an inert plastic with many uses, was also developed by DuPont around the same time.

An important shift in plant design saw the construction of chemical plants in open-air sites, starting on the U.S. Gulf Coast at such places as Freeport, Texas (Dow), Texas City (Union Carbide, Monsanto), Baton Rouge (Esso, Ethyl Corporation), Orange (DuPont), and Lake Charles (PPG, Conoco). Previously, following European tradition, plants had generally been built inside buildings.

The 1930s also saw the end of U.S. chemical companies' participation in several cartels that had their origin in Europe. The Justice Department and the FEDERAL TRADE COMMISSION attacked these cartels as being monopolistic and in restraint of trade. Only export cartels, as allowed under the Webb-Pomerine Act, were allowed from that point forward.

The Second World War was a crucible for the North American chemical industry, as it became one of the most essential industries supporting the war effort. With imports of natural rubber from Japanese-controlled Malaysia no longer possible, several domestic companies developed synthetic rubbers for tire and hose production based on styrene, butadiene, and acrylonitrile. Some of this technology had also come from Esso's exchange of technical information with I. G. Farben.

Work on dimerization, dehydrogenation, and aromatization of hydrocarbon fractions produced massive amounts of high-octane blending components for aviation and automobile gasoline. Fighter planes in particular required high-octane for rapid takeoffs. A number of synthetic polymers and fibers were produced in increasing quantities, including nylon for parachutes, polyethylene for radar equipment, specialty solvents, and many other "petrochemicals." Antibiotics, more powerful than the sulfa drugs then in use, were developed during this period, with production of penicillin by Merck, Pfizer, Squibb, and Commercial Solvents Corporation, among others.

The Manhattan Project, which in 1945 resulted in the capitulation of Japan due to the bombs dropped on Hiroshima and Nagasaki, was one of the most significant achievements, as chemical engineers learned how to separate and concentrate uranium isotopes to produce fissionable materials.

The end of the war, with its shortages of consumer products and an even longer pent-up demand as a result of the Great Depression, brought about an unprecedented buying wave in durable goods such as housing, automobiles, and appliances. With synthetic materials becoming broadly available to factories that shifted their output from war materials to consumer goods, petrochemicals started a period of "double digit" growth that lasted until the late 1960s. Now, a number of companies wanted to make petrochemicals, which were rapidly replacing, in many applications, such conventional materials as glass, wood, natural rubber, iron, copper, aluminum, and paper. A number of old-line companies making these traditional materials (e.g., U.S. STEEL, Goodyear, B.F. Goodrich, Georgia Pacific, Pittsburgh Plate Glass) and others now entered the manufacture of petrochemicals, using technologies licensed from engineering firms and competing with the traditional chemical companies that were loath to let in these newcomers. Most of the oil companies now also established a petrochemical division. By the end of the 1960s,



Dow production plant for Saran Wrap (LIBRARY OF CONGRESS)

sales of several petrochemicals were measured in billions of pounds per year.

The 1960s and 1970s saw a rapid increase in the internationalization of the chemical industry. German, French, British, and Dutch firms made a number of acquisitions and joint ventures in the United States, such as Wyandotte Chemical by BASF; Mobay, a joint venture between Monsanto and Bayer; ICI's acquisition of Atlas Chemical; and DSM's majority investment in the fiber company American Enka. Belgium's Solvay established a U.S. subsidiary. Conversely, such firms as Dow Chemical, Union Carbide, DuPont, Gulf Oil Chemicals, Esso Chemical, National Distillers and Chemicals, and Monsanto invested in Europe, generally building plants for which exports had previously established good markets.

This was also a period when chemical producers recognized the economic advantage of scale and started to build much larger ("single train") plants than had been built to date. In ethylene, ammonia, styrene, and several other products, these large plants, which were made possible by a number of chemical engineering process and equipment breakthroughs, established new economics for the MASS PRODUCTION of these chemicals.

A pattern of consumption of chemicals was being established, and it continues to the present time. Highest production inorganics were sulfuric acid, ammonia, chlorine, caustic, phosphoric acid, hydrogen, oxygen, and nitrogen gas. Highest production organics were ethylene, propylene, ethylene dichloride, benzene, urea, and styrene. Plastics and resins included polyethylene (several densities), polypropylene, PVC, and polystyrene. Synthetic fibers were led by polyester, nylon, and olefin.

This period also saw the establishment and/or rapid growth of a number of specialty chemicals manufacturers, such as W. R. Grace, Hercules, Nalco, Petrolite, Witco, National Starch and Chemicals, and many others. These firms, generally using less complicated technologies, made various types of chemicals (e.g., adhesives, sealants, water treating chemicals, photographic chemicals, mining chemicals, personal care chemicals) that facilitated production processes or imparted special characteristics to consumer products. Fine chemicals were also produced in large quantities, in many cases as feedstocks for a rapidly growing PHARMACEUTICAL INDUSTRY, including such firms as Pfizer, Merck, Smith Kline, Wyeth Laboratories, Eli Lilly, and American Home Products.

The first oil shock in 1973 and the second in 1978–79 became landmark events for the domestic chemical industry. It soon became clear that the industry could no longer depend on very cheap, copiously available hydrocarbon feedstocks to produce petrochemicals. From a pre-1973 price of \$3 per barrel, crude oil prices rose as high as \$30 per barrel in 1979, eventually settling between \$15 and \$25 per barrel in the 1980s and 1990s. Natural gas, which had cost as little as 15 cents per million BTU, rose to a level between \$2 and \$2.50, following the higher crude oil prices as well as higher production costs and diminishing sources of low-cost gas.

Important changes were taking place as the U.S. chemical industry faced increasing maturity, with demand growth for its products dropping from a double-digit rate to less than twice the GDP growth and with technology innovation at a much lower level. Meanwhile, a number of countries in the developing regions of the world (Korea, Thailand, Malaysia, Taiwan, Brazil, and Saudi Arabia) were rapidly building up an internal chemical industry, either to supply local markets or for exports or both. Inexpensive hydrocarbon deposits in western Canada, the Middle East, and several other areas provided the basis for large export-oriented plants, which started to compete strongly with the once heavily advantaged U.S. petrochemical plants on the Gulf Coast. By the end of the century, the balance of trade in chemicals, once highly positive and amounting to more than \$20 billion of exports over imports, had actually become negative.

A tremendous amount of industry restructuring and, to a lesser extent, consolidation took place in the 1980s and 1990s, as companies had to decide whether to stay in or to quit the production of highly competitive petrochemicals and whether to shift much of their portfolios to the production of higher-value specialties. Many old-line chemical companies (Stauffer, Allied Chemical, National Distillers, etc.) disappeared due to MERGERS and acquisitions, and a number of oil companies decided to sell or exit their petrochemical operations.

The chemical industry had also become a target of environmentalists, who pointed to the hazardous nature of its operations and the exposure of workers and the public to toxic chemicals. The industry became highly regulated at the federal, state, and local levels and was spending a large part of its cash flow on meeting environmental standards and on chemical testing.

Once the darling of the investing public due to its rapid growth and the miracles of technology that have been responsible for a plethora of new synthetic materials, the chemical industry has become increasingly embattled as it tries to operate in a manner to satisfy its various stakeholders. With exports declining due to foreign competition, and some products voluntarily phased out due to their toxic characteristics, it has remained one of the largest domestic industries, essential to our standard of living, yet increasingly on the defensive and unsure of its future.

See also PETROLEUM INDUSTRY.

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Peter Spitz

Chicago Board of Trade (CBOT) A commodities and futures exchange established in Chicago in 1848. Originally designed as a commodities marketing exchange, the board quickly became devoted to trading in futures contracts. During the Civil War, the exchange became prominent by buying and selling futures contracts on staple commodities such as wheat and corn. By the 1880s, the exchange was the bestknown business enterprise in Chicago. Other similar exchanges were also developed in St. Louis, Kansas City, and Minneapolis.

Originally, the CBOT and other commodities exchanges traded contracts that guaranteed buyers and sellers prices and deliveries on a specific future date-but the actual contracts were not negotiable after being originated. Traders quickly developed a market, and soon speculation became the primary activity on many of the exchanges. The CBOT especially became known for corners and bear raids, massive speculative operations by traders and speculators conducted on the floor, or pits, of the exchange. In corners, traders would try to corner the entire supply of a commodity using both physical commodities and futures contracts in order to exact higher prices. In bear raids, commodity contracts were sold short, forcing down prices. These operations became so notorious that they attracted other operators who would try to entice small investors to gamble on commodities in BUCKET SHOPS. The CBOT achieved a notable victory over the incursions made by the bucket shops in a U.S. Supreme Court decision in 1905, Board of Trade of City of Chicago v. Christie Grain & Stock Co. The Court denied the bucket shops information generated on exchange prices and transmitted by the Western Union Company.

By the 1890s, the CBOT became the largest futures market in the world and began a drive to force the bucket shops out of business. The market prospered during World War I and began adding new contracts to those already traded in the pits. These contracts were for agricultural commodities. The exchanges were all restrained somewhat by a series of commodities trading regulations passed in the 1920s and 1930s and were limited by measures passed during World War II to restrain prices and speculation.

During World War II, exchange activity declined significantly as price controls on many commodities curtailed speculation and restricted trading in many commodities. New contracts began to develop after the war, and contracts began appearing on nonagricultural commodities that severely strained REGULATION on trading because they were not included in the Commodity Exchange Act passed in 1936.

In the 1950s and 1960s, the CBOT began adding new contracts again in order to maintain its spot as the largest futures exchange. It added contracts on livestock to the agricultural commodities it already traded. But the biggest change to its way of doing business came in the early 1970s, when it began experimenting with financial futures and options. Since options on futures contracts were prohibited at the time, the exchange helped develop the Chicago Board Options Exchange (CBOE) in 1972. The new subsidiary traded options on common stocks independently of the CBOT. The CBOE soon became the largest options exchange in the world.

Also beginning in the early 1970s, the CBOT began introducing contracts on financial instruments. It was soon trading futures contracts on Treasury securities and financial indexes. A crosstown rival, the International Monetary Market, developed by the Chicago Mercantile Exchange, established in 1919, began offering contracts on financial instruments at the same time, and the two became the largest financial futures exchanges in the country. Options trading remained on separate exchanges even after options on futures contracts were reintroduced after the COMMODITY FUTURES TRADING COMMIS-SION was established in 1974. The commission became the first significant regulator of the futures exchanges, covering all futures products, not only those on agricultural commodities.

In the 1990s, many of the exchanges began experimenting with electronic trading and links with foreign futures exchanges. The CBOT retained its open outcry system in the pits, with floor traders known as market makers remaining the ultimate source of prices

See also FUTURES MARKETS; OPTIONS MARKETS.

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Chrysler, Walter Percy (1875–1940) *industrialist* Born in Wamego, Kansas, Chrysler began his career as a machinist's apprentice after finishing high school. His first job was as an apprentice machinist at the UNION PACIFIC RAIL-ROAD yards, where he developed an interest in machinery that would last his entire life. He later joined the Chicago and Great Western Railroad as a superintendent. He moved again to the American Locomotive Company. He began disassembling automobiles and learning how to reconstruct them in his spare time, and that interest led him to the automobile industry.

Chrysler purchased his first car in 1908, a Locomobile, and immediately took it apart and then rebuilt it to learn as much as possible about automobile engineering. He joined the Buick Motor Company in 1912 as a manager at half of his old salary and became its president in 1916. He then joined GENERAL MOTORS as a vice president of operations. He made numerous improvements to car production since the company was still being run by carriage makers rather than by automotive engineers. He did not get along with the president of GM, William C. DURANT, and retired when the company was reorganized in 1920.

Chrysler was able to retire a millionaire, although he returned to the auto industry soon thereafter when he began to reorganize the Willys Overland Co. at a salary of \$1 million per year. In 1925, he took control of the ailing Maxwell Motor Co. and transformed it into the CHRYSLER CORP. The new company produced his first car, equipped with four-wheel hydraulic brakes and a high-compression motor. Within four years it became the second-largest producer in the country. Its most notable product was the Chrysler Six, a six-cylinder engine car that became one of the most popular in the country.

Chrylser's most notable acquisition was the purchase of the Dodge Brothers' Motor Co. from Clarence Dillon of DILLON READ & CO., a New York investment bank, in 1928. Growing through acquisition would become a trademark of his company in the future. Adding Dodge to his line substantially increased the company's name and reputation and enabled it to become the secondlargest carmaker. Previously, it was fifth in a very crowded market. Chrysler also added two new lines, the Plymouth and the DeSoto, after acquiring Dodge.

In the 1920s, he also financed the construction of the Chrysler Building in New York City, at the time the world's tallest building, eclipsing the Woolworth Building in southern Manhattan. He was unaware that the Empire State Building was being secretly planned to be the world's tallest building by John RASKOB, the former president of General Motors. Personal rivalries between industrialists were characteristic of the era before the 1929 stock market crash. Chrysler was president of his company from 1925 to 1935 and after relinquishing the job remained as chairman of the board of directors until his death.

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Chrysler Corp. Traditionally the third-largest American manufacturer of automobiles, behind GENERAL MOTORS and Ford. The company traces its origins to the Maxwell-Briscoe Co., formed by Jonathan Maxwell and Benjamin Briscoe in 1903 in Tarrytown, New York. The first car produced by the company was the Maxwell. In 1910, the United States Motor Car Co. was formed, consolidating several smaller manufacturers, including Maxwell, although the company failed three years later. The company was then bought by Walter Flanders, who renamed it the Maxwell Motor Co. in order to capitalize on its most popular car and brand name.

But the new reorganization did not ensure the company success. By 1920, it had fallen into financial difficulties again, and Walter CHRYSLER, the retired president of Buick and a vice president of General Motors, was tapped to form a reorganization committee. As a result, the Chrysler Corp. was formed in 1921. The company continued to produce the Maxwell and also introduced the six-cylinder Chrysler Six in 1924, which became very popular in its own right. In 1926, the company announced a luxury model, the Imperial. Two years later, it began production of the Plymouth and the DeSoto. In 1928, it also made one of its largest acquisitions to date.

Chrysler was approached by Clarence Dillon of the Wall Street firm DILLON READ & CO. The manufacturer had been owned by Dillon for several years after he bought it from the Dodge family following the untimely deaths of the Dodge brothers who had guided the company. He offered to sell it to Chrysler. The purchase price was \$170 million, and Dodge became a division



The 1952 Chrysler Windsor club coupé (LIBRARY OF CONGRESS)

of Chrysler, adding to its product line. In the 1930s, the company announced new designs for its cars, including the Airflow concept, which changed cars from boxy carriages to more modern, flowing styles. Most vehicle production was devoted to the war effort in the early 1940s, but the company began introducing rapid style changes to its lines in the 1950s and 1960s.

The company began to run into financial difficulties in the late 1970s. In 1979, Lee IACOCCA, a former Ford executive, was named chairman, and in the following year, the company had to be bailed out by a federal loan, one of the few ever made to the private sector. The federal government loaned Chrysler \$1.5 billion under the Loan Guarantee Act. Chrysler also sold its defense division to General Dynamics. The restructuring was successful, and the company was able to repay the loan in 1983. The early 1980s were considered the turning point for the company, which was able to survive its financial difficulties.

In 1984, the first minivan was introduced, and the vehicle became one of the most impor-

tant product lines in the company's history. A year later, the company entered an agreement with Mitsubishi Motors of Japan to jointly build subcompact cars in the United States. Later in the 1980s, it established a seven-year/70,000-mile power train warranty for its cars and in 1987 completed a takeover of American Motors, absorbing the country's fourth-largest car manufacturer. The deal allowed it to acquire the Jeep line of vehicles. In 1988, the company introduced the first passenger vehicle equipped with a standard driver-side airbag.

By the 1990s, the company again was highly profitable. A prolonged takeover fight with investor Kirk Kerkorian in the 1990s shook the company and eventually caused it to seek a merger partner. Finally, in 1998 it merged with Daimler Benz of Germany in what was described as a "merger of equals." Ultimate management control of Chrysler moved to Germany as a result. The company remained the number three domestic automaker behind General Motors and Ford, although it was classified as a foreignowned corporation.

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Cisco Corporation A manufacturer of INTER-NET routing equipment founded in 1977 by two Stanford computer specialists who invented the Internet router because they could not communicate with each other over the Internet using the current technology. In less than 20 years, Cisco would become the most widely held stock in the country and at one time had the highest market capitalization of any stock in the United States.

The company began to grow exponentially, paralleling the use of the Internet, first in academia and then in general commercial use. The company grew rapidly in the 1990s, under the aegis of John Chambers. He joined Cisco in 1991, when it was already becoming known as a Wall Street favorite. Chambers became CEO in 1995 and continued the aggressive strategy that made the company a phenomenally rising star.

Rather than build from the ground up, the company adopted a growth-by-acquisition strategy in the 1990s. Using a rising stock market to good advantage, Cisco acquired many companies in related fields by paying for them with its own stock, which kept rising in the market because its earnings continued to grow. For example, the company paid \$4.1 billion for StrataCom in 1996, a manufacturer of computer networking technology. At the time, the acquired company had sales of \$335 million, meaning that Cisco paid a multiple of 12 times sales for the company. Paying multiples of sales or potential sales was a sign of the

"new economy," in which all tried and tested techniques of valuation were overlooked. Three years later, Chambers announced that Cisco was paying \$7 billion for privately owned Cerent Corporation, a small network equipment company that had been in existence for only a year.

The strategy made Cisco the largest manufacturer of Internet routing equipment, identified closely with the Internet itself. But the acquisitions growth began to slow considerably in 2000, when the stock market indexes began to fall, and Cisco could no longer use its increasing stock value to pay for acquisitions. During the 1990s, its acquisitions were paid for with what was known as "Cisco money," highly priced stock that paid for additional acquisitions at prices unheard of in the technology industry.

Cisco began to experience competition from overseas manufacturers in the late 1990s and early 2000s but maintained its market in the face of competition. After its stock fell to a low of \$9 per share, the company became identified with the excesses of the Internet age, although it remained the premier company in its industry and one of the most widely held stocks in the country.

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Citibank Since the early 20th century, one of the three largest U.S. banks. It was established in 1812 as the City Bank of New York, a state-chartered bank. In its first quarter-century, it functioned primarily as a credit union for its

merchant customers, with bad debts sometimes restricting its ability to provide services and increasing the bank's reliance upon often volatile banknotes and interbank balances. After the Panic of 1837, a dynamic new director, Moses Taylor, a wealthy merchant closely linked to millionaire fur trader John Jacob ASTOR, gradually acquired a controlling interest in the bank, holding its presidency from 1856 until he died in 1882, to be succeeded by his son-in-law, Percy Pyne. Eschewing banknotes and interbank balances, Taylor and Pyne pursued policies of strong liquidity and high cash reserves, enabling the institution-rechartered in 1865 as the National City Bank of New York-to finance their family's extensive railroad, utility, and commercial ventures.

In 1891, Pyne appointed James W. Stillman, an able New York businessman and securities underwriter with close family ties to the Rockefeller petroleum interests, president of the National City, then 12th in size among New York City banks. Stillman aggressively expanded the bank's operations; in the decade after 1895 its assets grew 22 percent annually, making it the nation's largest bank, a status he guarded jealously, and the first to acquire \$1 billion in assets. Its capitalization rose from \$3.4 million in 1891 to \$49.3 million (with profits of \$5.2 million) in 1907, with Stillman, William, and Percy Rockefeller as controlling stockholders. Stillman rapidly expanded the bank's operations into INVESTMENT BANKING, underwriting numerous securities issues for such clients as the UNION PACIFIC RAILROAD interests of E. H. HARRIMAN, which in turn provided lucrative investment opportunities for National City's growing number of corporate industrial clients, prominent among whom were large RAILROADS and the Rockefeller Standard Oil interests. On securities issues National City often worked closely with major New York investment houses, notably J. P. Morgan & Company and KUHN LOEB & COMPANY. The National City also benefited from extensive correspondent relationships with rural American banks, for whom it undertook profitable New York exchange transactions. Under Stillman, it embarked on an aggressive merger and acquisitions program, controlling or acquiring stock in the Third National Bank, the Fidelity Bank, the Hanover National Bank, the Riggs National Bank, and several others. The National City aggressively sought federal government business and by 1897 was the largest national government depository; early in the 20th century, Treasury secretaries employed such government deposits to relieve fluctuations in the money market. In the Panics of 1893 and 1907, the National City's continuing strong liquidity policies won it numerous deposits from depositors and borrowers seeking security.

In 1899, Stillman hired as vice president Frank A. Vanderlip, an innovative former financial journalist and assistant secretary of the Treasury, who became president in 1909, leaving Stillman supreme as chairman until his death. Vanderlip dramatically expanded the National City's securities business, and call loans rose from one-third of total loans in the 1890s to twothirds in the 1900s. Vanderlip also became prominent in the movement to expand American foreign commerce and investment, building on the foreign trade department Stillman had established in 1897 and instituting a new training program designed to equip young bank personnel for overseas service. By 1907, the National City financed one-third of American cotton exports and had established an impressive foreign correspondent network. Vanderlip was among the most outspoken campaigners for a U.S. central bank system, in part because this would facilitate American banks' capacity to finance foreign commercial transactions, invest abroad, and establish overseas branches. After the Federal Reserve Act was passed in 1913 and the First World War began in 1914, Vanderlip rapidly acquired the International Banking Corporation, opened 132 branches in Asia, Latin America, and Russia, participated in extensive wartime loans to foreign governments and the financing of substantial overseas trade, and established the American International Corporation to purchase non-American businesses. These ventures' ambitious scope, along with substantial National City losses after the November 1917 Bolshevik seizure of power in Russia, alarmed both Stillman, who died in 1918, and other prominent National City directors, who in 1919 dismissed Vanderlip, who had nonetheless laid the foundations of National City's subsequent international preeminence among American banks.

Charles E. Mitchell, appointed president in 1921, built on his predecessors' accomplishments, expanding COMMERCIAL BANKING services to large corporations and wealthy individuals, but also opening branches throughout New York to attract numerous small individual depositors and offering them opportunities to purchase domestic and overseas securities. By 1929, its associated National City Company handled almost one-quarter of all such bond issues floated in the United States, though Mitchell's enthusiastic underwriting of shaky German and Latin American securities, while highly profitable throughout the later 1920s, ultimately brought National City large losses and his own dismissal and public disgrace. The 1933 Banking Act forced National City to renounce investment banking. Gradually recouping its position in the 1930s, during World War II National City handled extensive U.S. government accounts.

After 1945, the National City—renamed First National City Bank in 1956, after acquiring the First National Bank of New York, a one-branch blue-chip institution with substantial assets and several major corporate accounts—came under the dynamic leadership of the internationally minded Walter B. Wriston, who became president in 1968, remaining chief executive officer until 1984. Later renamed Citibank (in 1976), it recouped its international position, opening or reopening branches in every major overseas country. From then onward no other American financial institution could match its international interests. Wriston also aggressively sought both large and small domestic depositors, attracting smaller customers with loan, mortgage, and credit card facilities, and pioneering the introduction of automatic teller machines in all branches. The financial deregulation of the 1980s enabled Citibank further to extend its activities, and under the Citicorp holding company umbrella it once more marketed securities and offered domestic and overseas clients a wide range of investment facilities. In the later 1990s, it launched an impressive campaign to expand its overseas operations in Asia, where many local clients believed American-based financial institutions offered greater security than their local counterparts.

In 1998, Citibank was merged with the Travelers, an insurance company run by Sanford WEILL. The merger was the largest in history at the time and marked a significant change in the ownership and operation of banking institutions. As part of the deal, the two institutions needed to comply with the relevant provisions of the BANK HOLDING COMPANY ACT and the Glass-Steagall Act. Within a year, however, the Glass-Steagall Act was replaced by the FINANCIAL SERVICES MODERNIZATION ACT, and the merger became permanent.

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Priscilla Roberts

Clark Dodge & Co. A merchant and INVEST-MENT BANKING firm founded by Enoch Clark (1802–56) after the Panic of 1837. Clark had been a partner in the firm of S. & M. Allen & Co., a merchant bank that failed during the panic. The Allen firm originally was a dealer in lottery tickets and became one of the first members of the NEW YORK STOCK EXCHANGE when it established permanent indoor headquarters after 1817.

Clark and his brother-in-law Edward Dodge established their bank in Philadelphia with capital of \$15,000. The original firm was known as E. W. Clark Dodge & Co. While working for the Allens in their Providence, Rhode Island, office, Clark gained experience speculating on the Boston Stock Exchange that he would put to use in his own firm. The main business of the new firm was trading in gold bullion and BANKNOTES. The firm succeeded quickly and opened offices in St. Louis, New Orleans, and New York as well as other offices in the Midwest. New York soon became the main office.

Like many other small but well-connected merchant banks, Clark Dodge became prominent when it assisted the Treasury in issuing bonds to pay for a war effort. When the Mexican War began in 1846, the firm shared underwriting of TREASURY BONDS with the better-known bank Corcoran & Riggs of Washington, D.C. Employing his branch system to good use, Clark made more money floating the interest on the bonds between his different offices and the U.S. Treasury than he did by selling them.

The firm became larger as a result of its success and admitted several new members to partnership, including Jay COOKE, who was admitted in 1849. Before the Civil War, the firm also helped underwrite scores of railroad bonds, allowing the senior members of the firm to go into semiretirement. But the Panic of 1857 put the firm under severe strain, and its offices closed temporarily, then opened again when the panic subsided. When it did reopen, it was without the services of Jay Cooke, who had left and opened his own firm shortly after. Enoch Clark died in 1856, a year before the panic. Clark Dodge and Jay Cooke & Co. both played a vital part in selling Treasury bonds to finance the war, with Cooke playing the major role.

Clark Dodge became one of Wall Street's bestknown names, although it never grew to a substantial size, remaining a second-tier underwriter for most of the 20th century. It opened several branch offices in the Northeast. Like many other firms, it entered the investment management business in the 1920s after the major banking and securities laws were passed and developed a substantial presence in managing investor funds. Finally, in the 1970s it was acquired by KIDDER PEABODY & Co. and merged into Kidder's investment management business.

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Clayton Act One of the three major ANTITRUST laws in the United States, the law was passed following congressional hearings in 1912 that revealed much about the nature of American business and finance. Many business combinations had been formed despite the existence of the SHERMAN ACT since 1890, and Congress decided to attempt to plug some of the loopholes.

Largely as a result of the Standard Oil decision in 1911, both conservatives and liberals were unhappy with judicial interpretations of the Sherman Act. While the Supreme Court approved the antitrust conviction and breakup of Standard Oil, it also announced a rule of reason that seemed wishy-washy to Progressives. All three political parties (Republican, Progressive, and Democrat) advocated significant congressional supplementation of the antitrust laws. Wilson's victory guaranteed that the revision would be substantial. The Clayton Act, which was passed in 1914, defined prohibited practices much more specifically than the Sherman Act had.

Section two of the Clayton Act condemned a type of PREDATORY PRICING attributed to Standard Oil, whereby the large firm charged a very low price in the victim's market, "recouping" its costs by charging higher prices in other markets where it already had a monopoly. Section three prohibited tying, or the monopolist's insistence that the buyer could purchase a desired product only if it took a second, perhaps undesired, product as well; and exclusive dealing, or a seller's requirement that the buyer take the contracted good only from that seller. Section four included an expanded right of private plaintiffs to seek treble damages plus attorney fees for antitrust suits. Section five provided that, if the government should win an antitrust case, private plaintiffs suing the same defendant need not prove the case again, but must show only their injury. Section six was designed to immunize labor unions-a form of cartel-from antitrust claims of price fixing or boycott. Section seven prohibited anticompetitive MERGERS between competing firms. Finally, section eight prohibited interlocking directorates-that is, prohibited the same person from serving on the board of directors of two competing companies.

Almost immediately the Clayton Act had a significant effect on antitrust jurisprudence, with the Supreme Court condemning several practices under the new statute, such as both tying and exclusive dealing, that had been approved under the older Sherman Act standards. The development of a more aggressive merger policy came later. The labor exemption proved ineffectual and had to be supplemented by further legislation during the NEW DEAL.

See also ROBINSON-PATMAN ACT.

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Herbert Hovenkamp

Coca-Cola Co. A beverage company founded by John S. Pemberton in 1886, Coca-Cola became the most recognizable brand in the world. When the company was founded, soda beverages were considered medicinal, to be taken for minor stomach ailments. Root beer had been introduced 10 years before, and Coke's major rival, Pepsi Cola, was founded 10 years later. However, when drinking alcoholic beverages became less fashionable and Prohibition became law, soft drinks became more popular, and Coke soon became the most popular brand.

Pemberton concocted the drink in a vat in his backyard and sold the first batch to Jacobs Pharmacy in Atlanta in 1886. The store sold the first drinks to customers for 5 cents each. Sales for the first year totaled around \$50, but within 10 years the beverage became the most popular soda fountain drink. The script that became the company's logo was designed by Pemberton's accountant, who wrote the name longhand. An Atlanta businessman, Asa Candler, acquired ownership of the company in 1891 and then began marketing it nationwide. Three years later, the first factory to manufacture the syrup outside Atlanta was opened in Dallas.

In 1906, Coke was manufactured outside the United States for the first time, in Cuba and Panama. The Roots Glass Company designed what became the famous contoured bottle in 1915, and it, too, became a symbol of the beverage. By 1917, more than 3 million bottles were sold per day. A group of Atlanta businessmen bought the company in 1919 for \$25 million. Coke had already implemented its own unique distribution system of allowing independent bot-



Advertisement for Coca-Cola, ca. 1890 (LIBRARY OF CONGRESS)

tlers to brew and distribute the product. The franchise system of bottling and distribution became an industry standard that still exists today.

By 1920, more than 1,000 bottlers existed selling the product in the United States and abroad. Under Robert Woodruff, the company began emphasizing bottle sales, and the company began a series of promotions for which it would become famous in the advertising world. Woodruff remained at the helm of the company for six decades and was responsible for its exponential growth and popularity. In 1928, the company established a link with the U.S. Olympic Committee by donating a thousand cases to athletes. By 1940, the beverage was bottled in more than 40 countries. The brand name became so well established that by the 1960s the term *Coca-Cola imperialism* began to be used to identify the export of American pop culture.

In the early 1980s, Roberto Goizueta was named chairman, and the company began introducing other products to its line in response to the continuing challenge by Pepsi. Not all of the new products and innovations, such as the "New Coke" product and its accompanying ad campaign, proved successful, but the company retained its hold on both its market and its brand name after Goizueta's death in 1997.

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coffee industry Coffee has been not only one of the most valuable imports into the United States for a century and a half, but it has also become one of the most valuable industries in the United States. From a very simple commodity chain involving delivering green beans to the end users, coffee became surprisingly complicated and industrialized. Wholesale and retail grocers were the innovators in reshaping the trade. From being simple middlemen as merchants, they increasingly became industrialists, though the revolution was as much one of distribution as of production.

Coffee has had diverse appeals. Sometimes it has been a drug, other times a hospitality drink or a prestige item. It has attracted consumers on three major gradients: taste, price, and convenience. It faced various competitors (tea, alcohol, cereal substitutes, soft drinks), some of which caused coffee manufacturers to produce better coffee and others that caused market segmentation based more on price and convenience than on quality. What is meant by "coffee" has varied considerably over time. Coffee enjoyed some unusual characteristics, starting as a luxury drink and becoming a national necessity, as the federal government recognized during the two world wars. Though coffee was a mass drink, it required a good deal of effort to turn it into a mass produced and marketed product. The U.S. market was unusual, and because of its wealth and great size, it began to shape the world coffee business. Coffee in the United States was consumed mostly in homes, not in cafés as was common in much of Europe. Drunk in the home, it was the housewife who decided what coffee to purchase and serve. Hence, wholesalers and retailers have been oriented much more toward women consumers than men. With the grocery store, not the café, as the site for choosing the product, large roasters and brand names first appeared in the United States.

The United States underwent a revolution when, by the middle of the 19th century, Americans were each drinking more than five pounds of coffee a year, one of the highest amounts in the world. By 1880, the per capita total reached 8.4 pounds, and by the end of the 19th century the United States was consuming 13 pounds per capita and importing more than 40 percent of the world's coffee. (This would grow to more than 60 percent after World War II.) The U.S. population's 15-fold explosion in the first century of American independence meant that total coffee imports grew 2,400 percent. Half of the growth in world consumption in the 19th century was due to increased U.S. purchases.

With the Civil War, coffee moved slowly away from being simply a domestic drink and purely a breakfast beverage. War, combined with the growth of major cities such as New York and the spread of industry, led ever more people to drink coffee outside the home, in the field and at hotels and train stations. The Civil War also modernized production and distribution of provisions. For coffee, the timing was good. The Austrian Max Bode had invented the spherical roaster in 1851, which improved control over even oven temperatures. More important for American troops was the pull-out roaster produced by the New Yorker Jabez Burns in 1864, allowing more regular roasting and on a much larger scale. Grocers began to roast coffee for their customers and sometimes grind it. This business seems to have grown rapidly after 1874. It is estimated that there was a 20fold increase in roasted coffee sold in the 20 years after the outbreak of the Civil War.

The fact that the United States had by far the most developed railroad system in the world helped spread coffee drinking to the country's interior without making the beverage prohibitively expensive for the working class. The railroad also helped bring down the price of essential staples for consumers, providing greater discretionary income with which to buy former luxuries such as coffee.

The creation of the New York Coffee Exchange in 1882 institutionalized access to information. Prices and grades thereby became more generalized. Middlemen such as importers and jobbers were reduced, while the trade became more industrialized. In 1883, 90 percent of the coffee business was in green coffee sales and only 10 percent was for roasters. By 1913, the numbers were the reverse: 95 percent of the buyers at the exchange represented roasters and only 5 percent green beans.

The first packaged roasted coffee was Osborn's Celebrated Prepared Java Coffee, which started in 1860. A technological problem, as well as a lack of consumer trust and differences in consumer taste, kept large roasters from quickly dominating the national industry in the way that giant refiners dominated sugar. Although green coffee keeps for years, roasted coffee loses its aroma and taste quickly. Ground roasted coffee dissipates even faster. Consequently, roasters had to have regional distribution sites.

The packaged brand coffee spread after a major technical breakthrough came in 1898, when Edwin Norton invented vacuum packing,

which allowed roasted, ground coffee to retain its flavor. This was part of a general revolution in the food industry. In 1903, Hills Brothers was the first coffee company to commercially adopt vacuum packing, though it was not yet perfected. The notion of an impersonal, distant brand was still not accepted by most housewives at the beginning of the 20th century. Distribution channels were still locally based, and most shoppers had personal relationships with their grocers, who offered them credit and premiums but not much choice.

The ability to preserve roasted coffee in vacuum packages and the creation of grocery CHAIN STORES allowed emerging national brands to occupy an ever larger place in the trade in the United States. The GREAT ATLANTIC & PACIFIC grocery chain, which began by selling tea and coffee, went the furthest in vertical integration. A & P was providing fully 15 percent of all coffee purchased in the United States by World War I and was the fifth-largest industrial corporation in the United States.

Controversies over purity in coffee as well as in other foods threatened to retard the expansion of the packing and distribution industries. The same crusade that would bring Prohibition in 1919 brought in 1907 the United States Pure Food and Drug Act. It decreed that imported coffee be marked according to its port of exit and be free of additives. Decaffeinated coffee was invented in Germany at the turn of the century as an outgrowth of the pure food campaign. The decaffeinated coffee companies such as Koffee Hag and the cereal-based substitutes such as Postum challenged traditional coffee. There was a continued advance of consumption from 8.4 pounds per capita in 1880 to 18.4 pounds in 1949, the high mark in U.S. history. A new coffee product, instant soluble coffee, also stimulated consumption.

The expansion was largely due to a Swiss company, Nestlé, which started marketing Nescafé in 1938 and quickly dominated the market. By the 1960s, as much as one-third of homeprepared coffee was soluble. Unfortunately, the convenience of instant coffee undermined the quality of the brew. Instant coffee mostly employed robusta coffee, a faster growing but more bitter species than the arabica. The growth of the coffee market continued in the 20th century because of the rise of supermarkets in the 1930s, which led to a great increase in advertising. Selling a vastly larger number of goods, the supermarket depended upon small margins but large volume. Ever more coffee companies competed on price rather than the quality of their blend and relied ever more on advertising.

As supermarkets began covering the country, General Foods (evolving from Postum) and Standard Brands (which had been Royal and Fleischmann Companies as well as Chase and Sanborn) created enormous food CONGLOMERATES. Success in the postwar mass food processing industries depended upon market power, that is, capital and access to supermarket shelves. Giant food conglomerates such as General Foods, COCA-COLA, and Ralston Purina bought up smaller successful coffee companies. They sold nationally with little attention to regional preferences. A result of the growth of conglomerates and supermarkets was that a small number of roasters dominated that trade. By the 1950s, the five largest roasters in the United States roasted more than one-third of all coffee and held 78 percent of all stocks. By the 1990s, three companies were responsible for 80 percent of the U.S. coffee market-General Foods, Proctor and Gamble, and Nestlé-and dominated much of the international market as well. Nestlé alone bought 10 percent of the world's coffee crop annually. They used market power and advertising to dominate the coffee market. By 1996, two enormous companies, Phillip Morris (\$135 million) and Procter and Gamble (\$95 million), spent twothirds of the America's \$354 million coffee advertising budget.

As the leading brands merged into some of the largest companies in the world, they became overshadowed by more global corporate strategies. The parent companies are not coffee concerns. Phillip Morris owns Kraft Foods, which bought General Foods. It owns Maxwell House, Sanka, Brim, Yuban, and General Foods' International Coffee brands. Phillip Morris owns not only several competing coffee brands, but also coffee substitute brands such as Sanka and competing convenience drinks such as Kool-Aid, Capri Sun, and Crystal Light.

These companies have also expanded internationally. In 1978, the four firms' concentration ratio for the eight largest markets was 59 percent for roasted coffee and 75 percent in soluble coffee (almost all of which was produced by Nestlé and General Foods). Since then concentration has grown. However, consumption in the United States has fallen sharply from its high in 1949 (in pounds per capita) or in the early 1960s when the measure was changed to cups of coffee a day. Per capita coffee consumption in the United States was down from its peak of 3.2 cups per day in the 1960s to less than 2 cups in 1996.

There is a countertrend as well in the growing gourmet market. Joined with the fair trade movement, coffee houses emphasize high-quality, high-priced brews with some concern about the environmental impact of production techniques and the treatment of laborers. Specialty coffeepots and espresso makers are a booming market, but they entail less than a quarter of the total market. In fact, despite popular perceptions that coffee consumption is rapidly expanding and the quality is improving, the United States is one of the few areas in the world where per capita consumption is not growing. The result of this change is that while the United States is still in gross terms the world's largest coffee consumer, its share of imports has fallen dramatically. After World War I the United States imported almost two-thirds of the world's coffee and in 1961 still half. By 1993, the total had fallen to less than 20 percent. Americans still consume the most caffeine, but now it is in the form of soft drinks.

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Steven Topik

Colgate, William (1783–1857) manufacturer William Colgate was born in Kent, England, on January 25, 1783, the son of a farmer. In 1795, his father, a vocal proponent of the French Revolution, fled England with his family to avoid prosecution. They settled in Baltimore, Maryland, where Colgate was indifferently educated. His family subsequently relocated to Virginia and then New York, while he eventually resettled in Baltimore in 1798 to work as a tallow chandler in the candle-making business. Colgate proved himself both industrious and adept in business matters, and he eventually acquired his own soap works. He sold his company and moved to New York City in 1803 to work for the firm of John Slidell & Company. Colgate eventually rose to business manager there, and in 1806, he founded a new firm, William Colgate & Company. As a businessman, Colgate was cognizant that urban areas required large quantities of soap and candles, and he determined to make his products and service distinct from competitors. For example, he pioneered free home delivery of soap to ensure a steady supply of loyal customers. In 1807, he assumed a partnership with Francis Smith, and the two men profited from the Embargo and Non-Intercourse Acts directed against competing products manufactured in Great Britain. By 1813, Colgate was sufficiently profitable that he bought out his partner's share, and within four years he was the leading soap manufacturer of the New York region. Four years later he was among the first American soap manufacturers to successfully compete for a share of the European market.

Colgate also distinguished himself from competitors by an incessant willingness to upgrade and improve his line of products for consumers. Soap was then used primarily as a detergent for laundry or cleaning hands. Being made largely from ash and animal fat, it was coarse, abrasive, and smelled bad. In 1820, Colgate began experimenting with starch as a low-cost filler in his hand soap to bring down costs, and he soon became the largest starch manufacturer in the country. Eventually he became one of the first American companies to adopt the European practice of saponification, which introduced new forms of tallow and oils to the soap manufacturing process. In 1829, he copied the European practice of adding perfume to his soap products, thereby increasing their appeal to women, who were his primary consumers. Colgate's products were considerably successful, and in 1845, he was induced to build a soap-boiling pan with an internal capacity of 43,000 pounds. This was the largest such device in the world at that time and allowed Colgate to further expand both his production rates and markets. In 1847, he brought his son in as a full partner and relocated his business to New Jersey, where he had been producing starch for years. In 1850, he introduced perfumed, high-quality soap products for upscale consumers, which gave his products a greater appeal to the rising middle class. Not surprisingly, Colgate, who did all the bookkeeping, buying, and promotional activity by himself, never suffered a serious business loss.

In addition to business concerns, Colgate further distinguished himself from contemporaries by his personal commitment to philanthropy. A fervent Baptist since 1808, he regularly tithed to church interests and in 1816 helped establish the American Bible Society. In 1832, Colgate partially founded the American Baptist Home Mission Society to preach the Gospel throughout North America. In 1837, he withdrew from the American Bible Society and subsequently founded a new organization, the American and Foreign Bible Society, for religious proselytizing abroad. To that end, in 1850, Colgate funded the first major English-language translation of the Bible since the King James version. He also donated funds to the Hamilton Literary and Theological Seminary, which in 1890 was expanded into

present-day Colgate University. Colgate died in New York City on March 25, 1857, the leading soap magnate of his day. As such he made indelible contributions to the rise of personal hygiene for the lower and middle classes and to the expansion of religious instruction in America. In 1928, his firm merged with Palmolive Peet Company, forming one of the largest soap and household product firms in the world.

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John C. Fredriksen

Colt Firearms An arms manufacturer founded by Samuel Colt (1814–62) in Paterson, New Jersey. The company was founded to produce Colt's idea for a revolving-cylinder handgun, which he patented in 1836. The new invention was a radical change from handguns that used flintlock technology and were capable of firing only one round. His invention allowed five or six rounds to be fired consecutively before reloading.

Colt also manufactured carbine rifles. Despite developing several models of gun, the Paterson factory closed in 1842. The factory and equipment were sold, and Colt dabbled in other ventures, including the development of underwater ammunition, including mines, and collaboration with telegraph inventor Samuel F B. MORSE. After the Mexican War began in 1846, Colt's firearms again became popular when the army used limited quantities of them in Texas. The U.S. Ordnance Department bought a thousand of the newly designed handguns, and Colt began producing them in Connecticut with the help of Eli Whitney Jr., son of the inventor who had originated the concept of interchangeable parts years before.

In 1851, Colt became one of the first American manufacturers to set up facilities in England in order to manufacture his products abroad. The parent company was incorporated in 1855 with the issuance of 10,000 shares, of which Colt kept all but four shares for himself. It sold its products to retailers through a sales force of agents and jobbers. When the Civil War began, Colt ceased selling his guns in the South and supplied only Union forces. In 1861, the firm had 1,000 employees and earned about \$250,000 per year. Colt died shortly after the war began, and the company remained under family control until 1901, when it was sold to outside investors. In 1867, it began producing Gatling guns, a prototype of the later machine gun. A special revolver made for the Texas Rangers also proved popular and reliable. It was made in a Colt factory in Paterson, New Jersey.

During World War I, Colt collaborated with John Browning and produced Browning automatic rifles and machine guns. The company also produced the most famous of its products, the Colt .45 semiautomatic pistol. During both world wars, Colt produced more than 2.5 million of them for the government, and the weapon became famous as one of the most effective and reliable of all time. After the war, the company was purchased by the Penn-Texas Corp. and began to diversify into other areas such as machinery and even commercial washing machines.

In the 1960s, the company introduced several lines of automatic rifles, including the famous M-16. In 1964, the parent company reorganized as Colt Industries, and the firearms part became known as Colt Firearms. More automatic weapons were introduced in the 1980s, but the company suffered a setback when the Colt .45 was replaced as official government issue in 1984. After a series of unsuccessful corporate maneuvers, the company filed for Chapter 11 BANKRUPTCY in 1992. But product development continued in the 1990s with the introduction of new automatic rifles. In the 1990s, the company also began developing smart-gun technology.

Colt produced the most recognizable handguns in the world. The original revolver is forever associated with the opening of the American West, and the automatic became the most famous handgun used in World War I and in the years following.

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Columbia Broadcasting System (CBS) One of the three major broadcasting networks, founded in 1927 and developed and expanded by William S. Paley (1901–90) from 1929. Born in Chicago, Paley studied at the University of Chicago and graduated from the University of Pennsylvania in 1922. At age 27, using funds from his father's investments, Paley purchased working control of the struggling CBS radio network. A year later, more family funds helped him purchase total control of the company.

After purchasing a group of independent radio stations, Paley moved his headquarters to New York to be near the heart of the ADVERTISING INDUS-TRY. He began giving his radio programs to his affiliates for free in return for advertising slots, a novel concept at the time. The strategy was very successful, and he claimed more than 70 affiliates within two years of beginning operations.

CBS took the high road to broadcasting. In 1930, the network began broadcasting concerts by the New York Philharmonic and also created Columbia Records. The label pioneered the longplaying (LP) record, introduced in 1948. The large disk revolutionized the recording industry and made Columbia the leading record company in America. Other divisions were added, including news and entertainment. When television appeared and became widespread, the company was again in the forefront and produced many quality programs in addition to a host of soap operas and quiz shows. From the 1950s, the network became known as the "Tiffany network," a compliment reflecting its high-end programming and networking standards.

The network remained at the top of the ratings race until the 1980s, when it lost its top spot to NBC, its traditional rival. Under Lawrence Tisch's leadership, the company divested its publishing and recording divisions in an attempt to become leaner and focus on its core business. Then in 1995 Tisch sold his stake in CBS to Westinghouse Electric, and the company began to regain some of its momentum. The new CEO, Mel Karmazin, merged the company with another media giant, Viacom. Paley's company now was part of an entertainment empire that included Paramount Pictures, MTV, VH1, and Nickelodeon cable companies, among others.

See also SARNOFF, DAVID.

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commerce clause The section of the Constitution (Article 1, Section 8, Clause 3) that gives Congress the authority "to regulate Commerce with foreign nations, among the several States, and with the Indian tribes." The section became one of the most contentious parts of the Constitution in the 19th century and became a central issue in disputes between the states and the federal government.

The clause had its first serious application by the Supreme Court in a case that revolved around a ferry service between New York and New Jersey.

New York had granted an exclusive steamship monopoly to a company run by Robert FULTON and Robert LIVINGSTON and piloted by Aaron Ogden. A rival New Jersey company, run by Thomas Gibbons and piloted by Cornelius VAN-DERBILT, challenged the monopoly in court. Losing in the lower court, the case found its way to the Supreme Court, where Chief Justice John Marshall ruled in favor of the New Jersey company in the landmark case Gibbons v. Ogden (1824). Marshall held that commerce between states was more than simply traffic, it was also social intercourse and included navigation. By ruling in favor of Gibbons, the Court effectively used the clause to strike down a state-granted monopoly. In the absence of ANTITRUST legislation at the federal level before 1890, the commerce clause became one tool used to battle alleged monopolies when it could be shown that transportation companies sought to eliminate competition or fix prices by controlling interstate commerce.

The Court recognized that the power did not extend to commerce that was purely intrastate. But when interstate commerce was involved, it fell within the purview of the Congress. The issue arose again after the Civil War when the RAILROADS began to expand in the American West. The states attempted to regulate the activities of the railroads, and one case found its way to the Supreme Court in 1877. The Court ruled in Munn v. Illinois that certain sorts of industries, including railroads and grain storage facilities, operated in the public interest and as such were subject to its authority. Munn ran a grain warehouse and was charged with operating without a license. The Court upheld an Illinois Supreme Court ruling upholding his conviction, stating that such businesses were "clothed in the public interest." Nine years later, however, advocates of railroad regulation were disappointed when the Court ruled in Wabash Railway Co. v. Illinois (1886) that the states could not regulate railways simply passing through the states.

Applications of the commerce clause to railroad regulation were not used by the federal government to regulate the rails unless a case arose in which a defendant claimed that state regulations actually involved unconstitutional burdens upon interstate commerce, as in the case of *Munn*. In 1887, Congress created the INTERSTATE COMMERCE COMMISSION to oversee the railways. But the commerce clause was still a major issue even after the SHERMAN ACT was passed in 1890.

In United States v. E.C. Knight Co. (1896), the Court ruled that the company had not acted illegally to restrain trade or commerce despite the fact that the United States had argued that it was part of a larger trust, the American Sugar Refining Co., which actively acquired smaller companies in the 1890s. The decision led to an unprecedented merger boom. Cases that followed, notably Addyston Pipe & Steel Co. v. United States (1899) and Swift & Co. v. United States (1905), were found in favor of the government when it claimed that the companies operating locally could still affect interstate commerce by their decisions.

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commercial banking The term given to banking institutions that provide a full array of customer services to both retail and business customers. In the 19th and early 20th centuries, commercial banks served mostly business customers, and "commercial banking" was appropriate when describing them. Banks accept deposits from customers, and make loans at a higher rate of interest. Originally, most of the deposits accepted were from business customers, and the loans made were also to businesses for short to medium terms.

Commercial banks were organized in the late 18th century around the time of American Inde-

pendence. The Bank of North America was chartered in Philadelphia by Robert MORRIS and was followed by the BANK OF NEW YORK, chartered by Alexander HAMILTON in 1784. Throughout the 19th century, banks remained partnerships and conducted business mainly with businesses and wealthy individuals. They were confined to their home states and often their home cities or counties. Interstate banking did not exist, being prevented by state banking laws that kept out-of-state banks from encroaching on local markets. In addition to the commercial banks, commercial banking on a limited scale was done by private banks-smaller banks that also conducted securities operations. Individual savers usually kept their savings at thrift institutions that were organized to grant them mortgage credit if they kept their deposits with the same thrift.

Banking was mostly a state-level affair until the Civil War. Most banks obtained a charter from and operated within their home states. In the absence of a central bank, especially after the closing of the Second BANK OF THE UNITED STATES, many state banks issued their own banknotes, backed by specie. While acceptable within the state, having different notes issued by the states sometimes slowed interstate commerce and often led to widespread forgery. Only when the Civil War broke out did Congress attempt to remedy the situation.

The first major banking law at the national level was passed by Congress in 1864, the NATIONAL BANK ACT. The law created the Office of the Comptroller of the Currency. Banks that registered with that office were allowed to carry the designation "national bank," and the comptroller also was given regulatory powers over them. Banks were also discouraged from operating in the securities markets. But in the absence of a central bank, the comptroller had only limited powers since banks that did not register with the office were not within its limited regulatory orbit. The act effectively created a two-tier banking system in the United States, with one group of banks at the state level and another at the federal level.

In the 1890s, banks played a substantial role in the general consolidation, or trust, movement, helping to merge companies and often encouraging their directors to sit on corporate boards. After the turn of the 20th century, the powerful New York banks became known as the "money trust," a name signifying that they controlled the reins of credit. They were investigated by the Pujo Committee in 1912 in an attempt to understand their effect upon the trusts and the creation of credit.

After the FEDERAL RESERVE was created in 1913, a new regulator was added, but the Fed had authority only to dictate reserve requirements and examine those banks that were registered with it. In the 1920s, the banks also began acquiring securities subsidiaries through their parent holding companies and played a major role in underwriting and selling bonds and (later) stocks, before the Crash of 1929. The period between 1921 and 1933 witnessed a large number of bank failures, with almost 15,000 banks failing or merging with others.

Bank activities were severely curtailed by the BANKING ACT OF 1933, and those with securities operations were forced to divest. The act defined the areas of finance that commercial banks were allowed to engage in. The act prohibited commercial banks from participating in corporate securities activities. The McFadden Act of 1927 had already prohibited banks from opening new branches across state lines, and it seemed that bank activities were now limited in terms of both activities and expansion. But some larger banks employed holding companies to their advantage by buying banks in other states, avoiding the restriction about opening new branches. One of the most aggressive was the BANK OF AMERICA, which organized as the Transamerica Corporation in order to expand in the western states and in New York City. After several challenges to this sort of expansion, Congress finally passed a new restrictive act limiting bank expansion across state lines.

During World War II, banks changed their habits to aid in the war effort as the Federal Reserve maintained a close control over interest rate levels. The Fed pegged the level of interest rates allowed in the marketplace and relaxed reserve requirements for banks that held Treasury securities as assets rather than loans. As a result, banks became major holders of Treasury securities and remained as such until the Korean War, when the interest rate peg was abolished, and banking returned to its peacetime business.

In 1956, the BANK HOLDING COMPANY ACT further defined the role of the Federal Reserve in regulating the activity of bank holding companies. Banks continued pressure on regulators to expand but now had to satisfy the Federal Reserve Board. Throughout the 1960s and 1970s, banks expanded into areas permitted by the Fed and also expanded substantially overseas.

High interest rates in the mid- and late 1970s had a negative effect as many savers withdrew their cash in favor of higher yields in money market mutual funds. Pressures caused by this phenomenon prompted Congress to pass the DEPOSITORY INSTITUTIONS DEREGULATION AND MON-ETARY CONTROL ACT, deregulating interest rates and expanding the power of the Federal Reserve. The perennial problem of who regulated the banks was closer to being solved since all banks now were subject to the Fed's reserve requirements, regardless of location or charter. Usury laws began to crumble in many states as well, as high interest rates were now tolerated by state legislators, who feared losing banks in their states if they did not loosen the decades-old restrictions. CITIBANK began opening credit card facilities in states that did not have usury ceilings, and the door swung open for New York and other major banking centers to roll back their laws.

In the 1980s, commercial banks were beset with loan problems. Many had made loans to developing countries in South America and Asia that had to be rescheduled or written off, leaving the banks with record losses. Many loans had been made at variable rates of interest that soared to record levels between 1981 and 1984. As a result, many banks were forced to increase their base capital, following an increase in capital requirements made by the Bank for International Settlements in 1988 in conjunction with the Fed and the Bank of England. Those American banks that could not meet the requirements were forced to merge or close their doors. As a result of the loan and capital problems, many banks began to seek new avenues of business in fee banking, the sort usually reserved for investment banks. Many commercial banks also purchased smaller savings and loans, hard hit by the junk bond scandal in the later 1980s, giving them a stronger foothold in the residential mortgage market.

In the 1990s, commercial banks began to expand their activities into investment banking under liberal interpretations of the holding company act made by the Federal Reserve. This included underwriting of corporate securities, forbidden since the Banking Act of 1933. However, full integration of banking, INVESTMENT BANKING, and insurance did not occur until Congress passed the FINANCIAL SERVICES MODERNIZATION ACT in late 1999. The law liberalized and expanded the list of permissible activities for a bank; as a result, the industry began to offer "universal" banking services under one roof for the first time.

When banks entered the RECESSION following the stock market drop of 2001, they were exposed to the financial markets and the loan markets for the first time since the early 1930s. Several large banks suffered notable losses on both their loan portfolios and in the securities markets, leading critics to suggest that re-regulation was needed to prevent further erosion of the financial system.

See also Chase Manhattan Bank; Morgan, John Pierpont.

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commercial paper A short-term debt instrument, maturing between 30 days and 270 days from original issue date. A liquid secondary market for it, along with other money market instruments, exists among banks and investment banks, which maintain prices in the secondary market. Commercial paper is issued by corporations with investment-grade credit ratings and represents the cheapest cost of funds attainable for companies in the short-term.

Commercial paper dates to the 19th century, when New York merchants began selling their short-term notes payable to intermediate dealers, who would buy them at a discount and resell them to another investor, usually a bank. When the note matured, the borrower paid back face value to the investor. The first money market dealer to buy these notes was Marcus Goldman, whose GOLDMAN SACHS & CO. became one of the largest dealers in the country after the Civil War. Until the Second World War, commercial paper was used by the FEDERAL RESERVE in its open market operations, along with Treasury bills, to sell or buy from recognized dealers in order to affect the amount of bank reserves in circulation.

During the 1950s and 1960s, the number of companies issuing commercial paper increased steadily, and it became the most popular instrument in the money market. Parallel with its development was the development of consumer credit, mainly through the use of CREDIT CARDS. Many of the finance companies offering credit card facilities to customers borrowed the money necessary to finance card operations through commercial paper and then purchased credit card receivables from merchants. The amount charged to customers was often substantially higher than the cost of borrowing.

Commercial paper can be sold directly into the market by issuing companies (directly placed), or it may be sold through an intermediary dealer (dealer placed). In the 1980s, a debate developed over whether banks that acted as dealers were in violation of the BANKING ACT OF 1933 by underwriting this short-term corporate paper in the market even though commercial paper was defined by the Securities and Exchange Commission as short-term corporate debt of less than 270 days to maturity and thus not a bond.

Today, the commercial paper market is the largest single source of short-term financing for corporations along with loans provided by commercial banks. It is the major source of shortterm financing for most large corporations with credit ratings high enough to access the market on a regular basis. It is also the main source of funds for credit card lending and many other forms of short-term loans, both for consumers and companies alike.

See also INVESTMENT BANKING.

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Commodity Futures Trading Commission (**CFTC**) The regulatory body overseeing the FUTURES MARKETS. Created by Congress in 1974, the commission is an independent agency whose fivemember body operates in a manner similar to that of the Securities and Exchange Commission (SEC) by regulating the activities on futures exchanges as well as overseeing operating procedures in the futures industry. Members of the commission are appointed by the president for five-year terms.

The futures markets have been under federal REGULATION since the 1930s. In 1922, Congress

passed the Grain Futures Act, putting the commodities exchanges under the authority of the Department of Agriculture. The law loosely regulated the trading of contracts but did little to curb trading practices on the exchanges. As a result, the Commodity Exchange Act was passed in 1936 regulating the exchanges themselves for the first time. The law was intended to be similar to the Securities Exchange Act passed in 1934 regulating stock exchanges.

Until the 1960s, the markets added contracts on new commodities in moderate fashion, but the late 1960s and early 1970s witnessed an explosion in the types of contracts and commodities available. The old regulatory legislation was designed to control only grain futures, so any new contracts had no effective regulation. Precious metals trading began in the late 1960s and was often marred by trading irregularities, since the contracts were not regulated. Inflation and the rapid internationalization of the financial markets in the late 1960s and early 1970s underlined the need for hedging instruments that investors could employ to offset risk. Contracts were added in interest rate futures, other financial futures, and a wider array of commodities as well as options on futures, a long-standing problem for the futures exchanges. These new products extended beyond the scope of the original regulation, and the CFTC was formed to cope with the expanding markets.

The CFTC was given additional powers, especially with over-the-counter derivatives futures, in the Commodities Futures Modernization Act passed in 1999. Areas of dispute with the SEC over futures on equities especially were made more flexible, and jurisdictional disputes over options were remedied. The jurisdiction of the CFTC itself needed to be clarified for fear that if the markets were not well-regulated and clear to participants, then business could move overseas and domestic investors would be susceptible to fraud in unregulated overseas markets.

See also CHICAGO BOARD OF TRADE.

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Community Reinvestment Act (CRA) A law passed by Congress in 1977 in response to perceived failings of banks in meeting the credit needs of the communities in which they operate, especially low- and moderate-income neighborhoods. The act is intended to encourage depository institutions to meet the credit needs of the communities within the framework of operating safe and sound financial institutions. It requires the federal supervisory agencies (the FEDERAL DEPOSIT INSURANCE CORPORATION [FDIC], the Office of the Comptroller of the Currency [OCC] and the Board of Governors of the Federal Reserve System [FRB]) to evaluate an institution's CRA performance.

The Riegle Community Development and Regulatory Improvement Act of 1994 (CDRIA) substantially amended the CRA statute to satisfy critics of the original CRA rating system and to provide some regulatory relief for small institutions. CRA performances are evaluated under one of four possible scenarios: (1) streamlined procedures for small institutions, (2) three-tiered test for large retail institutions, (3) limited-scope test for "special-purpose" institutions, and (4) strategic CRA plans. After the CRA performance of an institution is evaluated under these procedures, it is rated as "outstanding," "satisfactory," "needs to improve," or "substantial noncompliance." In recent years, more than 90 percent of institutions have received outstanding or satisfactory ratings.

The CRA provides incentives for institutions to serve the community credit needs, but the law does not grant the supervisory agencies enforcement authority. An institution's CRA rating can be taken into account whenever an institution requests to open or relocate, establish a bank HOLDING COMPANY, or engage in merger and acquisition activity. The agencies also must solicit public comment on, and publicly disclose, an institution's CRA performance.

The CRA was modified by the Gramm-Leach-Bliley FINANCIAL SERVICES MODERNIZATION ACT of 1999 (GLBA) by setting forth a graduated schedule of decreasing frequency of CRA examinations of certain small-sized banks (less than \$250 million in assets) commensurate with their record of meeting CRA "community credit needs." Generally, small institutions are evaluated every four years if their current CRA rating is satisfactory and every five years if their most recent rating is outstanding.

CRA's renewed focus on mortgage, small business, and small farm loans has meant that institutions must collect and annually report their small business and farm loan activity, as well as their community development loans. As with the Home Mortgage Disclosure Act (HMDA) data, the regulatory agencies prepare a report on each institution and make it and the aggregate lending data available to the public.

In response to charges that community groups use the CRA application comment process to coerce institutions into making financial and other commitments to their organizations, GLBA attempts to prevent abuses by requiring public disclosure of written CRA agreements between an insured depository institution or affiliate and another party, such as a community group or an individual. Community groups or individuals may face stiff penalties for willful and material noncompliance or for the diversion of funds or resources for personal gain.

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computer industry While the U.S. computer industry began as a direct result of large-scale Department of Defense spending on electronic digital computing research during and shortly after World War II, and the vision of a small number of engineers and entrepreneurs to commercialize this research, in large part it was facilitated and extended by technological and marketing capabilities built in the American office machine industry during the previous six decades. The U.S. office machine trade consisted of manufacturers of accounting machines, TYPE-WRITERS, cash registers, tabulators, and other devices used to record, store, process, and retrieve information. America's relative shortage of labor compared to European countries, coupled with America's embracement of labor-saving technology, resulted in the United States's strong international leadership in the production and use of OFFICE MACHINES from the late 19th century forward

In the 1880s, Herman Hollerith, an engineer who worked at the U.S. Patent Office, invented a punched-card tabulating machine, and in doing so gave birth to electromechanical information processing. A subsequent version of Hollerith's machine demonstrated major efficiencies after it won a competition to be used on the largest information processing task of its time-the 1890 U.S. Census. Its success on this application led Hollerith to form the Tabulating Machine Company in 1896, a firm that produced punched-card tabulation machines for U.S. and other censuses, various government agencies, and a small number of large corporations. In 1911, Hollerith sold this successful company, which after several MERGERS became the Computer-Tabulating-Recording Company (C-T-R). In 1924, C-T-R's management changed the firm's name to INTER-NATIONAL BUSINESS MACHINES (IBM) to reflect its broadening line of office machine products and its growing international installations (both sales and leases). IBM, the global leader in tabulating machines, along with other firms that had led in particular office machine segments since the late

19th century, such as Burroughs Adding Machine, Remington Typewriter, and National Cash Register (NCR), would all become significant contributors to the U.S. computer industry.

During World War II, the army's Ballistic Research Laboratory (BRL) was limited to using analog computers (such as Vannevar Bush's differential analyzer) and other mechanical calculating machines to aid human calculators in solving the thousands of equations necessary to produce ballistic firing tables. These machines and methods proved wholly inadequate with regard to speed and accuracy. John Mauchly and J. Presper Eckert, both researchers at the University of Pennsylvania Moore School of Electrical Engineering, proposed developing an electronic digital computer to meet the BRI's calculating needs. Based on their strong proposal and some fortuitous connections, the army provided a \$400,000 contract for a project that began in the early 1940s to build the Electronic Numerical Integrator and Computer (ENIAC)-the first fully operational digital computer. The machine, powered by 18,000 vacuum tubes, was not completed until early 1946.

Later that year, Eckert and Mauchly established the Electronic Control Company, soon renamed the Eckert-Mauchly Computer Corporation, to design and sell digital computers.



Man prepares a UNIVAC computer, 1959 (LIBRARY OF CONGRESS)

Almost simultaneously, engineers who had worked as cryptographers for the U.S. Navy during the war established Engineering Research Associates (ERA) for the same purpose. Over the next half decade both firms produced a small number of expensive mainframe computers for government departments and agencies and a few corporations. In the early 1950s Remington Rand (formerly Remington Typewriter) acquired the two pioneering computer firms and became the first of the office machine companies to enter into the U.S. computer industry. Burroughs and NCR soon followed by acquiring relatively small start-up computer firms during the mid-1950s.

IBM, as a result of its lease structure and steady revenue from punched cards, fared far better than other office machine firms during the Great Depression. At the end of World War II, IBM was by far the most profitable office machine maker in the world. The company specialized in what almost immediately became the key input-output technology (punched cards and tabulators) for computers, had an unparalleled sales and service organization, possessed a large and varied customer base, and during the late 1940s began to make substantial investments in electronics research. These factors placed it in a strong position to thrive in the computer industry during the succeeding decade. In the early 1950s, it won the primary computer contract for the Department of Defense's Semi-Automatic Air Ground Environment (SAGE) computer networked communication system, a project that was coordinated by engineers from MIT's Lincoln Laboratory. While Remington Rand was selling its million-dollar UNIVAC computer to a modest number of customers in the early 1950s, IBM was furthering its already strong capabilities in anticipation of producing computers that could sell or lease in large volume.

In the mid-1950s, IBM came out with several lower priced computers that leased for between \$3,000 and \$15,000 per month. In 1959, the company announced its 1401 computer, a machine that would achieve more than 10,000 installations during the 1960s and establish IBM's leadership in the computer industry. The IBM 1401, like a small number of other computers of its time, took advantage of transistor technology, which had been perfected in the decade following its invention by scientists at Bell Laboratories in 1947. Further innovations to transistor technology led to the integrated circuit (IC) during the first half of the 1960s. Behind the strength of the integrated circuit, domestic computer installations grew from 240 in 1955 to 11,700 in 1963. This growth would continue and represented a transition from the nearly exclusive scientific computing market of the early 1950s to the adoption of computers for many business purposes by the end of the decade and into the 1960s.

The IBM System/360 series, announced in 1964, was a watershed for the firm and the industry. It consisted of a series of compatible computers with varying processing powers and prices. This solidified IBM's industry leadership and led to its achieving a peak of around 70 percent of the domestic industry by 1970. A combination of leading office machine producers, a couple of late 1950s start-up firms, and two electronics giants represented IBM's primary competitors. These competitors developed some successful machines but provided only a modest challenge to IBM. IBM and its chief competitors (Burroughs, National Cash Register, Remington Rand/Sperry-Rand, Control Data, Digital Equipment Corporation, GENERAL ELECTRIC and RCA) were frequently referred to as "IBM and the Seven Dwarves" in the business press to emphasize the leader's dominance. The two electronics firms, General Electric and RCA, showed only a partial commitment to the computing business during the 1960s, lost money in this area, and divested from the field at the beginning of the 1970s.

As IBM solidified its dominance, a growing number of firms sought to imitate its computers, as RCA did with its Spectra-70 series. Two new computer firms, both formed in 1957, took a different path and initiated divergent new segments of the computer industry: minicomputing (Digital Equipment Corporation) and supercomputing (Control Data Corporation).

Some of Sperry-Rand's leading engineers and managers departed and formed Control Data Corporation (CDC) to build computers of unprecedented power to target the smaller but still substantial and growing scientific computing market. Though IBM continued to sell to scientific users, the firm chose not to enter the supercomputer business and to concentrate its resources on the business computing field.

CDC would dominate supercomputing in the 1960s but would be displaced from this area as its focus changed increasingly to computer peripherals and service businesses in the 1970s. Early in this decade, their star engineer, Seymour Cray, who had designed the advanced circuitry on the firm's supercomputers, would leave to form Cray Research. This company soon became the supercomputing leader. From the first supercomputer, the CDC 6600, to a wave of new machines by Cray Research in the 1970s and early 1980s, supercomputing expanded possibilities for modeling the Department of Defense's nuclear war scenarios, weather forecasting, and other areas requiring extensive processing power.

Kenneth Olsen and Harland Anderson, both MIT Lincoln Laboratory engineers who had worked at overseeing IBM's SAGE contract, formed the Digital Equipment Corporation (DEC). Olsen, DEC's longtime leader, recognized an opportunity to use advanced circuitry to make small computers of modest processing power for a significantly lower cost than mainframe computers. Along with Silicon Valley, which was emerging as a semiconductor center, Route 128 near Boston had also defined itself as a leading electronics development region. DEC and other minicomputer firms would add greatly to the reputation of the Boston area as a fundamental center for particular sectors of electronics and computing.

Early DEC computers sold for around \$100,000, but integrated circuits of the mid-1960s and DEC's innovative designs allowed the

firm to produce and sell its PDP-8 minicomputer for a mere \$18,000. The PDP-8 made computers affordable to many previously excluded organizations, selling more than 40,000 units during its product life. Its success led a number of firms to enter the minicomputing field, from established companies such as Hewlett Packard and IBM to new entities such as Data General (formed by DEC PDP-8 designer Edson de Castro in the late 1960s). During the 1970s, there were more than 100 producers of minicomputers, most of which were small firms or small divisions of larger companies. Minicomputing not only extended the use of computers in hospitals, smaller laboratories, and mid-size firms, it also created a class of users who identified with operating their own machines. The minicomputer, in terms of size, cost, power, and its user community, more nearly matched the personal computer of the late 1970s and early 1980s than it did mainframes of the past.

Computers are useless without the programming that allows them to do various types of calculations and data processing tasks. In the second half of the 1950s, Sperry-Rand (the outgrowth of Remington Rand's merger with Sperry Gyroscope in 1955), IBM, and other firms and organizations began developing programming languages, such as Fortran and Cobol. These tools helped with the arduous task of programming computers. Much programming in the first decade and a half of digital computers was done by software developers at mainframe computer manufacturers or by the sophisticated organizations purchasing or leasing these machines. Early in the next decade a number of programming or software service firms emerged to produce oneof-a-kind software and systems for clients' computers. A shortage of programmers emerged as the number of computer installations expanded. This shortage, along with bugs and cost overruns, led to a real but media-exaggerated "software crisis." Software products, or standardized systems and applications for many users, emerged in the second half of the 1960s to help address high programming costs and shortages of programmers. The software products industry gained great momentum when IBM unbundled (priced and sold separately from hardware) most software beginning in 1970. Unbundling facilitated the growth of software products firms such as Informatics, Applied Data Research, Cincom, and Cullinane—many of which were later acquired by Computer Associates or other contemporary software giants. IBM and other mainframe producers also developed and sold or licensed a large number of significant software products.

The semiconductor, which gave rise to minicomputing, became a fundamental industry that grew alongside the computer. Fairchild Semiconductor became a virtual training center for producing top engineers and executives of new semiconductor companies in Silicon Valley. Three former Fairchild engineers, Robert Noyce, Andrew Grove, and Gordon Moore initiated one such firm, Intel, in 1969. Two years later, Intel invented the microchip, or "a computer on a chip." The microchip, also called a microprocessor, established a further wave of advances in computer power, miniaturization, and cost-effectiveness. Much of the microchip's history has lent credence to Gordon Moore's simple equation, Moore's Law, which states that computer processing power doubles every 18 months relative to cost. Intel's microprocessor gave rise to the personal computer kits of the mid-1970s, the emergence of new personal computer manufacturing start-ups (such as Apple Computer) in the second half of the 1970s, and IBM's entrance into the field in 1981 with the IBM PC.

In 1980, IBM sought a software industry partner to help refine its Disk Operating System (DOS) for its soon to be released PC. The first company they called on, Digital Research, balked at the opportunity (apparently it was unwilling to sign a nondisclosure agreement), and IBM went with a 32-person outfit called Microsoft that was led by cofounders William (Bill) Gates and Paul Allen. Microsoft went on to produce MS-DOS for the PC and has been able to maintain a near-monopoly on IBM PC and PC-compatible operating systems ever since. Only recently has Microsoft faced competitive challenges from open-source systems such as Linux. IBM, while continuing to manufacture mainframes, minicomputers, and personal computers in the 1980s and 1990s, increasingly shifted its focus to software and services as revenue generators, and not just as tools to sell hardware.

Soon after IBM came out with the PC, firms such as Compaq and Hewlett Packard built compatible systems (or clones) that used Intel microprocessors and Microsoft operating systems (initially MS-DOS, and then MS Windows-a Microsoft operating system that mirrored certain graphic elements of Apple Computer's Macintosh operating system). As a result of these IBM clones, and the origin of these machines' processors and systems, the term Wintel (Windows and Intel) came into common usage. It signified both the powerful position of these two firms in the computer industry and the fact that IBM clone "manufacturers" were mere assemblers, marketers, and deliverers of commodity products (or "boxes").

Independent producers of software applications and recreational software (particularly computer games) tended to design products for the PC-platform first and the Apple platform second, if at all. This challenge was a major factor in Apple's personal computer market share dipping from double-digits, at the height of its early years, to lower single digits in the past 10 years. Recently, with the growth of Advanced Micro Devices and several other microprocessor competitors of Intel, Microsoft alone has been the focus of consumer and government scrutiny with regard to its domination of markets and its potential anticompetitive practices. This scrutiny came from Microsoft's dominance of operating systems, certain popular applications (MS Word for word processing and MS Excel for spreadsheets), INTERNET browsers (MS Explorer), and most importantly, its apparent efforts to link together these products to lock in customers and lock out competitors.

Like the mainframe and minicomputer, U.S. government funding would prove critical to cultivating the underlying technology for the advent of the personal computer and the networking that would help transform this machine into a ubiquitous communication technology. In response to cold war concerns over the Soviet Union's scientific and technological accomplishments of the late 1950s and early 1960s (particularly Sputnik in 1957), the U.S. Department of Defense (DoD) became all the more interested in advancing U.S. science and technology, including computing and computer networking. In 1962, the DoD initiated the Information Processing Techniques Office (IPTO) as part of its Defense Advanced Research Projects Agency (DARPA). In the following seven years the IPTO funded a Boston engineering firm, Bolt Beranek and Newman (BBN) and some key academicians to build a major computer network, the ARPANET, in order to allow scientists to communicate by computer as well as to provide a redundant computer communications network for defense purposes. The ARPANET became linked with other computer networks in the 1970s and early 1980s to form a network of networks known as the Internet.

In the early to mid-1990s, MIT scientist Tim Berners-Lee (in residence at CERN Laboratory in Switzerland) developed hypertext markup language (HTML). This provided a structure for sending graphics and text files and resulted in the World Wide Web. By early in the 21st century, the majority of Americans accessed the World Wide Web on a weekly if not daily basis. Network equipment demand expanded quickly, leading to rapid growth for CISCO Systems, the leading manufacturer of routers, devices that facilitate network traffic. Back in the 1960s and 1970s the IPTO had also funded significant graphics work. That, along with subsequent technological inventions and innovations at Xerox PARC and SRI, such as windows, icons,

pull-down menus, and the computer mouse, greatly advanced the possibilities for future computer graphics and the ease of use for personal computers and the World Wide Web. Soon after Berners-Lee's invention, several Internet browsers were developed to facilitate access to the growing information on the Internet. These included MOSAIC, Netscape's Navigator, and slightly later, Microsoft's Explorer. Microsoft made Explorer a standard feature on its Windows operating system, which led to the "net wars" with Netscape and the U.S. Department of Justice's antitrust suit against Microsoft for bundling products to eliminate competition. In 2001, Microsoft settled the federal suit and became subject to a consent decree but still faces litigation from other jurisdictions.

The World Wide Web has not only transformed the way in which many people communicate (e-mail instead of letters) and their leisure activities (interactive games and chat rooms), but has also brought about both real and perceived changes in how people engage in business. Many e-commerce firms began operations in the last few years of the 20th century, only to fall victim to the dot-com collapse that began in early 2000. The overvaluation of e-commerce firms had a precursor in the run-up of software services and products company stock during the late 1960s. Like this earlier high-technology stock market bubble and burst, a small number of industry leaders survived and thrived based on superior capabilities, first-mover advantages, established customer relationships, and a host of other factors. Today companies with dominant positions, such as E-bay in the electronic auctioning market, Google in commercial search engines, and Dell in personal computers (benefiting from its unparalleled supply management and service) have demonstrated that financial and inventory excesses of an industry do not hit world-class innovators and executors to the same degree as other firms. Part of this trend toward innovation and efficiency is achieving excellence in using global resources to best serve a global marketplace. Like the manufacturing sector of computer



Personal computers shown in a shopping center (GETTY IMAGES)

hardware, and many other manufacturing areas, a significant number of jobs have been sent overseas. In recent years, global outsourcing has become increasingly common with U.S.-based information technology (IT) firms in programming and IT services.

See also WATSON, THOMAS J.

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Jeffrey R. Yost

Conestoga wagon The Conestoga wagon, also called the "ship of inland commerce" and the "Dutch wagon," was a heavy horse-drawn vehicle that, prior to the extension of the RAILROADS across the Allegheny Mountains in the 1850s, became the primary method of transporting freight to the interior regions of the United States.

In the early 18th century, German and Swiss immigrants in the Conestoga Creek region of Lancaster County, Pennsylvania, developed the wagon, which was used to haul furs to Philadelphia. Following the Revolutionary War, farmers depended on Conestogas to transport produce to market, and manufacturers on the East Coast used the wagons to carry finished goods to frontier regions of the Ohio Valley west of the Allegheny Mountains. Conestoga wagons, usually drawn by six horses, could carry loads of up to six tons.

The floor of the wagon was lower in the middle than at the front and rear so that freight would be less likely to shift while traveling over rough terrain. The white covering, supported by eight bows and made of homespun hemp and later of canvas, was curved to conform to the wagon bed. At the front and back, the top of the covering extended farther than the bottom, thus offering protection from sun and rain. The wagon's wheels were especially broad in order to navigate the ruts and mud of primitive dirt roads. The Conestoga wagon anticipated the development of the prairie schooner, so called because from a distance this white canvas-covered wagon resembled a sailing ship. Compared to the Conestoga, the schooner was lighter, simpler, and less expensive and had lower sides and a flat floor. It usually required no more than four horses, mules, or oxen. The wagon had an oval opening at each end to allow for ventilation and to let light into the interior. The prairie schooner was a major mode of transportation for pioneers traveling to Oregon, Utah, and California. It is estimated that during the 1849 California gold rush more than 12,000 schooners headed west.

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Glenn H. Utter

conglomerates Large, diversified holding companies that buy operating companies to form corporations with a wide array of interests. As a form of industrial organization, conglomerates diversify their activities to make themselves less susceptible to changes in the business cycle. This type of corporation dates from the end of World

War II, when industrialists began buying companies and assembling them under the umbrella of a HOLDING COMPANY.

Often conglomerates are described as a form of merger, along with horizontal and vertical MERG-ERS. While horizontal mergers join two companies in similar businesses and vertical mergers join two in different parts of the supply or productive chain, conglomerates are described as bringing dissimilar businesses together. One of the by-products of this merging is that conglomerates often fall outside the traditional lines of ANTITRUST law. While horizontal and vertical mergers fall under the Sherman Antitrust Act and the CLAYTON ACT, conglomerate mergers tend to remain relatively free of antitrust action unless a conglomerate acquires more than one company in a highly concentrated business, behaving like a 19th-century trust.

After World War II, conglomerates began to appear and contributed to the merger and acquisition trend on Wall Street in the 1950s and 1960s. Companies such as International Telephone & Telegraph, Ling-Temco-Vaught, Litton Industries, and United Technologies all actively pursued conglomerate strategies. In 1950, Congress passed the Celler-Kefauver Act, which was aimed at the conglomerates. The law blocked a company from purchasing the assets of another if the combination created threatened a monopoly. But if it did not, as was the case of most conglomerates, then the law was powerless to prevent conglomerate formation.

As a form of merger between two companies with no apparent common interests or common markets, conglomerates seemed immune to antitrust laws. One criticism of conglomerates in the past was that although there were no apparent common interests between many of the companies assembled by a holding company, there were often illegal arrangements between them that violated antitrust laws. For instance, the parent company could require that subsidiaries do business exclusively with each other, eroding competition in the marketplace. In a well-diversified conglomerate, that may have been possible, but it was also difficult to prove by antitrust regulators. The conglomerates became the target of antitrust efforts by the Nixon administration in the late 1960s after fears that they were poised to begin buying established older companies. Their growth was slowed by a stock market downturn in the early 1970s. In the 1980s, their diversification principles were adopted by other multinational companies, and today the distinction between conglomerates, diversified for their own sake, and other well-diversified companies is less pronounced than in the past. While many of the older conglomerates established in the 1960s began to fade from view, others such as GENERAL ELECTRIC were highly successful, and their stocks remained as investor favorites.

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consumer movement A movement that began developing in the early 20th century, dedicated to protecting the rights of consumers against big business. The study of consumers became more important after the 1920s, when it became clear that 67 percent of the American economy was driven by consumption. Since that time, the study of consumer behavior and attitudes and their effect on the economy has evolved into a systematic and rigorous discipline, and many laws have been written to protect what are considered fundamental consumer rights.

The consumer movement began during the Progressive Era, tracing its intellectual origins to the writings of the MUCKRAKERS. At the time, the emphasis was on the nature of big business and the apparent disregard that it displayed toward ordinary citizens. The writings of Ida Tarbell, Louis BRANDEIS, Frank Norris, Gustavus Myers, and others cut across different literary genres, displaying the nature of various businesses ranging from Standard Oil to the meatpacking industry and illustrating the helplessness of the individual in the face of corporate power. One of the first organizations to emphasize the link between consumers and workers was Florence Kelley's National Consumers' League, founded in 1899. The social writings of the Progressives also helped the labor movement establish better working conditions, which were organizing during the same period.

After World War I, the movement took a back seat to the bull market of the 1920s. After the 1929 crash, it was resurrected in the securities and banking laws of the NEW DEAL, which sought to offer protection to bank depositors and investors. The clear lack of social institutions capable of offering basic services during the early years of the Great Depression was the impetus behind many New Deal laws passed during the first administration of Franklin D. Roosevelt. The purpose of the National Industrial Recovery Act of 1933 was to help stimulate economic activity by forging links between labor and management, taking some of the impetus out of the labor and consumer movements. The act was declared unconstitutional in 1935. Throughout this period, the spirit of the consumer movement was closely related to the ANTITRUST movement. The ROBINSON-PATMAN ACT was passed in 1937 to protect small storekeepers and consumers from the corporate power of the new retail CHAIN STORES being created nationwide, although the law proved relatively ineffective. During the Depression and World War II the movement was mostly quiet, with most political and economic forces galvanized to the recovery and war efforts.

In 1936, the Consumers Union was founded. The private organization began testing consumer products for quality and safety and published the magazine *Consumer Reports*. The magazine was dedicated to protecting the consumer from deceit and low quality; the slogan "let the buyer beware" was in vogue at the time and underscored the importance of intelligent consumer behavior. The movement picked up considerable emphasis with the publication of Ralph NADER's *Unsafe at Any Speed* in 1965, an expose of the safety faults of the Chevrolet Corvair. Nader later successfully sued GENERAL MOTORS for invasion of privacy after the company investigated him because of the book. He later founded several consumer groups. Following in his footsteps, several consumer organizations were established, including the Consumer Federation of America (1968) and the Consumer Product Safety Commission (1972).

One manufacturing process that caused serious problems stimulated the consumer movement in the 1950s and 1960s. Planned obsolescence became an operational manufacturing concept, designed to stimulate the demand for manufactured goods. It began with the marketing of automobiles in the 1920s. Alfred SLOAN introduced the practice at General Motors. The concept was later adopted by many manufacturers, who used it as a marketing tool to convey the impression that their new products were different, and better, than previous models. Changing models frequently also placed considerable pressure on smaller competitors to convey the same message to their customers and could often be extremely expensive for them.

The practice came under considerable scrutiny when Vance Packard exposed the concept in his book *The Waste Makers* in 1960. In it, he described how manufacturers purposely designed many products to deteriorate prematurely so that customers would replace them. Many industries, including the automobile industry, changed models every year, mostly in design rather than substantive improvements, requiring a great deal of capital investment by the manufacturers. Smaller manufacturers, unable to raise funds for design improvements, were often faced with declining market share and eventual BANKRUPTCY because they were not able to compete.

Planned obsolescence also became an issue in some antitrust actions for many of the same reasons. Were manufacturers conspiring to change models, forcing smaller competitors out of business, or were they simply introducing periodic changes in their products to stimulate sales when the new product was essentially no better than its predecessor?

The consumer movement became very successful and helped change the old slogan "let the buyer beware" to "let the seller beware." The state and federal laws that were passed during the 1970s also helped give rise to the use of the class action lawsuit as a weapon against large companies producing inferior or dangerous products.

See also Better Business Bureaus; National Recovery Administration.

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Cooke, Jay (1821–1905) *financier* Born in Sandusky, Ohio, Cooke's father was a lawyer who also sat in Congress. After finishing school, Jay took a job in St. Louis, but his employer was ruined in the Panic of 1837. He moved to Philadelphia. Two years later, he went to work for the banking firm of E. W. Clarke & Co. (later, CLARK DODGE & Co.) in Philadelphia while still in his teens.

After the Panic of 1857, he withdrew from the firm and then in 1861 founded his own firm, Jay Cooke & Co., as the Civil War was beginning. His first notable deal came when he raised an issue of war bonds for Pennsylvania, which needed the money to defend its southern border against possible attack from the Confederacy. Further success soon followed. Cooke was introduced to Secretary of the Treasury Salmon Chase by his brother, who was also a partner in the new firm. He undertook to sell several large issues of war bonds. The best known were dubbed the 5–20s, allowing the Treasury to issue GREENBACKS during the war.

Cooke employed novel methods of selling the war bonds. Rather than sell them to other banking firms who would then sell them overseas, Cooke employed a vast network of salesmen and sales offices around the country, which distributed the bonds to retail buyers. They were sold in small denominations so that the average citizen could buy them. Subsequently, he also sold additional issues and was responsible for ensuring the Union's success through his successful fund raising. He sold more than \$500 million of the 5–20s alone as fiscal agent for the U.S. Treasury. He sold bonds to more than 600,000 individual investors while working as the Treasury's agent.

After the war, Cooke led the refunding of the 5–20s after they were eligible to be redeemed (after five years). In order to do so, he arranged the first modern underwriters' syndicate, consisting of banks that all subscribed to a portion of the deal. By that time, however, his attentions had turned to other pursuits.

In the late 1860s, Cooke's firm began to engage in railroad financing on a large scale. An issue of bonds sold on behalf of the Pennsylvania Railroad was the first to use a syndicate of other bankers to distribute the bonds to investors and became the first underwritten securities issue in the United States. Cooke also became interested in railroad operations, especially with the Northern Pacific Railroad. His firm became a major shareholder in the unfinished railroad, which was planned to run from the Great Lakes to the Pacific Northwest. But he had difficulty finding financing for the project because investors recognized that his costs were among the highest in the industry. When the Panic of 1873 developed, his railroad problems made investors uneasy, and his bank suffered a liquidity crisis, effectively putting an end to his career as a financier and railroad builder. His firm was liquidated in 1873, and Cooke retired to a quiet life.

Cooke's firm was resurrected by his son-inlaw, Charles D. Barney, and resumed operations as Charles D. Barney & Co. The firm eventually became Smith Barney & Co. and today is a part of Citigroup. Cooke is best remembered as the major financier of the Union during the Civil War, while his bond distribution techniques became standard practice in financing long after he retired from INVESTMENT BANKING.

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Cooper, Peter (1791–1883) businessman, inventor, and manufacturer Cooper was born in New York City to a family that had resided in the area since the mid-17th century. He had little formal education and went to work at an early age with his father making hats. He then tried his hand at various other endeavors such as brewing and brick making before turning to the cloth business. After opening a shop for making cloth and prospering during the War of 1812, he turned his attention to furniture making and then the grocery business. Using his earnings, he invested in a glass manufacturing business before finally opening the Canton Iron Works in Baltimore in 1828. But it was his experience with the Baltimore & Ohio Railway that was to make him his fortune and fame.

The railroad crossed his property, and Cooper became interested in steam locomotion. As a result of the proximity and his interests in steam, Cooper designed the first steam locomotive built in the United States for the Baltimore & Ohio, nicknamed the "Tom Thumb." Another similar engine was called the "Teakettle." The small engine proved to be only a prototype but earned him a reputation nevertheless. He then sold his Baltimore operations for several times what he paid for them and opened iron mills in New York and New Jersey.

In 1856, the Bessemer process was first attempted in the United States at his plant in Trenton, New Jersey. Other foundries followed in New Jersey and Pennsylvania. He also became involved with Cyrus Field in laying the first transatlantic cable and became president of the New York, Newfoundland & London Telegraph Co. Later, he became president of the North American Telegraph Co., which controlled more than half the telegraph lines in the country.

Cooper was also an inventor who invented washing machines and ferry boats that were propelled by compressed air. He was active politically and supported emancipation. He served as an alderman in New York City and advocated full-time, paid fire and police departments for the city, as well as public schools. In New York, he is best remembered for establishing Cooper Union, a well-known college devoted to engineering and science, offering free tuition to successful applicants.

He was also the presidential candidate of the Greenback Party after the Civil War in 1876 but received less than 1 percent of the votes cast. He died in New York City in 1883. Only one of his six children, Edward, survived until adulthood. Edward was a partner with his father in some business ventures and also active politically in New York City.

See also FIELD, CYRUS W.; RAILROADS.

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corporation A form of business organization in which the capital of the firm is supplied by shareholders. As owners of the company, shareholders are liable only for the amount of their investment. Unlike partnerships, shareholders have no further risk or obligation beyond the percentage that their investment represents of the firm's total equity. The proportion that a shareholding represents in the ownership of a corporation is determined by dividing the number of shares owned by the total amount of outstanding stock in the company.

Before corporations came into common use, partnerships were the traditional form of business organization. A partnership is a form of company ownership whereby the equity of a firm is privately held by two or more individuals. Each individual shares in the profits or losses of the partnership equally unless some other arrangement has been made limiting the share of a partner. In that case, an individual may be a limited partner rather than full partner. Partners also share any liabilities the partnership may incur in the course of business. Each partner may act as agent for others. As a result, partners bear the full risk of the business.

Partnerships were the first form of business organization beyond the sole proprietorship. Traditionally, new partners cannot be admitted to a partnership unless the partners agree. Admitting new partners is the method used to enlarge the financial base of the partnership or gain new expertise. But the form has had its drawbacks. Any capital that the business accumulates as a result of its activities is shared equally and, as a result, may be transient. When a partner retires or dies, he or she is entitled to withdraw capital. As a result, the equity of the organization diminishes unless a new source can be found to replace it.

As the economy grew larger in the 19th and early 20th centuries, many firms decided to incorporate rather than continue as partnerships. By doing so, they had access to more capital and also limited the shareholders' liability in the firm to the amount of their equity holding. Regulations from the state and federal level also made partnerships somewhat dated in some industries, since capital requirements for banks and securities firms (for example) were raised, and firms were required to have access to capital markets in order to raise fresh funds. Partnerships generally are too small to be able to access funds from the markets and traditionally rely upon new investment from newly admitted partners or retained earnings from continuing operations.

The first corporations traced their history to the mercantilist trading companies established in Britain and Holland in the 17th and 18th centuries. Incorporating on a smaller business scale occurred later in the 18th century. Firms began incorporating in the United States after independence, but the process was slow. At the end of the 18th century, some banks and insurance companies began selling stock in order to expand their operations. One of the early stock companies was the government-chartered BANK OF THE UNITED STATES. The movement continued into the 1830s, and the early canal companies and RAIL-ROADS were incorporated in order to raise capital. As the country grew, raising capital became a primary concern because many of the early industries, such as the railroads, were capital intensive and required funds beyond the financial capacity of partnerships or sole proprietorships.

The trend toward incorporation was aided by developments in the stock exchanges. Many exchanges originally were local markets, located in the major eastern cities. In order to list a company on an exchange, thus helping to market its name, incorporation was necessary, so the process went hand-in-hand with stock exchange trading. As more investor money found its way to the exchanges, more also became available to bring new companies public.

After the Civil War, business entered the phase of MANAGERIAL CAPITALISM, and the modern corporation, run by a professional managerial class, was born. Companies could now be ensured a viable succession that did not depend upon the founder or the founder's family to run the business. At the turn of the 20th century, the U.S. STEEL CORP. was formed by J. P. Morgan in 1901. It was the first company to have more than a billion dollars of assets on its balance sheet and was the most widely held company of the day. Many more giant companies followed in its wake, including AT&T and GENERAL ELECTRIC,

became widely held, and remained so for decades.

Business expansion was rapid after the Civil War, and many new companies were incorporated. An obstacle to the largest companies was the antitrust movement that emerged as business consolidation increased after 1870. Companies purchasing others were organized into trusts and became the predecessors of the modern HOLDING COMPANY. Often, the stock in these new forms of organization was held by relatively few shareholders. After the consolidation of many oil producers into the Standard Oil Company, the trusts were required to find states where local laws were friendly to companies that did much of their business out-of-state. As a result, many companies were incorporated in Delaware and New Jersey.

During the 1920s, a record number of corporations emerged, many in states of convenience. The post-World War I period witnessed the greatest growth in corporations registered since the 1880s and 1890s, and the trend lasted until the stock market crash of 1929 and the Great Depression. Studies subsequently appeared examining the ownership of many corporations, including the demographics surrounding their shareholders, but the number of incorporated companies continued to grow. Listings on the stock exchanges increased in the post-World War II period, along with a record number of MERGERS that continued to reduce the number of corporations at the same time that many new ones were being registered.

Business corporations are the most common types of corporation, but other types do exist, including single-person corporations, government-owned corporations, nonprofit corporations, and municipal corporations. The major advantage that corporations, especially business corporations, have over partnerships or sole proprietorships is that they are potentially able to raise significant amounts of capital. In addition to selling stock, they may also borrow bonds and COMMERCIAL PAPER and sell preferred stock. In the 1980s and 1990s, variations on the single stock company emerged, with many corporations establishing subsidiaries that stood alone and had their own stock structures, with shareholder profits depending on the revenue of the subsidiary rather than the parent company, as had been the case in the past. As business risks increased over the years, the number of incorporations increased in order to shield principal owners from risk while at the same time increasing the total number of shares outstanding.

See also Antitrust; BANKRUPTCY; MORGAN, JOHN PIERPONT; MULTINATIONAL CORPORATION.

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cotton industry Cotton has played an important role in the growth and development of U.S. agriculture, industry, and trade almost from the birth of the nation. The invention of the cotton gin (which reduced the time needed to remove cottonseed from the cotton fiber) by Eli Whitney in 1793 set off an almost continuous increase in production that did not cease until the 1930s. From 10,000 bales produced in 1793, cotton production expanded to almost 4 million bales in 1860, the largest commercial crop in the South and the mainstay of its entire economy and of SLAVERY.

The slave plantations had been managed centrally. Although following the Civil War farmers who owned small amounts of land produced some cotton, most of the crop would again be grown by large-scale landlords who now organized tenant plantations, renting parcels of land to families who worked with varying degrees of supervision. Until the 1940s, cotton dominated life from the Carolinas through Texas, an area referred to as the "Cotton Belt," at the center of which were cotton tenant plantations.

Since World War I, wide year-to-year fluctuations but no discernible trend had occurred in total U.S. cotton production due to governmental programs and yield variability. Only following World War II did the tractor and mechanical cotton harvester sweep away the 19th-century production methods of lots of labor, a mule, and a plow. U.S. farmers now produce the same quantity of cotton with about one-third less land than in the 1920s. Rising yields have resulted from the rapid substitution of new and improved production practices, industrial inputs (e.g., pesticides, varieties, and fertilizers), and capital (i.e., mechanization and irrigation) for land and labor. Accordingly, cotton production has shifted to land well suited to mechanization and from production under rainfall conditions to irrigation. These shifts have been both within and between major producing areas in the Southeast and the newer areas in the West. Thus, cotton farmers are now important producers from California to the Carolinas but comprise a broken, instead of continuous. Cotton Belt.

Millions of cotton farmers and workers, primarily African Americans, left the South during the post–World War II years, settling primarily in northern and western cities. Although many of them were displaced by machines and chemicals, most abandoned the cotton fields for what they hoped would be a life of greater freedom and opportunity.

See also WHITNEY, ELI.

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crashes Precipitous stock market price drops. There is no precise definition of the term, although the most serious crashes of the 19th and early 20th centuries caused serious collateral damage in the banking system as well as in the STOCK MARKETS.

In the 19th century, crashes were referred to as "panics." Before much was known about the interrelationship of different sectors of the economy, panic implied that investors lost confidence in the market and began to sell at the same time, causing serious deterioration in stock prices. Panics occurred in 1837, 1857, 1869, 1873, and 1893, as well as in 1907. When the market fell in October 1929, the term crash became widely used. In all of the panics prior to 1929, dozens of banks were forced to close their doors, especially when the United States was still on a gold standard. The U.S. banking system was seriously affected after the 1929 crash, and many savers withdrew their funds from banks, fearful that banks would close, leaving them penniless. The most serious banking collapse after the crash came in 1930 when the BANK OF UNITED STATES was forced to close its doors.

In the post–World War II era, the term *crash* has been used more liberally, connoting any serious price drop on the stock exchange in which recovery was not imminent. But a crash is materially different from a bear market, in which prices fall and stay depressed for a period of time before recovering. In the past, a crash was acknowledged to have occurred when a market's precipitous drop had serious effects for the economy rather than simply being a price correction from inflated stock values. Since the development of the safety net of banking and securities laws during the

1930s, crashes have not been so unexpected or dramatic as in the pre-1929 period, although they have occurred in one form or other in 1987 and in the post–Internet bubble period after 2000.

See also NEW YORK STOCK EXCHANGE.

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credit cards Plastic cards that pay for financial transactions by extending credit to the user when the purchase or transaction is complete. The company issuing the credit card then collects the balance due from the customer upon demand or over time by extending revolving credit, for which a rate of interest is charged.

The general idea for credit cards originated in the 19th century as a vision of a utopian future society. In *Looking Backward*, 2000–1887, published in 1888, Edward Bellamy accurately foresaw the introduction of credit cards in the 20th century when he predicted that many transactions would be cashless, using a form of identification card. The actual mechanism by which payments would be collected was a more difficult issue and would have to await developments in computer technology.

The first credit card was developed by Diners Club after the Second World War, and it required the balance to be paid in full when due. In the mid-1960s, a new card was developed by the BANK OF AMERICA—the Visa card—and it enabled the customer, for the first time, to pay outstanding balances over time. It was soon followed by MasterCard, another franchise operation that sold its name and facilities to banks and finance companies that used a card with its generic logo. Bank of America divested itself of the card business several years after introduc-



Montage of credit card images, 1960 (LIBRARY OF CONGRESS)

tion, and the operation became franchised, with the card being offered by many banks that paid the licensor a fee. By the late 1960s, credit cards began revolutionizing the way in which payments were made for purchases, replacing cash and checks in many instances. The use of cards grew exponentially over the next four decades and by 2000 represented the major form of consumer debt outstanding.

The growth of credit cards was made possible by the rapid growth of the COMMERCIAL PAPER market. Bank holding companies and finance companies were able to borrow for short terms in the market and use the proceeds to buy receivables from merchants at a small discount from the customer's purchase price. The growth in the commercial paper market paralleled the growth of credit cards, allowing nonbanks to offer the services as well. Today credit cards are offered by banks and financial companies having access to the commercial paper market as a source of low-cost funding.

The outstanding amount of credit card debt has become a closely watched statistic in order to

determine the condition of consumers in general, since two-thirds of the U.S. economy is generated by consumer spending.

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credit-rating agencies Ratings of the creditworthiness of business borrowers were provided historically in the United States by two types of firms: credit-reporting agencies and credit-rating agencies. Although they performed broadly similar functions, they provided different services and are discussed separately. Early credit-reporting agencies provided information that influenced the type and amount of trade credit offered by wholesalers and manufacturers to small retailers. Creditrating agencies, on the other hand, provide standardized ratings of large borrowers who issue bonds and other marketed debt instruments.

When the Mercantile Agency was founded in New York City in 1841 by Lewis Tappan, it offered a new service to American businessmen. Before then, wholesalers, jobbers, and others seeking information about the creditworthiness of potential borrowers occasionally hired agents or sought assistance from distant correspondents who may have known something about the potential borrower's business and personal habits. The Mercantile Agency was the first organized effort to systematically collect and collate information about thousands of scattered small businesses and provide that information to lenders in useful form. The Mercantile Agency's efforts were novel in the mid-19th century but became a mainstay of modern business practice by the beginning of the 20th century. Despite some early legal and political concerns, the firm provided a vital economic function and became a widely accepted, nearly indispensable, enterprise. In time the Mercantile Agency faced a number of competitors-some such as Bradstreet's represented a real competitive threat; most others did not and quickly closed.

It is generally believed that the formation of the Mercantile Agency in 1841 was a consequence of a realization on the part of many wholesalers and jobbers that the existing system was woefully inadequate. Relying on informal reports and recommendations from correspondents, wholesalers suffered significant losses as small retailers went bankrupt by the thousands during the economic downturn of the late 1830s and early 1840s. Such rapid change in the financial condition of so many businesses impressed upon merchants, especially Tappan, the need for more accurate and time information.

Tappan collected information on merchants and retailers in New York and elsewhere from reports provided by unpaid correspondents mostly local attorneys—who ostensibly had some insights into the character and business practices of neighbors. After receiving a solicited report on

the personal and business habits of merchants, clerks at the agency recorded the information in longhand in large ledgers. Subscribers to the agency's services, considering whether to offer a small-town retailer goods on credit, could then receive the agency's most recent report on the retailer by calling the office, where a clerk would read the report to the subscriber. The agency generated revenue by charging subscribers fees commensurate with the scale of the subscriber's business on the assumption that larger enterprises would make more use of the service than smaller ones. Correspondents provided reports without charge because Tappan encouraged subscribers to use his correspondents as collection agents when borrowers fell into arrears.

Although Tappan may have had larger aspirations, under his leadership the Mercantile Agency principally served New York City merchants despite agreements and copartnerships with comparable firms in other cities. His partner and successor, Benjamin Douglass (1849-58), envisioned a more centralized firm providing services on a national scale. He expanded the group of correspondents to include banks, insurance companies, manufacturers, and commission merchants. Douglass also centralized direction and made branches part of the New York operation rather than semiautonomous entities. Under Douglass, the firm expanded coverage into the southern and western United States, provided some collection and direct-mail advertising services, and introduced a rating system provided in published form instead of descriptive reports available for inspection.

The last innovation was forced on the Mercantile Agency by the Bradstreet Agency, founded in 1849 by John M. Bradstreet, who in 1851 was the first to publish standardized firm ratings. Douglass and his successor, Robert G. Dun (1858–1900), initially resisted publishing the agency's ratings, but competition by Bradstreet's forced its hand. Dun published his first *Reference Book* in 1859, a practice continued long afterward. Published volumes of both firms organized rated businesses by city or town, name of businessman, type of business, and reported two code letters or numbers with one signifying the rated firm's invested capital—the other its general creditworthiness. Dun's earliest books rated about 20,000 businesses. By 1880, his firm rated about 800,000 and by 1900 about 1.3 million.

After 1875, credit-reporting firms matured. Routines and procedures were formalized, flow charts detailing information flows were developed, accounting practices were standardized, control was more fully centralized, pricing policies were rationalized, and new technologies were utilized. Two important innovations that significantly increased the scope and efficiency of credit-reporting agencies were the telegraph and the typewriter. The telegraph lowered the cost of collecting and disseminating information; the typewriter in collating and distributing it among branch offices. Typewriters and carbon paper quickly replaced hundreds of clerks hand-copying information longhand into bound ledgers.

Relatively little is known about the operation of either major credit-reporting firm after 1900, as no detailed history has yet emerged. Dun & Company grew increasingly international following Robert G. Dun's death, opening 77 overseas offices. Dun's firm merged with Bradstreet's in 1933 to form Dun & Bradstreet. In 1962, it acquired Moody's Investors Service and subsequently acquired a number of other firms. In 2000, Moody's Investors Service was spun off, and the firm changed its name to D&B in 2001.

Modern credit-rating agencies play an important role in modern financial markets. Credit-rating agencies assess the default risks of corporate and governmental borrowers and issuers of other fixed-income securities, such as commercial paper, preferred stocks, bank certificates of deposit, mortgage-backed securities, and several other financial derivatives. Agencies sift through and make sense of enormous amounts of quantitative and qualitative information about borrowers to provide lenders and investors accurate and timely assessments of the risks involved in purchasing a borrower's securities. Like the previously discussed credit-reporting agencies that developed alphanumeric codes to summarize a borrower's likely ability to repay its obligations, credit-rating agencies developed codes to distinguish between investment-grade and lesser-grade issues.

There are currently four full-service creditrating agencies in the United States, in addition to several agencies that provide credit ratings for specific industries, such as banks and insurance companies. The earliest full-service rating agency was Moody's Investors Service, established by John Moody in 1909. Poors Publishing Company opened in 1916; Standard Statistics Company and Fitch Investors Service in 1922. Duff & Phelps Credit Rating Agency opened in 1932 but focused on public utilities until 1982, when it expanded its ratings and became a full-service rating agency. McCarthy, Crisanti, and Maffei opened in 1975 but was acquired by Duff & Phelps in 1991. Two prominent specialized rating agencies are Thomson BankWatch, founded in 1974, which rates only financial firms, and A. M. Best, which rates the claims-paying abilities of insurance companies. Relatively little is known about the internal operations of these firms because no large-scale history has been written about any of them. Nevertheless, it is possible to piece together a basic chronology of the industry.

John Moody & Company published Moody's Manual of Industrial and Miscellaneous Securities in 1900. Moody's manual provided information about stocks and bonds and became quite popular. The company failed during the financial panic of 1907, but Moody formed a new business in 1909 with a new objective. Instead of collecting and publishing businesses' accounting statistics and managerial data, his new company published a manual that analyzed each firm's relative investment quality. He borrowed the alphanumeric rating system then in use by credit-reporting firms and became the first to offer systematic ratings. Moody' 1909 manual concentrated on railroads, but by 1913, he included industrials and utilities. In 1914, he began including ratings of municipal bonds. By 1924, Moody's rated nearly every outstanding corporate and municipal bond. In the 1970s, it started rating commercial paper and bank certificates of deposit. Moody's published its first ratings of international bonds in 1981 and ratings of over-thecounter securities in 1986. The Financial Information Services division was acquired by Mergent, Inc. in 1999, which currently delivers financial services to Internet subscribers.

Although Moody's provided the first formal credit ratings of railroads, Henry Varnum Poor was among the first to collect and publish information about the financial condition and managerial structure of railroads. H. V. and H. W. Poor's was founded in 1867 and by 1868 was publishing, to wide acclaim, the Manual of Railroads in the United States. This and subsequent manuals provided four types of information on each U.S. railroad: line of road, rolling stock, operations and general balances, and officers and directors. In providing this information, the Poor's provided bankers, lenders, and investors with a portrait of each railroad's current operations and financial condition. The Poor's company faced some early competition but had the field to itself until Moody's published its first manual in 1909. Poor's Publishing Company changed from simple reporting to rating in 1916. Standard Statistics Company entered in 1922, offering ratings of corporate bonds. The firms merged to form Standard & Poor's in 1941, which was itself acquired by the publisher McGraw-Hill Companies, Inc. in 1966.

Fitch Ratings was founded by John K. Fitch in 1913 and, like Poor's, initially published financial statistics in such volumes as the *Fitch Bond Book* and the *Fitch Stock and Bond Manual*. Between 1922 and 1924, Fitch moved into credit rating and is sometimes credited with having developed the now familiar "AAA" to "D" ratings.

Four notable factors led to the establishment and success of credit-rating agencies. The first was the growing use of the corporate form of organization and the issuance of bonded debt by railroads, public utilities, manufacturing firms, as well as state and local governments. Second, growing wealth among the middle class increased the demand for information about the riskiness of different investments. Third, existing investment banks came under fire for conflicts of interest and became less reputable certifiers of bond quality. And fourth, the First World War and the mass marketing of government bonds introduced middle America to war bonds, which increased interest in and the demand for public and private debt. With this massive growth in both the supply and demand for bonds, investors needed some way to differentiate between alternative investments by risk and return. Rating agencies provided this sorting mechanism.

Credit-rating agencies historically provided ratings of issuers without charge and generated revenues by selling publications reporting the ratings. Because the materials were easily copied, however, potential revenues were lost. An opening for changing the revenue source presented itself following the default of the Penn Central Railroad in 1970. Penn Central defaulted on its outstanding commercial paper, and concerned investors refused to roll over their holdings of other firm's commercial paper, forcing many others into default. To assure nervous investors, issuers of commercial paper sought out and paid for objective ratings of their commercial paper issues. This new practice quickly took hold for other securities and is now standard practice in the industry.

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D

Dawes, Charles G. (1865–1951) *financier and politician* Born in Ohio, Dawes's family traced its origins to the *Mayflower*. After graduating from Marietta College and studying law, he moved to Lincoln, Nebraska, where he engaged in several successful businesses, including real estate, meat packing, and banking. It was only after he and his brothers acquired extensive holdings in two utility companies that he began to amass a sizable fortune. The brothers would eventually control 28 companies in 10 states. Then in 1902, Charles turned his attention to banking, founding the Central Trust Co. of Illinois.

He entered politics about the same time. After working for William McKinley's presidential campaign, he was named comptroller of the currency in 1898. He enlisted in the army as a major in 1917 and rose to brigadier general within two years. He served on General John Pershing's staff and was in charge of supply procurement and disbursement for the American Expeditionary Force. Dawes also became one of the few Republicans to support the League of Nations. The nickname "Hell and Maria" for Dawes began to be used after he appeared at a congressional hearing investigating budgetary waste during the war. When asked whether he paid excessive prices for mules, he replied, "Hell, Maria, I would have paid horse prices for sheep if the sheep could have pulled artillery to the front."

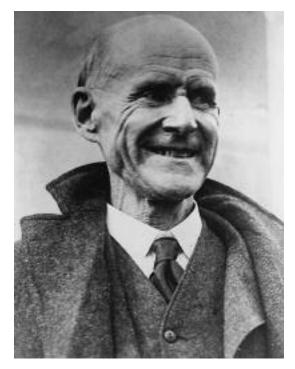
He was appointed the first director of the budget in 1920 and proceeded to introduce efficiency measures into government accounting, many for the first time. The League of Nations invited him to write a report on German war reparations in 1923; the Dawes Report was published in 1924, suggesting reparations be made on a sliding scale. The report was so popular and powerful in political and diplomatic circles that he was awarded the Nobel Peace Prize, which he shared with Austen Chamberlain of Britain for his efforts in 1925. He then became Calvin Coolidge's vice president in 1925, ambassador to Great Britain in 1929, and American delegate to the Disarmament Conference in 1932 but resigned to become chairman of the RECONSTRUC-TION FINANCE CORP. (RFC) in the same year. The government agency was developed to make loans to distressed companies during the early days of the Great Depression. Controversy erupted when the RFC's first loan was made to Dawes's bank in Chicago.

During his life, he also found time to write nine books and become an accomplished musician, playing both flute and piano. He died in Evanston, Illinois, in 1951.

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Debs, Eugene V. (1855–1926) *labor organizer* Eugene Victor Debs was born in Terre Haute, Indiana, on November 5, 1855, the son of French immigrant parents. At 14 he quit school to join the RAILROADS and spent several years employed as a paint scraper. Through dedication and hard work, Debs eventually rose to become a locomotive fireman, although he ultimately lost



Eugene V. Debs, 1921 (LIBRARY OF CONGRESS)

his job during the depression of the 1870s. He found new work as a grocery clerk but nonetheless maintained close contact with the railroad industry, and in 1874, he joined the Brotherhood of Locomotive Firemen. By now a committed labor activist, he became editor of the Firemen's Magazine, in which he promoted social harmony through labor reform and peaceful means. In 1880, Debs's popularity was parlayed into politics, and he was elected city clerk of Terre Haute and also briefly held a seat in the Indiana legislature. However, he remained disillusioned by railroad workers who were often bitterly divided along trade lines and sought to consolidate them to present a unified face to management. Therefore, in 1893, he helped to organize the American Railway Union (ARU) and was roundly elected its first president. Debs continued arguing for change through peaceful means, but in 1894 he was unable to prevent union members from participating in the unsuccessful Pullman strike. As the strike spread and nearly paralyzed rail commerce in the West, federal troops were eventually dispatched to put down the strike. Debs was subsequently arrested for contempt of court, and, while serving out his six-month sentence, he became exposed to the writings of Karl Marx. This proved a turning point in his political fortunes, for he formally converted to socialism. In 1898 he established the Social Democratic Party and its more famous successor, the Socialist Party of America, in 1901. Based on his own experiences, Debs also added prison reform to his progressive social agenda.

Like most socialists, Debs felt that ingrained competition between capital and labor ensured class struggle and social inequity. To him no single union could protect worker's rights, and he argued that a cooperative commonwealth would better serve the workers than the profit system. Debs nonetheless couched his radicalism in terms of peaceful political change. In fact, he strenuously maintained that America's traditional political values, which he strongly endorsed, were threatened by the unwillingness or inability of capitalism to promote economic democracy. He was nonetheless a fiery orator and highly popular with the rank and file, who nominated him five times to run for the presidency. In 1900, 1904, 1908, 1912, and 1920, Debs ran unsuccessfully for high office, ultimately receiving only 6 percent of votes cast; as a political movement, the Socialists failed to gain broad electoral acceptance. Part of this failure was Debs's continual struggle to unite moderate factions of the party with more revolutionary elements. However, after 1917 his reputation as a moderate was reaffirmed when he was repelled by the antidemocratic nature of the Russian Revolution and refused to join the newly emerging Communist Party.

In 1916, Debs vocally criticized the neutralist policies of President Woodrow Wilson and predicted that they would culminate in war. When the United States formally entered World War I in 1917, he was arrested for sedition under the Espionage Act and received a 10-year prison sentence the following year. He thus ran for president in 1920 from his prison cell and received nearly 1 million votes, but his political impact began to wane. Debs was released from prison under an amnesty program in December 1921, and, although in poor health, he labored to bring the discredited Socialists back to prominence. But despite large, enthusiastic crowds, the party had lost its previous appeal. He died in Elmhurst, Illinois, on December 20, 1926, a successful labor leader, a failed politician, and a forceful advocate for social change. Curiously, many of the radical positions he enunciated, such as abolition of child labor, woman suffrage, and a graduated INCOME TAX, were eventually co-opted by the political mainstream.

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John C. Fredriksen

Deere, John (1804–1886) *inventor and businessman* Born in Vermont in 1804, Deere's father was British, and his mother was the daughter of a British army officer who served during the American Revolution. At age 17, Deere became a blacksmith's apprentice and then worked as a blacksmith until 1837. He moved to Grand Detour, Illinois, where he began designing plows with a partner, Leonard Andruss. His first inventions used steel cut from an old sawmill blade and bent into shape. The invention was much more effective than plows currently in use by farmers, and within 10 years they were selling more than 1,000 per year.

Deere sold his interest in the company to Andruss and started his own business in Moline, Illinois, in 1847, which initially used English steel as its main component because American steel at the time was inferior. He then commissioned the same sort of steel to be made in Pittsburgh to save on costs, and the plow he produced became the first steel plow manufactured in the United States. Within 10 years, he produced more than 10,000 annually. In 1858, Deere took his son Charles H. Deere into partnership and five years later took his son-in-law Stephen Velie in as well. In 1868, the company was incorporated as Deere & Co., with John Deere as president, Charles Deere as vice president, and Velie as secretary. It introduced the first successful riding plow in 1875. John Deere died in Moline in 1886. Charles succeeded him as president of the company.

Charles Deere expanded the company's distribution as president and also added new lines of Deere products, including corn planters, plows, and harrows. Over the next century, Deere & Co. again added other lines to its product mix, including tractors, lawn care products, forestry equipment, and other types of farm equipment. The company name became a household word in the Midwest, especially after it offered very liberal lines of credit to farmers during the Great Depression so they could remain in business. By 1958, Deere surpassed INTERNATIONAL HARVESTER as the country's largest manufacturer of agricultural equipment. Five years later it became the largest in the world, selling more than \$3.5 billion worth of its products.

Despite its growth, the company remained headed by a family member until the early 1980s. Many of its tractors and plows were painted green, and the color became the company's hallmark. The name Deere and the image of a green tractor became synonymous with American farm equipment manufacturing.

See also FARMING.

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Depository Institutions Act (1982) Also known as the Garn–St. Germain Act, named after its two congressional sponsors, Senator Jake Garn of Utah and Representative Fernand St. Germain of Rhode Island, the act was passed to aid thrift institutions. In the mid- to late 1970s and early 1980s, many thrift institutions (SAVINGS AND LOANS and savings banks) were disintermediated as savers withdrew their deposits in favor of higher yields offered by money market mutual funds. Savings deposits at thrifts, like commercial banks, were regulated by Regulation Q of the FEDERAL RESERVE, which allowed the central bank to cap the amount of interest paid. As a result, the outflow from the thrifts caused many to begin recording losses, and the entire industry recorded a net loss between 1980 and 1982.

The act allowed the thrifts to liberalize their balance sheets in favor of an expanded array of assets that could potentially yield more than a conventional mortgage. They were allowed to offer commercial loans and consumer loans in limited amounts and to acquire insurance underwriting operations. Interest rate restrictions on accounts were lifted, and they were also allowed to purchase corporate bonds, again as a specific maximum percent of their total assets. They were also allowed to invest in computer networks that provided automated teller machine facilities across state lines.

Unfortunately, in their rush to regain profits, many of the thrifts made ill-advised investments, including poor nonresidential mortgages and JUNK BONDS. Within six years, the industry again was in financial trouble, caused by defaults in the junk bond market and a weakening in the commercial real estate market. As a result, Congress passed the Financial Institutions Return, Recovery and Enforcement Act (FIRREA) in 1989, which reformed the industry and forced many of the marginal thrifts out of business. On balance, the act only temporarily saved the industry before its more liberal provisions caused the industry to fail again.

The greatest legacy of the act was to help spark the interest in junk bonds during the early and mid-1980s. The thrifts became major investors in the bonds, many of which were sold by the investment banking house DREXEL BURN-HAM LAMBERT. The act remains as one of the least successful efforts at DEREGULATION in financial services passed in the 1980s.

See also Depository Institutions Deregulation and Monetary Control Act; Financial Institutions Reform, Recovery and Enforcement Act.

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Depository Institutions Deregulation and Monetary Control Act (1980) Better known by its acronym, DIDMCA, the act was passed by Congress in 1980. It was the first major bank deregulatory legislation since strict regulations were passed during the NEW DEAL. The act had two sides. On one side, it deregulated some activities of banks, while on the other it gave the FED-ERAL RESERVE more power to cope with all depository institutions in the new deregulated environment.

DIDMCA began the phasing out of Regulation Q, which allowed the Federal Reserve to cap interest paid on savings accounts. The original plan was to phase out the ceiling over a six-year period, with the actual mechanics controlled by a committee of federal officials. When the DEPOSI-TORY INSTITUTIONS ACT was passed in 1982, the phaseout was completed earlier than originally anticipated. Deposit insurance offered by the FEDERAL DEPOSIT INSURANCE CORPORATION WAS also increased to \$100,000 per account at insured banks and in authorized NOW accounts (negotiated orders of withdrawal), a checking account that paid interest. NOW accounts had been offered for several years by a small group of banks, but they were legal only after the law was passed.

The Federal Reserve was given widened powers to deal with the high interest rate environment caused by oil-driven inflation. The Fed now set reserve requirements for all depository institutions in the country, not just for its member banks. This measure was designed to stop banks from withdrawing from membership in the Fed system and shore up the central bank's authority in the marketplace. Banks had been withdrawing since the 1960s because the Fed traditionally paid no interest on the reserve balances it held, and many banks wanted to revert to a state charter in order to earn interest on their reserves. The new law substituted a mandatory requirement on all depository institutions, regardless of type or charter. It also shortened the time for check clearing. All banks in the country were now also allowed access to the Fed's discount window, not just members as in the past.

Before the act was passed, the Fed's authority extended only to banks that were members of one of the regional Federal Reserve Banks. Now, by allowing all banks access to the lender of last resort facilities at the discount window and imposing standard reserve requirements, the Fed's authority was more uniform, extending to state-chartered banks and thrifts and the agricultural cooperatives as well. The act, along with the Eccles Act passed in 1935 and the BANK HOLDING COMPANY ACT passed in 1956, became a major building block in shoring up the authority of the Federal Reserve while liberalizing interest rates at the same time.

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deregulation The process of lifting governmental restrictions that had been placed on certain industries since the Great Depression. Beginning in the 1970s and given further impetus by the Reagan administration in the 1980s, a new attitude toward business led Congress to begin passing legislation allowing various industries greater latitude in the sorts of activities they could engage in. Not all industries were involved, and the new environment was not put into place at once but phased in over a number of years.

REGULATION of industry began in the 19th century, when several states established regulatory commissions to monitor RAILROADS operating within their borders. Congress created the INTER-STATE COMMERCE COMMISSION in 1887 in order to regulate the railroads from Washington. But regulation became stalled until the stock market crash of 1929 and the early 1930s. During the Depression, restrictions were placed upon the securities and banking industries as well as on the UTILITIES. Since the early 1920s, AT&T had a virtual monopoly over telephone service that seriously restricted competition in telecommunications. During and after World War II, restrictions were placed upon other industries as well, including the airlines, defense contractors, and other forms of transportation. Many of these regulations defined the scope of an industry and sometimes prohibited companies within select businesses, such as banking, from branching across state lines. During the post-World War II period, many industries were regulated over rates that they could charge the public. Others were limited to domestic investors so that foreigners could not gain control over industries considered vital to the national defense.

A great deal of regulation was passed during the NEW DEAL, restricting the activities of many different businesses, among them the securities industry, banking, and public utility companies. The general theory behind these regulations was that any business serving the public interest needed to be regulated by government so that it would not violate its basic purpose of providing a public service at a reasonable price. After the Korean War in the 1950s, these regulations became less popular as a strengthening and growing economy often caused conflicts in regulated industries. Thus a slow drive toward deregulation was begun.

Deregulation can be interpreted in different ways depending upon the industry under consideration. Often, patterns in the regulation of industries paralleled developments in antitrust law. At other times, it was more closely related to trends in FOREIGN INVESTMENT. Conversely, changes in ANTITRUST signaled changes in regulation, especially in the case of AT&T, which lost its government-granted monopoly after a challenge to its dominance in the 1970s. The deregulation movement gained strength in the 1970s. Transportation was one of the first sectors of the economy to experience deregulation. One of the first industries to be deregulated was the airlines, and the STAGGERS RAIL ACT of 1980 allowed railroads greater flexibility in pricing. During the Reagan years in the 1980s, deregulation picked up considerable momentum and was advocated by the administration as a way of reducing the role of government in business.

Deregulation continued during the Clinton administration, and significant new laws were passed allowing previously regulated businesses greater flexibility, if not total freedom. The Energy Policy Act of 1992 allowed utility companies greater flexibility in pricing and eventually paved the way for many MERGERS between them later in the decade. The Telecommunications Act of 1996 broke down the barriers existing between AT&T and the local Bell companies, while the Surface Transportation Board, created in 1996, abolished the Interstate Commerce Commission, the first regulatory agency created in 1887. The Financial Services Modernization Act of 1999 abolished many of the regulations found in the BANKING ACT OF 1933, and the Interstate Banking Act of 1994 replaced the restrictive branching provisions of the MCFADDEN ACT of 1927.

The deregulation trend in the 1990s and the 21st century also owed much of its impetus to the increasing globalization of the world's markets. In order to be as competitive as possible, many regulated industries argued for greater freedom in order to maintain a competitive edge in the global marketplace, especially if they had to compete with foreign companies that had no restrictions on their activities.

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Dillon Read & Co. An investment banking house founded by William Read in 1905. Its predecessor, Vermilye & Co., was founded in 1832. Over the years, Vermilye developed as a conservative bond house, and when Read joined in 1886, he specialized in fixed income securities, mainly bonds and preferred stocks. He helped develop many early bond valuation techniques that later became standard calculations on Wall Street. When Vermilye dissolved, Read founded his own firm that continued to specialize in bonds.

Read remained a small, specialized securities firm until 1913, when Clarence Dillon joined the firm. Beginning as a bond salesman, Dillon soon helped revamp the firm, making it more aggressive. He also introduced it to the mergers business, whereby the firm's reputation would be made in the following years. The first major deal for Read came in 1920, when Dillon helped refinance the Goodyear Tire & Rubber Co. The size of the \$90 million transaction established the firm's reputation on Wall Street, and its name was officially changed to Dillon Read in the same year.

Dillon's best-known deal came later in the 1920s, when he won the mandate to arrange the sale of Dodge Brothers, the third-largest automobile manufacturer in the country. After the death of the two brothers, the company was put up for sale by the Dodge family, and Dillon bid for it, intending to run the company himself. He competed with J. P. Morgan Jr., who bid for the company on behalf of GENERAL MOTORS. Dillon won the bidding with an offer that was less than Morgan's but was all cash versus a cash and securities offer by Morgan. Dillon's method of estimating the company's future cash flows and then discounting their value to arrive at his bid price was one of the first deals employing that method, which has been commonly used on Wall Street since that time. The deal established the firm's reputation as a merger and acquisitions specialist.

Within a few years, Dillon realized that he was unable to run Dodge successfully and in 1928 sold the company to Walter CHRYSLER of Chrysler Motors for \$170 million, \$24 million more than the purchase price. The deal made Chrysler the second-largest manufacturer in the country at the time. Dillon withdrew from the firm at the end of the 1920s to pursue other interests. The firm continued as a small merger specialist with other limited product lines, including underwriting. In 1971, it chose Nicholas Brady as its senior partner. Brady later became secretary of the Treasury under Ronald Reagan. Clarence Dillon died in 1979.

Dillon Read survived as a partnership until BARING BROTHERS of Britain bought a 40 percent stake in the mid-1990s. A scandal at the British bank caused Dillon Read to buy back the share, and the bank remained independent until it was purchased by the Swiss Bank Corp. in 1997 and merged with another subsidiary, S. G. Warburg & Co. After the purchase, it operated as Warburg Dillon Read.

See also investment banking; Morgan, John Pierpont, Jr.

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Disney, Walt (1901–1966) *animator and businessman* Born in Chicago, Disney studied drawing informally as a youth. After a series of odd jobs, he studied art in the evening at the

Chicago Academy of Fine Arts. In 1918, he served as an ambulance driver for the Red Cross in France. Upon his return to the United States, he became an apprentice cartoonist for the magazine *Film Advertising*. Deciding to pursue his interest in cartooning, he opened a small production company in Kansas City that produced animated shorts, which ran before feature films at cinemas.

After a short period, he moved his operation to Hollywood in 1923 and opened a movie studio dedicated solely to cartoons. In collaboration with his brother Roy Disney (1893–1971), the Disney brothers' studio began producing cartoons featuring a heroine named Alice. These early cartoons became known as the Alice movies. By 1926, they had produced more than 50 short films.

The next cartoon character he created was Oswald the Rabbit, under contract with Universal Studios, and his cartoons became very successful. But he lost the Oswald copyright and had



Walt Disney (LIBRARY OF CONGRESS)

to create a new character. He developed Mickey Mouse after watching mice scurry around his studios. Originally, the character was called Mortimer. After a couple of short films, Mickey Mouse starred in his first hit, *Steamboat Willie*. It was the first cartoon with a sound track that Disney produced, and the film became very successful. By 1934, the company was producing more than 20 pictures per year, and profits were almost \$700,000 per year. Part of the profits was from merchandise tie-ins that Disney helped pioneer along with manufacturers of consumer goods, a practice that the company continues today.

Success followed upon success. Disney produced Snow White and the Seven Dwarfs, Hollywood's first feature-length animated film, in 1937. It won a special Academy Award that year. Other successful full-length films followed, among them Pinocchio, Fantasia, and Bambi. When television made its breakthrough after World War II, Disney quickly embraced the medium. In 1950, his first television show was produced, and by 1954, he introduced his first television series, called Disneyland. The name of the program was also the name of the company's first amusement park, opened in Anaheim, California, in 1955. The theme park became one of the most popular attractions in the country and prompted the opening of another in 1971 in Florida, called Disney World. This park, along with the EPCOT center, was planned from the mid-1960s. Disney himself did not live to see the opening. He died in 1966 in Los Angeles.

By the 1990s, under the leadership of Michael Eisner, Disney had become the world's largest media company, with annual sales exceeding \$20 billion. A Disney theme park was opened in Europe and another planned for Japan, and the company continued to engage in movie production, publishing, and television production in addition to the signature cartoons and entertainment parks. In 1996, the company expanded its operations, buying broadcaster Capital Cities/ ABC for \$19 billion, giving it access to broadcasting and television stations across the country.

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Dow Chemical Company Founded by Herbert H. Dow (1866–1930), chemist and horticulturist, in Midland, Michigan, in 1897, the company is the second-largest chemical company in the United States. Dow was born in Belleville, Ontario, Canada, but grew up in Cleveland, where he studied chemistry at Case School of Applied Science (now Case-Western Reserve University). He invented a process for extracting bromine from brine while still a student, and after several failed ventures founded the Dow Chemical Company at Midland, Michigan, in 1897.

Dow continued his chemical research activities throughout his life, amassing 107 patents while simultaneously directing a growing chemical company. Among his developments was Dowmetal, a magnesium metal extracted from underground brines. At the time of his death he was working on the extraction of magnesium from seawater, a development completed under the direction of his son and successor, Willard H. Dow. He died at Rochester, Minnesota, in 1930. His avocation, horticulture, gave birth to his company's agricultural chemicals division and to the Dow Gardens, now a major Michigan tourist attraction.

The company continued to flourish after his death and inaugurated a plant where magnesium was extracted from seawater in 1939 in Freeport, Texas. The process was considered an engineering triumph and a major contribution to the Allied victory in World War II. The company also was a pioneer in the plastics field during the

1930s, developing polystyrene, saran, and Styrofoam, among other products. Its styrene was a key component of styrene-butadiene rubber, which replaced natural rubber during the war. In the postwar era the company again expanded rapidly to become a global force in the CHEMICAL INDUSTRY, manufacturing some 2,000 products. These range from metals to agricultural chemicals, among them Dursban, the world's largestselling insecticide. In the 1960s, the company became a favorite target of students protesting the war in Vietnam because of its production of napalm for the military forces. During the 1990s the company reorganized, selling its pharmaceutical branch, Marion Merrell Dow, to the Hoechst Company of Germany, disposing of several smaller ventures, and streamlining its workforce from about 55,000 to 40,000. In 1999, it announced plans to merge with Union Carbide Corporation of New York City.

See also DUPONT DE NEMOURS & CO., E. I.

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E. N. Brandt

Dow Jones Industrial Average The first stock market index devised and widely used in the United States. It was created by Charles H. Dow (1851–1902), cofounder of Dow Jones & Co. and editor of the *Wall Street Journal*. Dow began his career in journalism as a reporter for the *Springfield* (Mass.) *Daily Republican*. Eventually he moved to New York to work for the Kiernan News Agency, and in 1882 he and Edward Jones founded Dow Jones & Co. They specialized in financial news, originally distributed to Wall Street by messengers until the *Wall Street Journal* was founded in 1889. Dow remained active at the newspaper until 1902, when he sold the company to Clarence BARRON.

Dow's index was first devised in 1896 in order to act as an accurate gauge of the market and became regularly reported in the Wall Street Journal. The Dow Jones Industrial Average, first published in the newspaper on May 26, 1896, originally contained 12 industrial stocks-Lachlede Gas & Light, GENERAL ELECTRIC, American Cotton Oil, American Sugar, Chicago Gas, AMER-ICAN TOBACCO, Distilling & Cattle Feeding, National Lead, North American Co., Tennessee Iron & Coal, U.S. Leather Preferred, and U.S. Rubber. Later in the same year, a railroad average was also introduced, which became the Dow Jones Transportation Average when it was renamed in 1970. In 1929, the utilities average was also introduced to monitor the performance of the energy sector.

The original index was increased gradually over the years to its present 30 stocks. New stocks are added and old stocks dropped from the averages in an attempt to keep the indexes closely attuned to developments in the sectors they represent. Other Dow indexes were introduced over the years, but the original index remains as the best-known and most widely reported of the Dow Jones statistics.

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Drew, Daniel (1797–1879) *stock trader and speculator* Born in Carmel, New York, Drew became the best-known and most feared stock trader of his era. Possessing no formal education, he joined the army to serve in the War of 1812 in order to receive a \$100 payment for those who enlisted. He took the money and became a cattle

drover and horse trader. He developed a reputation for delivering cattle that had been fed excessive amounts of water to make them look fat. The term *watered stock* was used to describe the condition, and the term carried over to the stock market to mean stock that had been seriously diluted.

Using money supplied by Henry Astor, Drew expanded his operations to the west and became one of the first drovers to herd cattle across the Allegheny Mountains. In 1834, he entered the steamboat business and became a competitor of Cornelius VANDERBILT, with whom he would battle again in later years. In 1844, he moved to Wall Street, opening the firm of Drew, Robinson, & Co., where he began a career of stock manipulation and speculation. In 1853, he became involved with the ERIE RAILROAD. By 1857, he had become a director of the Erie and was widely known for manipulating its stock. But he was a loser in a classic confrontation with Cornelius Vanderbilt in the manipulation of shares of the Harlem Railroad in 1864.

One of the first traders to use public deception to his own advantage, Drew became famous for his notorious "handkerchief trick," whereby he "accidentally" dropped a handkerchief in a New York club with stock tips contained inside. Traders picked it up and read them, thinking they had become privy to his trading secrets when they were actually being manipulated by him.

Drew engaged in the infamous "Erie Wars" with Jay GOULD and Jim FISK against Cornelius Vanderbilt to gain control of the railroad between 1866 and 1868. Along with his two allies, he managed to swindle Vanderbilt out of several million dollars by dumping newly printed shares of the Erie on the market despite a court order. After 1870, his luck failed him after being duped by Gould and Fisk, who sold Erie stock in England in a plan to foil him; he lost more than a million dollars. As a result, he became bankrupt in 1876.

Although widely reputed to be a curmudgeon and barely literate, Drew donated money for a

seminary in New Jersey, which subsequently became Drew University. He died in 1879, still remembered as one of the most feared stock traders and manipulators of his era.

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Drexel, Anthony J. (1826–1893) *banker* Born in Philadelphia, Drexel's father was Francis M. Drexel, a prominent city banker from a wellknown Catholic family. Anthony joined the family firm at age 13 as an apprentice and was made a partner in 1847. Although lacking a university education, Drexel was well versed in several languages and became one of the best-known bankers of his generation.

The Drexel firm was upstaged by Jay Cooke & Co. during the Civil War as the major distributor of TREASURY BONDS, and a rivalry developed between the two firms until the collapse of Cooke in 1871. Drexel's career was somewhat overshadowed by his partnership with John Pierpont Morgan. Drexel & Co. joined in a partnership with Morgan in 1871 at the suggestion of Junius S. Morgan, and Drexel Morgan & Co. opened for business and became the American agent for J. S. Morgan & Co. of London. In addition to doing substantial domestic investment banking business by underwriting securities issues for the U.S. Treasury and many RAILROADS, Drexel Morgan also engaged in international banking. When his older brother Joseph William Drexel died in 1888, Anthony became the sole head of the firm. After the formation of J. P. Morgan & Co. in 1895, Drexel & Co. faded into the background and for all intents and purposes became a subsidiary of the Morgan bank.

Drexel also became the guardian of his niece, Katherine Drexel (1858–1955), the daughter of his brother Francis. She became active in the Catholic Church and founded numerous institutions with her inheritance, among them the Sisters of the Blessed Sacrament. She was later canonized by the church in 2000.

Drexel was also involved in philanthropic activities, the best known being the founding of the Drexel Institute in Philadelphia in 1892, today known as Drexel University. Originally, he gave the institution \$3 million. He died in Bohemia in 1893. After the 1933 separation of commercial and INVESTMENT BANKING by the Glass-Steagall Act, Drexel & Co. continued as an independent partnership until it merged several times, first to become Drexel Harriman, Ripley & Co., then Drexel Firestone, and finally DREXEL BURNHAM LAMBERT in 1973. The firm was finally dissolved after the insider trading scandals of the late 1980s.

See also Morgan, John Pierpont; Morgan, Junius Spencer.

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Drexel Burnham Lambert A major securities dealer and underwriter in the 1980s, best known for introducing, underwriting, and trading high-yield, or junk, bonds. The activities of the firm centered around Michael Milken, who developed the market during the 1970s as a means of providing capital for companies with less than investment-grade credit ratings.

Drexel Burnham was the product of the merger of two smaller Wall Street securities houses. Burnham & Co. was founded by I. W. Burnham in 1935, while Drexel & Co. was older, dating back to the 19th century. Before the Glass-Steagall Act was passed in 1933, Drexel was an affiliate of J. P. Morgan & Co. but was separated from the bank after the act became law. Burnham and Drexel merged in 1971, but a continuing shortage of capital forced another merger with broker William D. Witter & Co. in 1976. Banque Brussels Lambert, a shareholder in Witter, became an owner in the merged entity, and the firm became known as Drexel Burnham Lambert.

Drexel became known for underwriting and selling high-yield, or junk, bonds in the 1970s due to the presence of Michael Milken, a young bond trader hired from business school by the original Drexel & Co. By 1980, the firm emerged as the sole leader in junk bonds on Wall Street. By the mid-1980s, the firm stood among the top five Wall Street underwriters, mainly because of its continued success. The firm also sponsored the famous Predator's Balls, lavish parties given at a Hollywood hotel to promote investment in high-yield bonds.

Drexel Burnham became active in MERGERS and acquisitions because of its junk bond expertise but also ran into regulatory problems as a result. Because of the firm's involvement in the insider trading scandal of the 1980s. Milken and several associates from outside the firm were charged with securities violations and sent to prison. Throughout its short history, Drexel Burnham was never a publicly traded corporation but one that was privately held by both shareholders and some employees. The firm settled charges against it by the Securities and Exchange Commission (SEC), but the \$600million fine imposed wiped out its capital base. The firm was forced to file for BANKRUPTCY in 1990. It reorganized several years later under a different name but remained a small Wall Street house. Its failure remains the largest failure in modern investment banking history and the only one to be caused by the direct actions of the SEC

See also Drexel, Anthony J.; investment banking.

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Drucker, Peter (1909–2005) economist Peter Ferdinand Drucker was born in Vienna, Austria-Hungary, on November 19, 1909, the son of a prominent lawyer and civil servant. After receiving his secondary education in 1927, he pursued advanced studies at the Universities of Hamburg and Frankfurt, Germany. Because neither institution offered courses at night and Drucker was obliged to work by day, he completed his courses and passed his exams solely by reading texts on his own. Drucker ultimately received his doctorate in public and international law but opted to dabble in economics as an editor and financial writer. As such, he observed closely the failure of economic democracy in the Weimar Republic and the concomitant rise of political extremism. However, when Adolph Hitler became German chancellor in 1933, Drucker was offered a lucrative position within the Ministry of Information. He responded by composing a scathing pamphlet condemning Nazi excesses and fled the country for England. There he worked with an insurance firm as a securities analyst and also encountered the noted economist John Maynard KEYNES at a Cambridge University seminar. At this juncture Drucker decided to shift his expertise from economics to management. In 1937, he arrived in the United States as an economic correspondent for British financial newspapers. Two years later, he published his first book, The End of Economic Man, which was well received-and the first of 30 tomes to follow. Drucker decided to remain in the United States while World War II raged, and in 1943, he became a naturalized citizen.

It was as an observer at GENERAL MOTORS during the war years that Drucker made an indelible impact upon American managerial practices. His experiences there culminated in his most influential book, *The Concept of a Corporation* (1946). Here Drucker broke new ground intellectually by viewing the corporation as less of a business entity than a social one. He also posited that a new concept of management was necessary for the expanding corporate world and insisted that greater cooperation between labor and management was essential to extract maximum efficiency from the system. Most radical for its time was his notion that the assembly line was obsolete and that workers should receive greater autonomy and influence over daily routines. By virtue of challenging traditional tenets of managerial authority, his book became one of the most popular texts in business history. But Drucker nonetheless remained closely identified with the conservative school of economics, and he stridently defended profit making as the key ingredient of economic success. Moreover, he maintained that large profits were a better guarantor of full employment than the best-intended government planning. Corporations agreed with him wholeheartedly, and at one point he was on the payroll of more than 50 companies, advising them how to improve their management and business oversight.

Throughout the rest of his long career, Drucker became a much sought-after lecturer and instructor. By turns he held important economic chairs at Sarah Lawrence University, Bennington College, New York University, and the Claremont Graduate School. But Drucker always saw himself as more of a business philosopher than a practitioner, and he repeatedly declined invitations to head large corporations. In addition to business and management, he turned his eclectic interests to teaching such diverse topics as government, statistics, religion, and literature. He also became celebrated for invariably changing his teaching interests every three to four years and is further regarded as something of an authority on Japanese art. Even after his death on November 11, 2005, Drucker is still considered the most important managerial theorist of the 20th century and was a mentor to several generations of business leaders. Many of his 30 books have been translated into several languages and successfully sold around the world. He has also published long-running economic columns in numerous respected newspapers such as the Wall Street Journal, Forbes, Inc., and the Harvard Business Review. But, most importantly, he is viewed as the single most important philosophical force behind modern management.

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John C. Fredriksen

Duer, William (1747–1799) *merchant and speculator* Born in Devonshire, England, to a prominent family with landed interests in the West Indies, Duer was educated at Eton College and commissioned as an ensign in the British army. After serving in India and visiting the family holdings in the Caribbean, he visited New York in 1768 and purchased land in northern New York. He immigrated to America permanently in 1773.

Sympathetic to the colonists' grievances against Britain, he remained in the United States and became influential in New York City. He became a member of the Continental Congress from New York and a judge and was a signer of the Articles of Confederation. He resigned from Congress in 1779 to attend to his commercial interests. He was also instrumental in establishing the BANK OF NEW YORK along with Alexander HAMILTON.

His influence increased in the 1780s, when he became secretary to the Board of the Treasury in

1786 and assistant secretary of the Treasury under Alexander Hamilton between 1789 and 1790. In 1787, he became involved in the Scioto land speculation and was later charged by the Treasury for using his government posts inappropriately. In order to finance his land speculations, he borrowed heavily from the existing New York banks and then was unable to repay. He also speculated heavily in stock of the first BANK OF THE UNITED STATES and the Bank of New York using borrowed money.

Duer's default reverberated through the New York stock market, which was conducted out-ofdoors at the time. News of the BANKRUPTCY caused the market to drop precipitously. His total losses were reputed to be worth more than the total value of New York City real estate at the time. As a result, the outdoor traders banded together and signed the Buttonwood Agreement that became the first organized foundation for the NEW YORK STOCK EXCHANGE, founded two decades later.

Duer was convicted and sent to debtors' prison. The harsh sentence imposed on him reflected in part anti-British feeling in New York during the 1790s. His friend Alexander Hamilton intervened on his behalf, and he was freed for a time in 1797 but was finally returned to prison, where he died in 1799. His death also prompted bankruptcy laws to be written by Congress. He retains the distinction of being the first fallen financier after Independence to create a panic in the stock market.

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Duke, James Buchanan (1856–1925) *tobacco magnate, power developer, and philanthropist* Duke was born near Durham, North Carolina, to Washington and Artelia Roney Duke. He received his basic education in local academies and attended the Eastman Business College in Poughkeepsie, New York. His primary education, however, was in the family's business: the farming, hand manufacture, and marketing of tobacco products.

In 1884, at the age of 28, Buck, as he was called, opened a branch of the family firm, W. Duke, Sons & Company, in New York City. Within five years the business was furnishing half the country's production of cigarettes. After a "tobacco war" among the five principal manufacturers, Duke emerged as president of the AMERICAN TOBACCO CO., a tribute to his organizational skills. Through foreign and domestic combinations, this trust controlled the manufacture of a majority of tobacco products. The U.S. Supreme Court dissolved the enterprise under provisions of the SHERMAN ACT in 1911.

By 1892, however, Duke had begun to diversify his interests. His older brother, Benjamin, had launched the family into textiles. As this enterprise grew, a need for economical waterpower led the Dukes into hydroelectric power generation. In 1905, they founded the Southern Power Company. Within two decades, this was supplying electricity through a system of power grids to more than 300 mills, factories, and cities and towns in the Carolinas. It is now Duke Power Company, a part of Duke Energy.

A lifelong Methodist, Duke practiced the financial stewardship encouraged by his church. The family, ardent Republicans and sympathetic to the downtrodden, gave individually and collectively to many causes. Beginning in 1892, Washington Duke had aided a small Methodistrelated institution, Trinity College, and from 1887 Benjamin Duke had been a member of its board of trustees. Continuing the family's pattern of giving, James B. Duke, its most financially successful member, established the Duke Endowment in 1924. Its primary beneficiary was a university organized around Trinity College. At the urging of the college's president, William Preston Few, the school was rechartered as Duke University in honor of the family that had long supported it.

In addition, Duke designated income from the endowment to be distributed to nonprofit hospitals and child care institutions for blacks and whites in the Carolinas; to rural Methodist churches and retired Methodist preachers in North Carolina; and to three other educational institutions: Furman University (Greenville, South Carolina), Johnson C. Smith University (Charlotte, North Carolina), and Davidson College (Davidson, North Carolina). Now one of the largest foundations in the United States, the Duke Endowment, with offices in Charlotte, North Carolina, has distributed more than \$1.5 billion to its beneficiaries.

After a brief first marriage that ended in divorce, James B. Duke married a widow from Atlanta, Nanaline Holt Inman, in 1907. One daughter, Doris, was born to the couple. James B. Duke died in New York City on October 10, 1925. He is interred with his father and brother Ben in the chapel on the campus of Duke University.

See also UTILITIES.

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Thomas F. Harkins

DuPont de Nemours & Co., E. I. Founded by Eleuthère Irénée du Pont de Nemours (1771–1834) in 1802, the company began as a manufacturer of gunpowder. Born into an aristocratic French family, du Pont immigrated to the United States in 1800 with the intention of establishing a utopian community in Virginia. The venture failed, and du Pont took up the manufacturing of gunpowder instead, having learned chemistry from the French chemist Antoine LAVOISIER. The concept proved successful in the United States because American facilities for making gunpowder were poor.

He established a powder manufacturing facility in Delaware. Hearing of his reputation, Thomas Jefferson commissioned him to produce gunpowder. While demand for du Pont's product increased rapidly, he was in financial difficulties until the War of 1812. When he died, the company had assets of around \$320,000, and his factories were producing more than a million pounds of powder per year. During his lifetime, du Pont constantly heard criticisms about him being a merchant of death, especially since he originally had intended to start a model community.

During the Civil War, the company built a plant in New Jersey to manufacture dynamite, and for the remainder of the 19th century, the company continued to manufacture powders. In 1902, at the beginning of the 20th century, the DuPont Company was purchased by three great-grandsons of the founder-Thomas Coleman DuPont, Alfred Irénée DuPont and Pierre S. DuPont-and the company was given a new direction. Alfred DuPont (1864-1935) in particular was credited with saving the company from falling into outside hands in 1902. Known as an inventor and gunpowder specialist, he helped incorporate the company. The three renamed the company after the founder and established several research centers in order to develop new and improved products. The company also diversified into new businesses, including nonexplosives such as lacquer.

New ownership also provided the opportunity for the DuPonts to introduce new management techniques and a new structure for the company. They discarded the old company organizational structure and integrated it vertically in order to avoid waste and duplication. Following the new structure, the company began to manufacture many of its own supplies rather than purchase from outside vendors. Pierre DuPont also introduced many changes in accounting and financial planning that became the standard for years to come. The company emphasized its cost of capital when calculating returns on investment and introduced a financial ratio, now called the DuPont ratio, that measured return on investment differently from standard practice at the time. By World War I, it was producing onehalf the dynamite needs of the United States.

Toward the end of the war, the company began investing in the chemical and dye industry and in 1923 acquired the rights to manufacture cellophane. Pierre DuPont (1870-1954) left the company in 1920 to help rescue the GENERAL MOTORS CORP. from the prospect of BANKRUPTCY. Previously, the company had been persuaded by John RASKOB, a former DuPont treasurer, to invest \$25 million in the auto manufacturer, and Pierre was persuaded to join the company to resuscitate its fortunes after the company had been wrestled from William C. Durant, its founder. In the 1920s and 1930s, the company continued its expansion into other chemicals, including resins and synthetic rubber. In 1935, two of its researchers developed nylon, described originally as a synthetic silk. During World War II, the company built and operated two plants that were part of the highly secret Manhattan Project that developed the first atomic bomb.

During the 1950s and 1960s, DuPont continued to develop a host of synthetic fibers and materials. In 1957, the company was found to be in violation of the CLAYTON ACT through its investment in GM, and it divested its holdings by 1961. In 1981, it acquired Conoco, an oil company, in what was the largest acquisition at the time. The acquisition almost doubled the size of the company and its revenues. Conoco was sold in 1999. DuPont also made investments in the biotechnology and pharmaceutical industries and became one of the leading producers of soy protein additives that were sold to other companies.

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Durant, William Crapo (1861–1947) *automobile executive and investor* Born in Flint, Michigan, in 1861, Durant left high school before graduating to become a traveling cigar salesman. After other jobs selling, he purchased a carriage manufacturer after being impressed with the smooth ride of its carriages, which were supported by coil spring suspension. At age 25, Durant and a partner, Josiah Dallas Dort, purchased the Coldwater Road Cart Co., a manufacturer of carriages, with \$1,500 borrowed from a bank. Within several years, the company was the nation's largest of its type, producing more than 150,000 units per year, and was the largest employer in Flint.

After making his first million manufacturing carriages and wagons, he entered the automobile business in 1904 when he became chief executive and treasurer of the Buick Motor Company at the behest of James Whiting, the company's president. Buick soon acquired the Cadillac Motor Company, and the two companies produced highly regarded touring cars. Within several years, Durant proposed that the four leading auto manufacturers of the time combine to form a giant company to be called the International Motor Car Co. But two of the four, Ford and REO, demurred, and Durant founded GENERAL MOTORS (GM) instead. In 1908, GM was incorporated and sold stock initially worth \$12 million. Within two years, it acquired Oldsmobile and Pontiac. But after an internal dispute, Durant lost control of the company in 1910 to a bankers' group, which provided financing. He remained as a vice president of GM.

Before World War I, Durant opened several new companies, including the Chevrolet Motor Co. and the Republic Motor Co. He regained control of GM after acquiring a majority of its stock in the market but lost it again in 1920, after falling out with the company's primary bankers at J. P. Morgan. In 1921, he founded Durant Motors and became a major speculator in the stock market. His investment activities overshadowed his car company, and he became heavily leveraged by borrowing money on margin to buy stocks. He became known as one of the most celebrated investors in the stock market prior to 1929. He tried to convince President Herbert Hoover about the dangers of a crash prior to October 1929, blaming the FED-ERAL RESERVE for the market's problems. When the 1929 crash occurred, he lost most of his fortune

Later in his life, Durant left the auto industry and investing and operated several bowling alleys near his home in Flint, Michigan. He never again had the capital for successful business ventures. He died in obscurity in 1947. His major legacy remains the initial organization of General Motors, which overtook Ford as the



William C. Durant (LIBRARY OF CONGRESS)

major auto producer in the United States in the mid-1920s.

See also AUTOMOTIVE INDUSTRY.

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E

Eastern Airlines The company, originally Pitcairn Aviation, began in the early 1920s when civil aviation consisted mainly of barnstorming and stunt flying. Founded by Harold Pitcairn, who shocked his wealthy family by announcing his intention of making a business out of airplanes, the young company entered the marketplace as a contract mail carrier.

In a surprise move, Pitcairn sold the airline in 1930 to Clement Keys, who moved the airline's headquarters to Brooklyn, New York, and changed its name to Eastern Air Transport. As a promotional gimmick, 22 women were selected as cabin attendants—among them Mildred Aldrin, whose nephew Buzz found fame as an astronaut.

The company remained relatively healthy throughout the depression years until Keys took an extended trip to Europe. In his absence, his business associates diverted funds into the stillplunging stock market, leaving Keys to face financial ruin. Keys saved the airline through negotiation, in exchange for his resignation. On January 1, 1935, a new general manager was named to (then called) Eastern Air Lines whose name would forever be associated with the company. His name was Edward Vernon Rickenbacker.

Rickenbacker, a World War I flying ace, ruled the company with an iron fist for a quarter of a century and left a glittering record of 26 consecutive years of profit to his successors. When Rickenbacker turned over the leadership of Eastern to Malcolm MacIntyre in 1959, the airline served 128 cities in 27 states, encompassing almost three-fourths of the American population. MacIntyre was an accomplished lawyer but had virtually no experience in the rough-and-tumble game of running a major airline. When he left office in 1963, Eastern was headed for financial oblivion. MacIntyre will be remembered for two bright spots in the company's history-the introduction of the Boeing 727 and the development of the Shuttle.

The former became a workhorse of the industry, and the latter involved a brilliant customer relations strategy. Shuttle flights between New York, Washington, and Boston required no reservations and guaranteed a seat to anyone who showed up. The Shuttle immediately became a way of life for people moving along the heavily traveled Washington–New York–Boston corridor.

In 1975, Eastern's fortunes were entrusted to a man who was called the real inheritor of Captain

Eddie's leadership mantle—former astronaut Colonel Frank Borman. As president and CEO, Borman brought a familiar military ethic back to Eastern. He negotiated wage concessions from the employees in an attempt to save the company from disaster, but failed to compensate for the exorbitant cost of the new airplanes he had ordered or the costly effects of DEREGULATION. Borman and Eastern's machinist unions clashed furiously and frequently.

Industry analysts blamed Eastern's troubles partly on poor management and partly on the company's uncooperative labor unions, but the root of Eastern's troubles lay in a poor route structure and huge debt. As a result of these seemingly incurable financial distresses, Eastern succumbed to a takeover bid by Frank Lorenzo and his Texas Air empire. The conflict over Texas Air's acquisition extended to several employee groups and proved to be the beginning of the end for Eastern.

A period of severe employee unrest followed. In March 1989, a strike against the airline was called by the machinists and supported by the flight attendants and the pilots. A week later, Eastern filed for BANKRUPTCY, and its management fought to retain control over Eastern in the face of furious resistance from labor and rapidly diminishing confidence among its investors. In April 1990, bankruptcy court judge Burton Lifland ruled that Frank Lorenzo, the brash corporate raider who had acquired Eastern, was unfit to run the company and appointed a trustee for the airline. A lastditch effort for order failed, and on January 18, 1991, the company folded its wings for good.

See also Airline industry; Pan American Airways.

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Martha Dunagin Saunders

Eastman, George (1854–1932) *businessman* Born in Waterville, New York, Eastman moved to Rochester with his family as a young boy. The death of his father forced him to leave school at age 14 and find work as a messenger. While working in that capacity, he studied accounting in the evenings and gradually worked his way up to the position of clerk in a Rochester bank. But it was not until his first planned vacation that he became interested in photography.

He bought his first camera for a vacation that was never to take place. The large, cumbersome camera he purchased intrigued him, however, and he decided to improve upon the design of the photographic plates that were until that time covered with gelatin. By 1880, he had devised a process for dry plates and opened up shop in Rochester to manufacture them for sale to other camera manufacturers, initially operating as a partnership called the Eastman Dry Plate Co. After manufacturing plates for several years, he hit upon the idea of producing film on a roll, which in turn would help make cameras smaller. He began producing film in 1885. Three years later, he produced the first Kodak camera, which was unique for being able to be operated with the click of a simple button. The trademark name was registered and quickly became synonymous with photography itself.

The original camera had film installed capable of taking 100 pictures. The price was \$25. When the customer used the entire roll of film, it was returned to the factory, where the film was developed and the camera reloaded before being returned to its owner. Previous partnerships gave way to the Eastman Co. in 1889 and finally the Eastman Kodak Co. in 1892. Eastman served as chairman of the company's board from 1925 to 1932.

From the beginning, Eastman emphasized MASS PRODUCTION combined with low costs so that he could reach as wide a market as possible. He was also much more generous to his employees than many other industrialists of the period. As early as 1899, he began distributing a portion of his own profit to his employees. He later established a program called the "wage dividend" that paid each employee a percentage equivalent to the common stock dividends above his or her salary. After World War I, he gave one-third of his stock holdings to his employees. The gift was worth about \$110 million.

Eastman Kodak Company became the largest American producer of cameras and film until challenged by the Polaroid Co., founded by Edwin LAND, and later by imports, mostly from Japan. Eastman remained a generous philanthropist throughout his life. He was a major benefactor to the University of Rochester, M.I.T., Hampton Institute, and Tuskegee Institute. The University of Rochester was the main beneficiary, especially its Eastman School of Music. He died in 1932.

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Eaton, Cyrus (1883–1979) *financier and industrialist* Born in Nova Scotia, Eaton was a member of an established New England family that moved to Canada in 1760. He graduated from Amherst Academy in Ontario and decided to become a Baptist minister. After graduation, he visited an uncle who was a Baptist minister in Cleveland, where he was introduced to John D. Rockefeller, a member of his uncle's congrega-

tion. After working at a summer job for Rockefeller, he was persuaded to attend McMaster University and study business. He graduated in 1905 and went to work for Rockefeller after a brief series of odd jobs.

Eaton began working for Rockefeller in Manitoba in 1907. He was put in charge of acquiring franchises for power plants in Canada, although the Panic of 1907 intervened, and Rockefeller was unwilling to pursue the enterprise. Eaton then assumed part of the project himself, borrowed money, and built a power plant in Manitoba. He soon followed this success by building other plants, and he eventually established the Continental Gas and Electric Company with holdings in the United States and Canada.

In 1913, he returned to Cleveland and established a partnership in the investment banking firm Otis & Company. Over the next 10 years, Eaton became one of the major investors in the UTILITIES industry, which was expanding rapidly in the 1920s. He merged Continental Gas and Electric with the Kansas City Power and Light Co. and the Columbia Power and Light Co. to form United Light and Power, a giant utility that served more than 5 million people in a dozen midwestern states.

During the late 1920s, Eaton was best remembered for engaging in a takeover battle with Samuel INSULL for Insull's holdings in the Commonwealth Edison Company. In order to fend off Eaton's unwanted advances, Insull was forced to seek the help of New York bankers, who forced his downfall and the notable bankruptcy filing that followed in the early 1930s. He also entered the STEEL INDUSTRY in the 1920s and merged several smaller companies into the Republic Steel Corporation, destined to become one of the country's largest producers. The same year that he created Republic, he also took control of the Goodyear Tire and Rubber Company.

The stock market crash of 1929 reputedly cost Eaton more than \$100 million in losses. Three years later, he became associated with Harold Stuart of the Chicago investment banking firm Halsey Stuart & Co. Halsey Stuart was the former financier of much of Insull's utilities empire. One of the firm's major contributions to finance during this period was the introduction of competitive bids for underwriting mandates for new securities issues, especially in the railroad industry, which was later made standard by the Securities and Exchange Commission.

In his later years, Eaton remained active in industry by becoming the chairman of the Chesapeake & Ohio Railroad and the Kaiser-Frazer Automobile Co. after World War II. He also developed a close relationship with the Soviet Union and organized a series of meetings at his home in Nova Scotia between American and Soviet scientists designed to ease world tensions. These meetings became known as the Pugwash Conferences. He also helped develop the St. Lawrence Seaway.

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Eccles, Marriner S. (1890–1977) *businessman and banker* Born in Logan, Utah, Eccles was the oldest of nine children. After attending Brigham Young College, he became familiar with investments and established an investment company that acquired many of his father's successful business enterprises. In 1924, he and his brother joined with a prominent banking family in Utah to form the Eccles-Browning Affiliated Banks, which rapidly began to expand by acquiring banks in Utah and Wyoming. In 1928, he and several partners organized the First Security Corporation, a HOLDING COMPANY that managed the acquired banks. The company was one of the first multibank holding companies in the United States.

Eccles's banks survived the Great Depression without serious disruption, and he became the most prominent banker in the West during the 1930s. A Republican until the early 1930s, he shared many of the Roosevelt administration's goals and became an avid supporter of the Democrats. He helped the administration draft the Emergency Banking Act of 1933, the Federal Housing Act of 1934, and the BANKING ACT OF 1933 (Glass-Steagall Act). As a result of his public service, Eccles was named chairman of the Federal Reserve System in 1934 and assumed the position in 1935 after being confirmed.

He was also the principal force behind the Banking Act of 1935, which reorganized the Federal Reserve System. Since its inception, the central bank had been criticized in many quarters as being elitist, but it lacked power in many crucial areas that would allow it to maintain control of the creation of money and credit. The central bank was restructured by the 1935 act and given specific powers that were lacking during the 1920s and were widely blamed for contributing to the 1929 crash. The Fed was now allowed to perform system repurchase agreements. Prior to the law, the branches could perform open market operations, undoing board policy as the New York Federal Reserve Bank had done in 1929. The Fed's membership also was redesigned so that members of the board would be full-time employees.

After World War II, Eccles helped work on the agreements drawn up at Bretton Woods, New Hampshire, that created the World Bank and International Monetary Fund. In 1948, President Truman did not reappoint him chairman of the Fed, but he remained as vice chairman until 1951, when he resigned. He died in Salt Lake City in 1977.

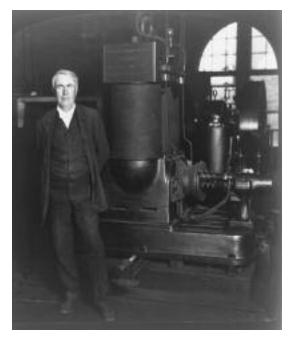
Eccles is widely remembered as a successful banker with wide practical experience, which eventually contributed to the most significant reforms of the FEDERAL RESERVE since it was founded. The Federal Reserve building in Washington, D.C., is named in his honor.

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Edison, Thomas A. (1847–1931) inventor Born in Milan, Ohio, to Samuel and Nancy Elliott Edison, Edison began experimenting while still a child. Not academically talented as a child, his mother often instructed him at home, and he developed an early interest in chemistry. He sold sundries on trains to earn money and suffered an accident that caused lifetime deafness. After learning how to telegraph messages from a railway agent, he took a job as a telegraph agent in Canada before returning to the United States. After working at a series of jobs as a telegraph operator, he began inventing and patented a stock TICKER TAPE machine. While working in New York City, he made improvements for a stock ticker while working for the Gold Indicator Company. The patents he registered were sold to his employer for \$40,000, and he promptly took the proceeds and opened a workshop in Newark, New Jersey.

While in Newark, Edison improved the stock ticker and also made substantial improvements for the TYPEWRITER. Both developments helped increase business efficiency once the devices were put into use. Shortly thereafter, he moved his headquarters to Menlo Park, New Jersey, where he made improvements on the telephone. His most important invention to date was the phonograph, which he invented as a way to record telegraph messages, but it was the electric incandescent bulb that earned him the nickname "The Wizard of Menlo Park." In 1879, he succeeded in placing a filament in a bulb that burned for many hours before going out. He was also one of the first developers of the electric chair, bringing him into direct competition with George WESTING-HOUSE. Edison's version of the electrocution device used direct current (DC), while Westinghouse's used alternating current (AC) and eventually became the standard model used.



Thomas Edison and his original dynamo, Orange, New Jersey, 1906 (LIBRARY OF CONGRESS)

In 1887, Edison moved his laboratories to West Orange, New Jersey, and continued to invent while perfecting his older inventions. He also spent considerable time marketing his ideas. The electric lightbulb was only a part of the process of electric generation, and Edison spent considerable time organizing power stations to support his invention. The first power station in New York City was at Pearl Street, near Wall Street, and J. P. Morgan was the first user of the power that it generated. Morgan later bought Edison's operation, freeing the inventor from business matters, and used it as the basis for the GENERAL ELECTRIC CO. Edison's assistant at the time was Samuel INSULL, who would later build a massive UTILITIES empire in Chicago.

Using research first developed by George EASTMAN, Edison also invented the motion picture camera. He connected the phonograph and the camera in order to produce talking pictures but was less interested in this development than others. During his lifetime, he also was responsible for developing the dictaphone, allowing secretaries to transcribe messages from a machine that recorded voices, and a duplicating machine, among many other inventions.

Edison's original company, the Edison General Electric Company, was later consolidated by J. P. Morgan with the Thompson-Houston Company to become the General Electric Company. During World War I, Edison was president of the Naval Consulting Board and conducted research on torpedoes and submarine periscopes. As a result of his research, he was awarded the Distinguished Service Medal. He died in West Orange in 1931, the most prolific and celebrated inventor of modern times.

See also MORGAN, JOHN PIERPONT.

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Enron Corporation An energy company created in 1985 with the merger of the Houston Natural Gas Co. and InterNorth Corp. of Omaha, integrating several pipeline companies to create the first nationwide natural gas pipeline system. A year later, Kenneth Lay became the chief executive officer, and the company officially chose Enron as its name.

In 1987, the company began developing risk reduction techniques to protect itself against the fluctuating prices of gas and oil. It also began offering customers the ability to buy long-term gas contracts at fixed prices and began diversifying itself internationally, especially in Britain and South America. In 1994, it entered the electricity trading market after the DEREGULATION caused by the Energy Policy Act of 1992. As a direct result, throughout the 1990s the company continued to acquire UTILITIES companies, including the Dabhol power plant in India and Wessex Water in Britain. It also expanded into the domestic utilities business by purchasing the Portland General Electric Corp. in 1997 in a much-contested acquisition pitting the company against Oregon's utilities board.

Jeffrey Skilling joined the company in 1989 and was elected president and chief operating officer in 1996. The company continued to make acquisitions during the later 1990s as a deliberate strategy of growing through merger. In 1999, the company initiated a broadband services group and began trading energy through an on-line Web site, which quickly became the largest e-business site in the world. By 2000, annual revenues had reached \$100 billion, much of it provided by energy trading. Within a year, the company was reported to be the sixth-largest energy company in the world and ranked in the top 10 largest U.S. companies measured by assets.

In the fall of 2001, fortunes began to change at Enron when it announced more than \$1 billion in charges for the third quarter and the Securities and Exchange Commission began an inquiry into its affairs, including special investment partnerships Enron had created over the preceding years. Then it announced that it would have to restate its earnings for the previous four years. It was subsequently discovered that the company had engaged in massive fraud regarding its earnings. Its stock price plummeted in the market. Its bankruptcy filing following these discoveries was the largest in U.S. history at the time and prompted the SARBANES-OXLEY ACT, passed by Congress to monitor the activities of accountants and directors of public companies. The company's accountant, Arthur Andersen & Co., was also sued by the Justice Department and was subsequently disbanded for its role in helping Enron shred documents deemed vital for the investigation ordered by the Securities and Exchange Commission.

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Erie Canal The first major inland waterway built in the United States. Canals became the first commonly used method of transporting goods in America, especially from areas that were located between two bodies of water. They quickly replaced the TURNPIKES that had been built decades before but proved expensive to build and maintain. The Erie crossed New York State from Buffalo to the Hudson River, covering 363 miles. It was completed in 1825 at a cost of \$7.1 million and completely funded by New York. Some other smaller canals were funded by private investors, such as the Morris Canal in New Jersey. Originally, the Erie Canal charged tolls of about a cent and a half per mile, but tolls finally were abandoned in 1882.

The canal opened New York State to commerce from the Hudson River to Lake Erie and helped develop it into a major commercial and financial center. This was just as vital to the area's commerce as the St. Lawrence Seaway would be in the 20th century. Although the idea had circulated for years in New York, DeWitt Clinton (1769-1828) was responsible for planning and developing the canal. Originally, he and Gouverneur Morris petitioned Washington for help in building the canal but were denied. Then he petitioned New York, which was much more amenable to the proposal. Clinton was appointed the head of a canal commission. The canal received substantially more support when Clinton was elected governor in 1817, and ground was finally broken for construction. The canal was completed eight years later, and Clinton was aboard the first boat to navigate it, taking nine days to make the journey. The opening of the canal was a national event, and news of its opening traveled quickly throughout the country. The stocks of canals also became popular investments on the stock exchanges.

Canals were quickly overtaken by RAILROADS before the Civil War as a means of transportation but nevertheless remained popular throughout most of the 19th century, remaining as a symbol of economic growth and bringing goods to market as quickly as possible. The Erie was enlarged several times in order to make it more accommodating for increased trade and larger barges. New York finally incorporated the Erie into the New York State Barge Canal System in 1918, merging it with several other smaller canals connecting many of the lakes in the interior of the state.

In addition to building the canal and serving as governor (1817–22 and 1825–28), Clinton was also a state assemblyman, state senator, and mayor of New York City (1803–15). While mayor, he established the New York City school system. The Erie Canal remains his most noteworthy achievement.

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Erie Railroad Company In 1851, the first unit of the later Erie Railway System opened under the corporate banner of the New-York & Erie Railway Company. At the time, this 447-mile, broad-gauge (six feet) line between the "ocean and the lake" was touted as the "technological marvel of the age." Specifically, the Erie built across the rugged "Southern Tier" of New York counties from the village of Piermont, located on the Hudson River about 25 miles north of New York City, to Dunkirk, a small community on Lake Erie southwest of Buffalo. While likely a routing mistake, the company subsequently strengthened its position with entry to the Port of New York at Jersey City, New Jersey, and also at Buffalo. Because of bad management and other factors, the "first" Erie fell into BANKRUPTCY in 1859. The reorganized company, the Erie Railway, never became the profitable property that its leaders had expected, and this led to a battle for control among speculator Daniel DREW, "Commodore" Cornelius VANDERBILT of the New York Central & Hudson River Railroad, and the stock traders "Jim" FISK and Jay GOULD. The so-called Great Erie War, which erupted in 1867, created additional financial problems, but when the victorious Gould took control, he made it a much better property. "[Before Gould] its iron was worn and its roadbed in bad order," reported the Railroad Gazette in 1871. "There is now no better track in America. Then it was scarcely safe to run twenty miles an hour; now the road is as safe at forty-five miles as human precaution can make it."

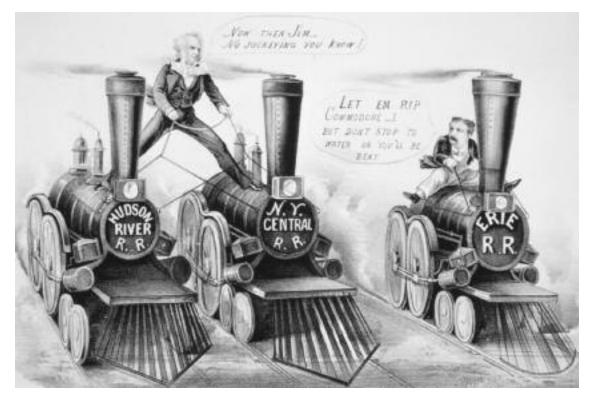
Unfortunately for both the Erie and Gould, the "scarlet woman of Wall Street" image forever haunted them. In the early 1870s the talented Gould left the Erie, and the road limped along under ineffectual leadership until entering its second bankruptcy. The widespread depression triggered by the Panic of 1873 caused the property to experience serious financial woes. By the end of the decade a better day had dawned for the Erie, reorganized in 1878 as the New York, Lake Erie & Western Railroad. Modernization of rail and rolling stock, standardization of gauge at four feet 8.5 inches, and creation of an expanded albeit patchwork system that featured a nearly 1,000mile mainline between Jersey City and Chicago, Illinois, encouraged investors, employees, and customers. But hard times returned in the wake of the catastrophic Panic of 1893, and once again the Erie stumbled. A third bankruptcy followed.

Then in 1895 a "new" Erie emerged. The New York, Lake Erie & Western moniker gave way to simply the Erie Railroad. Even though the road experienced a relatively rapid reorganization, the

reconcentrated firm lacked a financial structure that would have truly enhanced its chances of avoiding future difficulties. By the early 20th century the Erie had become a "Morgan property," controlled by the giant J. P. Morgan & Company. Generally, this relationship with the "House of Morgan" worked to the advantage of the Erie. Its debt sold well, making possible a substantial upgrading of its physical plant. Perhaps the capstone of this rehabilitation work was an impressive line relocation in southern New York. And the Erie acquired modern steam locomotive and freight and passenger equipment. The old vaudevillian wheeze, "I want to go to Chicago the worst way. . . . Take the Erie!" seemed less apropos than ever. The Morgan connection brought to the presidency a "manly man," Frederick Underwood, who did yeoman service for the company during much of his 26year tenure. "He sparked growth and confidence in the Erie," observed a latter-day official.

But in the 1920s the Erie underwent a major change of ownership and management. Beginning in 1923 the emerging rail titans from Cleveland, Ohio, O. P. Van Sweringen and M. J. Van Sweringen, two reserved bachelor brothers who already controlled the Nickel Plate Road, began buying large blocs of Erie stock. The "Vans" particularly liked the Erie's low-grade, doubletracked speedway between Ohio and Chicago. As they "collected" other RAILROADS through clever stock arrangements, the brothers attempted to receive regulatory approval to unite their properties into a great system. Twice, however, the INTERSTATE COMMERCE COMMISSION refused to bring the Erie under control of their Chesapeake & Ohio Railroad. The Great Depression of the 1930s sent the Vans' empire into disarray, resulting in still another receivership for the Erie.

Yet at the end of 1941 the railroad emerged from court protection and prospered from heavy wartime traffic. Reduced interest payments and robust wartime earnings prompted the Erie Railroad (its name after the reorganization remained the same) to declare a modest dividend in 1942,



This cartoon shows Cornelius Vanderbilt and James Fisk in a race for control of the Erie Railroad, 1870. (LIBRARY OF CONGRESS)

the first in 69 years and a proud moment for management. The press release, orchestrated by its image-conscious president (1941-49) Robert Woodruff, said in part: ". . . Wall Street tradition was shattered and Brokers were dazedly groping for reliable replacements for the immemorial dictums-When Erie Common pays a dividend, there'll be icicles in hell-and three things are certain-Death, Taxes, and no dividends for Erie Common." Paying dividends did not mean that the Erie was splurging; it was "a penny-pinching property." Early on the company correctly recognized that substantial savings could be derived from dieselization. Even before the war ended, powerful General Motors road units pulled long trains over the hilly main line between Marion, Ohio, and Meadville, Pennsylvania.

Yet savings derived from this replacement technology could not "save" the Erie. By the late 1950s a variety of factors, including increased highway competition, steep property taxation, high labor costs caused by union "featherbedding," and unprofitable commuter trains in the metropolitan New York City area prompted the road to seek a merger partner. After numerous studies and negotiations, the Erie found a mate, the faltering "Road of Anthracite," the 940-mile Delaware, Lackawanna & Western Railroad. On October 17, 1960, the new couple met the corporate world as the 3,188-mile Erie-Lackawanna Railroad (EL). But by the early 1970s the EL had become the "Erie-Lack-of-money," and failed. In 1976, portions of the property entered the quasi-public Consolidation Railroad Corporation (Conrail), and by the early 1990s, the remaining assets were liquidated.

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H. Roger Grant

euro A basket or composite currency developed by the European Economic Community (EEC) in the 1970s and 1980s as the community's accounting currency. The currency then became used in commercial transactions, although it did not exist in note or currency form. It was used by members of the community to offset the often volatile effects of the U.S. dollar, the world's major reserve currency. As the EEC became larger, the need for currency stability against the dollar and for a common transaction currency prompted the development of the contemporary euro.

The common currency of the members of the European Union was created on January 1, 1999, not only to provide the European Union with a common currency, but also to provide some insulation against movements in the U.S. dollar, which had caused distortions in the past against the individual currencies of its members. It included Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal, and Spain. Greece joined in 2001, while the United Kingdom and Sweden have kept open their option to join. In a fall 2000 referendum, Denmark decided not to join.

Since 1999, the exchange rates of the participating countries are fixed. Capital market transactions (including the bond and equity markets, the foreign exchange markets, and the interbank market) were run exclusively in euro, while retail transactions with notes and coins were conducted in national currencies. In the first two months of 2002, national currencies disappeared completely, replaced by euro notes and coins.

With the introduction of the euro, the national central banks became part of the European System of Central Banks (ESCB). The European System of Central Banks comprises a European Central Bank (ECB) located in Frankfurt (Germany) and the national central banks of each country participating in the euro. The governing council of the ESCB formulates the monetary policy. It is made up of the governors of each central bank participating in the euro and of the members of the executive board of the European Central Bank. The executive board implements the monetary policy, giving the necessary instructions to the national central banks.

The creation of the euro cannot be separated from the Single Market Program, another part of the February 1992 Maastricht Treaty on the European Union. The 1992 program provides for the free flow of goods, capital, and persons. Resistance to the creation of the single market was reduced by the single currency as it prevents "beggar-thy-neighbor" type of competitive devaluations. The European Monetary Union (EMU) is therefore the cement of the single market, which by integrating previously fragmented markets allows firms to realize gains in productivity and competitiveness.

Four major benefits of a single currency were identified: reduction in transaction costs (estimated at 0.4 percent of gross domestic product), reduction in foreign exchange risk, increased competition in a more transparent market, and emergence of an international currency competing with the U.S. dollar. A potential cost of the EMU mentioned by several economists, is the sacrifice of national monetary autonomy and the possibility of controlling interest rates or adjusting exchange rates to restore competitiveness.

In its first year of existence, the replacement of national currencies by the euro had a signifi-

cant impact on financial institutions. Firms or governments of a particular country were accustomed to turn to domestic banks to issue bonds or shares since, being denominated in local currency, these securities would be distributed and sold primarily to local investors. This is the wellknown home bias according to which investors have a preference for securities denominated in their own currency. Moreover, issuers had difficulty in raising very large amounts as domestic financial markets were fragmented. With the euro in place, the dynamics of underwriting and placement changed completely. As a consequence, domestic banks lost one source of competitive advantage: a captive home investor base. Moreover, the liquidity of the market driven by a larger pool of investors increased very rapidly. Euro-denominated bonds amounted to euro 812 billion in 1999, exceeding by 49 percent the amount of U.S. dollar-denominated international bonds. Very large issues exceeding euro 5 billion are frequently observed. The consolidation of the banking industry followed rapidly.

The creation of the euro has raised concerns about the functioning of the international monetary system with three major currencies—the euro, the dollar, and the yen. There has been a fear that the absence of a political will to anchor the exchange rates would lead to excessive volatility. In the early years of the euro, economic growth differential in favor of the United States has induced a large appreciation of the U.S. dollar. However, the new currency served a serious integrative function by eliminating the need for businesses to constantly turn to the FOREIGN EXCHANGE MARKET, using the euro as a common currency instead.

See also BRETTON WOODS SYSTEM.

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Jean Dermine

Export-Import Bank of the United States Commonly known as the Eximbank, the Export-Import Bank was created in 1934 by the Roosevelt administration to promote trade with the United States. Specifically, the bank is designed to promote exports by offering favorable financial terms to importers of American goods. It is managed by a five-person board of directors, which is appointed by the president and confirmed by the Senate.

The Eximbank was created during the Great Depression in order to stimulate trade through exports. After the passage of the Hawley-Smoot tariff in 1930, world economic conditions worsened, and the creation of the bank was seen as a way of improving trade and returning the international economy to some order while promoting American exports at the same time. The bank normally guarantees financing to a buyer of American products by offering to guarantee the transaction to the American exporters' bank. These guarantees are known as export credits and form a significant part of American trade. All developed countries have such export guarantee operations falling under a variety of names. Usually, the terms and conditions of the credits are subject to international convention, specifying the length of loans and amounts extended.

The activities of the Eximbank are also combined with other forms of export guarantees in order to generate export activity. Export insurance is provided by the Foreign Credit Insurance Association, which guarantees exports of American sellers. The combination of the two, along with other forms of credits and guarantees, is part of American trade policy and can significantly affect the balance of payments.

The Eximbank has come under severe criticism, especially during the 1980s when the United States ran large trade imbalances. Many studies showed that the foreign buyers of American goods supported by the bank were the customers of a handful of the largest manufacturing exporters, usually those that produced big-ticket items that would provide the largest foreign orders for American producers. Despite the criticism, the bank remains the premier government agency designed to promote trade and competes with similar institutions in other industrialized countries, all designed to stimulate their home country's exports.

See also Foreign Corrupt Practices Act; Hawley-Smoot Tariff Act.

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Farm Credit System The first federal agency founded after the Federal Reserve Board, dedicated to providing credit for a specific sector of the American economy. The system evolved from a need to make credit for farmers more easily available and provide a mechanism by which credit could be allocated on a national scale. As a result, a system of federal farm banks was designed that closely resembled the model originally used for the FEDERAL RESERVE.

The original legislation creating what would become known as the Farm Credit System was the Federal Farm Loan Act of 1916. At the time, private farm credit ranged from 7 to 12 percent per annum, depending upon the source, and was widely recognized to depend to a great degree on the nature and reliability of the lender. The act provided for the creation of 12 federal land banks, organized under the aegis of a Federal Farm Loan Board (FFLB), located in Washington, D.C. The board had five members. Private banks were given the opportunity to sign up and become members of the system, and the banks rushed to join, since as members of a regional land bank they would be eligible for loans. The FFLB was authorized to borrow on the bond

markets, and the proceeds were used to provide funds for the local banks.

The Farm Credit System was enhanced by several pieces of legislation. The first came in 1923, when Congress passed the Agricultural Credit Act, creating 12 intermediate credit banks to be supervised by the federal land banks. During the Depression, the Farm Credit Act of 1933 was passed, establishing another layer of credit institutions standing between the land banks and the intermediate credit banks. This also created the Farm Credit Administration. In 1939, President Roosevelt ended its agency status by issuing an executive order that passed its jurisdiction to the Department of Agriculture. It remained there until 1953. Then it was returned to agency status so that it could become farmer-owned as quickly as possible. It remains responsible for the REGULA-TION and examination of the banks, associations, and related entities that collectively comprise what is known as the Farm Credit System.

Congress passed another Farm Credit Act in 1971 that was designed to streamline the agency. By this time, the system consisted of the land banks, intermediate credit banks, production associations, and cooperative banks. The system funded itself by borrowing in the bond markets and passing the funds to its constituent banks. In the 1970s and 1980s, several farm crises put the system under severe financial strain. Most significant was the rise of the dollar in the early 1980s that reduced farm exports. By 1986, the system recorded losses of almost \$2 billion, and within a year the losses swelled to \$4.6 billion. The credit markets looked unfavorably upon the agency's bonds, and Congress passed the Agricultural Adjustment Act of 1987 in order to shore up the system. As a result, the entire system was restructured, and a specialized agency, the Federal Agricultural Mortgage Corp. (Farmer Mac), was created to borrow money to make up for the loss.

After restructuring, the Farm Credit System remains the major source of loans and mortgages for farmers. Like other GOVERNMENT-SPONSORED ENTERPRISES, its credit carries the implicit guarantee of the U.S. Treasury in the case of default, and the interest rates at which it borrows are passed to the banks within the system, producing a relatively cheap cost of funds for farm credit.

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farming Farming is at the same time a vocation, a necessity, and an industry. It provides the essentials for life but can also function like any other business using capital investment, technology, political lobbying, and marketing strategies to maximize profit. Until the last part of the 20th century, subsistence farming and production for market have always existed simultaneously in the United States. Thus, a survey of American farming does not offer a simple trend toward capitalistic agriculture. Instead it presents a complex interaction between the need for food and the desire for profit, influenced at all times by cultural and political realities, scientific and technical change, and the potentials and limitations of the natural environment.

Most of the early colonists of North America came to improve their financial situation. They were in search of a way to make money, and, for many, agriculture proved the answer. So, from the very beginning of white settlement, both subsistence and capitalist agriculture coexisted. Commercial agriculture was especially strong in the southern colonies, with tobacco, rice, and indigo dominating profit-export crops until the 1793 invention of the cotton gin. The northern and middle colonies also produced crops for export, especially wheat, and farms in these colonies also supplied the growing local and urban markets.

During the 50 or so years from the American Revolution to the 1830s, agriculture in the new United States continued some trends established in the colonial era, while simultaneously undergoing dramatic changes sparked by technological developments and the creation of the public domain.

Most agriculture remained a mix of subsistence and commercial, and as many as 96 percent of the people lived in rural areas. Farms, with the exception of southern plantations, tended to be small (80–120 acres or so), and they generally produced a wide range of crops and livestock, supplying the farm family's needs as much as possible. Once the needs of subsistence were met, farmers used additional land to produce a surplus to sell or trade at market for goods that they could not grow themselves—for example, iron, salt, and coffee.

On these farms, most of the labor was provided by the farm family. The homeplace was the workplace, and everyone except the very young contributed their labor. The women and children were responsible for the farm garden and the smaller livestock, as well as such food production as brewing, baking, and preserving, while the men farmed the field crops and took care of the stock animals. At harvest time, all hands were needed in the fields, and other chores were postponed until the crops were in. Although farm labor was gender-differentiated, most labor during this period was unpaid, with the only income generated through barter or sale of produce. Farmers marketed most of their surplus production locally and were limited by the distance they could travel-either by foot or wagon-before their product spoiled. Thus, farmers who had settled on the frontier-over the Appalachian ridge-tended to produce for market only items that were durable, transportable, and had a high value for a small bulk, such as hogs and whiskey, while farmers nearer urban centers produced grain and truck crops.

The main exception to these small-scale farms were the plantations of the slave South. These farms were very large, ranging upward of 500 acres; produced mainly cash crops (although they aimed at self-sufficiency); and operated with slave labor. The farm family on the plantations did not labor manually, but rather both men and women adopted a managerial role. Plantation owners largely produced crops for the export market. Although the market for indigo had ended after the American Revolution removed British subsidies from the crop, the United Kingdom provided a growing market for the South's new main crop-cotton. Other key staples in the South included tobacco, sugar, rice, and hemp. These crops were generally sent directly to Europe in the care of factors, who would supervise the sales and then purchase luxuries for the plantation family with the profits. Thus, without much local trade or production, town growth in the American South during this period was slow and politically driven.

While the family farm and the plantation had existed in colonial times, the period of the new republic did see some dramatic shifts. One of the most significant decisions for the agricultural future of the United States was the creation of the public domain in 1781, when states that held lands west of the Appalachians ceded them to the confederation government. This public domain was considerably expanded in 1803 with the Louisiana Purchase and again in 1848 in the Treaty of Guadalupe Hidalgo that ended the Mexican-American War. Theoretically, the public domain was intended to benefit all citizens by giving them access to cheap land, something that no longer existed in Europe. Between its creation and the Homestead Act of 1862, the government experimented with various land laws that sold the public domain to citizens relatively inexpensively.

The other main change in this period that had an impact on agricultural development was the improvement of transportation systems. In the early 19th century, the invention of the steamboat and the proliferation of canals in the Northeast revolutionized the movement of both people and products. The steamboat made traveling up rivers such as the Mississippi and the Ohio as easy as traveling down them. Therefore, goods could be hauled to the settled markets of the East from western farms and likewise supplies hauled to frontier farms. In conjunction with canals, the steamboats made it easier and quicker for families to move west, take advantage of the public domain, and farm the frontier. In 1830, the first RAILROADS were constructed in the United States to haul agricultural produce from hinterlands to urban markets. This development increased the marketing range of farms, allowing them to ship heavier goods farther with little loss of profit.

The middle part of the 19th century was marked by expansion, innovation, and violence, much of which affected agriculture on American farms. Over the course of 50 years, the farm population expanded to meet the food needs of a growing nation. At the same time, as the Industrial Revolution took a firm hand on the country's economy, farmers believed, somewhat justifiably, that their income and their status were declining. To counter this problem, farmers adopted new techniques and machines to increase production, they appealed to the federal government for help, and they organized themselves into both nonpartisan and political groups to force the changes they saw as necessary for survival.

One of the main characteristics of this period was the continuation of westward expansion. The initial movement leapfrogged the Great Plains, which were seen as infertile, and thousands of people trekked overland to Oregon and California. Here they sold their agricultural surpluses to miners and lumbermen and local urban centers. As the transcontinental railroads were completed, more and more of the farmers of the West were able to tap into the large markets of the East.

Toward the end of the century, after the federal government had confined many of the native plains people on reservations and enacted the Homestead Act (1862), awarding a free 160 acres to anyone willing to improve it, many settlers flocked to the central regions of the country. Because of the distances involved on the Great Plains, these farmers were the first in the nation to be completely dependent on railroads. Largely producing wheat, their markets were in the big midwestern cities—Chicago, Kansas City, Minneapolis, and Omaha. This dependency on railroads created resentment, as farmers saw their profits fade, while railroad income seemed to remain strong.

Northern farmers during the 19th century became dependent on other technologies, along with railroads. Various innovations such as McCormick's reaper (1834), the steel plow (1837), and artificial fertilizers (1849) made farming easier and more efficient. Farmers could increase acreage and production with the same amount of labor. However, the farmers did not



Corn harvester in action, 2004 (LIBRARY OF CONGRESS)

benefit as much as they hoped. Overproduction and other factors caused crop prices to fall in the 1880s and 1890s. In addition, many farmers assumed debt to purchase new machinery, and these liens could not be repaid with their everdecreasing income. The initial response of many farmers was to produce still more, but this just compounded the problem, and so they searched for other solutions.

In the Reconstruction South, planters faced the problem of no cash and no labor. Meanwhile, freedmen needed work but had limited skills. Sharecropping was initially seen as a solution mutually beneficial to both groups. Land owners would provide a freed family with land, seed, a house, and mules. The family would farm the land and pay the landlord with a share of the crop. This sharecropping system degenerated over time, as white landlords and shopkeepers took advantage of black illiteracy to reduce them to a state of crop peonage. Poor whites, too, were increasingly trapped in sharecropping, losing their land to the massive cotton plantations that dominated the South far more than they ever had before the war.

Faced with marginalization in an increasingly industrialized society and with declining profits, farmers in both North and South started to organize. Starting with the Patrons of Husbandry, or the Grange, in 1867, farmers came together for socialization, economic well-being through cooperatives, and political leverage. As the century progressed and the farming community did not see economic improvements, these organizations became politicized, culminating with the formation of the People's Party. This partisan organization, aimed to free farmers from the oppression of middlemen, first ran a candidate for the presidency in 1892. In the election of 1896, however, the party found its issues subsumed by the major parties, and, although it continued to exist for 20-some more years, it never had any substantial political clout.

Along with the creation of independent organizations and political parties, farmers in the

second half of the 19th century looked to the federal government to solve their problems. This started in 1862, with the passage of both the Homestead Act and the Morrill Land Grant Act that established a system whereby every state could have its own school devoted to teaching scientific agriculture and mechanical arts. Farm organizations also looked to government on a state and local level to legislate on their behalf. Thus, the 1870s saw the Granger laws, regulating railroad charges and culminating in the 1887 establishment of the INTERSTATE COMMERCE COM-MISSION that regulated railroads on a national level. After the failure of the People's Party, farmers increasingly saw the federal government and its legislation as their only source of protection and promotion.

The new century began well, with some of the best years ever for American agriculture. However, a combination of overproduction, debt, and drought made the 1920s and 1930s difficult years, and many families abandoned agriculture altogether. The New Deal's response to the farm crisis altered national farm policy profoundly, making the federal government ultimately responsible for farm income. Despite this, it took World War II to revive the flagging agricultural economy.

Farmer protests dried up in the early 20th century as good weather and World War I provided an optimum economic situation for agriculture: high production, high demand, and high prices. The situation was so good, in fact, that the period from 1909 to 1914 was seen as the golden age of farming, when the purchasing power of farmers was equal or better than that of other workers. Until 1976, when "parity" became determined by a complex formula of production costs, farmers strove for parity, or the same purchasing power as in the golden age. During this boom, farmers moved on to the northern Great Plains, plowing up the land and producing bumper crops on soils previously deemed barren to meet the seemingly endless demand for agricultural produce. On the flat, treeless plains, machinery, either steam or gasoline driven, was particularly useful.

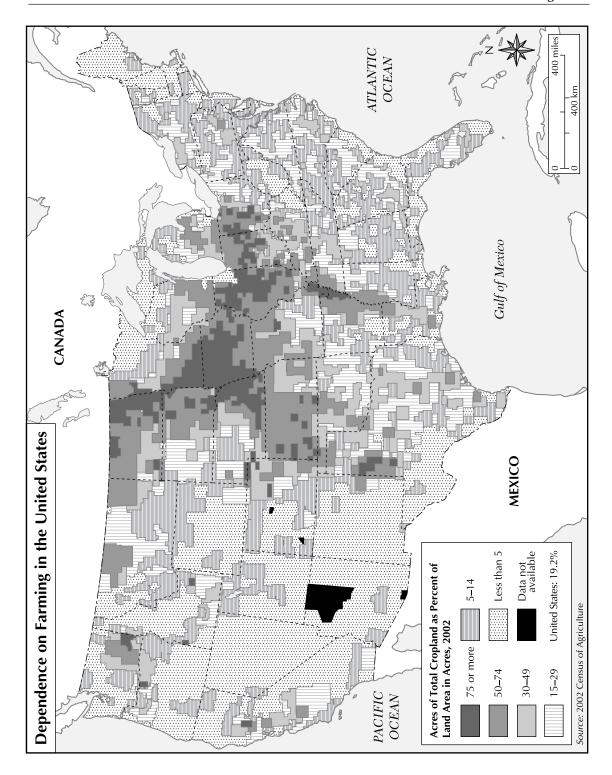
Continued mechanization in the early 20th century reduced the labor needed on farms while increasing the cost of farming. Especially important was the spread of the tractor. These gasolinedriven engines were introduced around the turn of the century and quickly replaced steam-driven machinery. Labor shortages engendered by World War I made tractors even more attractive to farmers, but many stuck to horse or mule power, often out of a preference for the animals. During the 1920s manufacturers developed lighter, cheaper tractors that sped the shift toward mechanical power in agriculture.

Mechanization of agriculture, along with developments in chemical fertilizers, pesticides, and herbicides, reduced the need for labor on farms. Since the advent of the INDUS-TRIAL REVOLUTION in the United States, more and more rural people had migrated to towns, and this migration sped up in the 20th century. By the census of 1920 the United States had officially become an urban nation, with more of its population residing in towns and cities than in rural areas.

The 1920s saw a downturn in agricultural prosperity. Foreshadowing the national depression of the 1930s, the decade saw farm prices plummet after the end of the war. Farmers, in debt for their new machinery and new land, found themselves unable to maintain their prosperity, and foreclosures skyrocketed. Once again farm organizations prospered. From the more conservative Farm Bureau (1919) to the radical Nonpartisan League (1916), these organizations tried to stop foreclosures and force up farm prices. All of them believed in self-help through cooperation among farmers. However, they saw the ultimate solution as political: They believed that the government, either on a state or national level, had to regulate costs and prices to ensure that farmers could maintain a reasonable standard of living. Governments, with the exception of that in North Dakota under the Nonpartisan League until 1921, did not agree until the onset of the Great Depression.

The Crash of 1929 did not greatly affect the farming population, which generally had little money to invest. What did hurt farmers, especially on the Great Plains, was the drought that started in 1931 and lasted most of the decade, and the complete collapse of food prices. Not able to get back the price of production, farmers left crops to rot in the fields or burned them for fuel, while throughout American cities people suffered starvation. Government loans, work programs, and credit arrangements helped the nation's farmers. The main solution devised by the federal government for agriculture, and implemented in 1933 in the form of the Agricultural Adjustment Act, was to reduce farm production and thereby force up prices by paying farmers not to produce. This act, along with the second Agricultural Adjustment Act of 1938, generally benefited farmers in direct proportion to the amount of land that they could not farm. Thus, the larger the land holdings, the greater the government payments. The two main consequences of this were that as less land was being cultivated, sharecroppers and farm laborers were dismissed and displaced, becoming part of the large transient population of the decade and made famous as "Okies"; large landowners received substantial government funds, enabling them to mechanize their operations, thus decreasing still further the need for labor. The onset of World War II finally rescued America from the Great Depression. Large landowners, who had capitalized on the New Deal policies, were well-placed to meet and profit from the increased demand for agricultural produce that the war generated.

The second half of the 20th century, in many ways, continued the trends in agriculture that were established during the previous half century: consolidation, technological influence, and government involvement. However, all of these trends were to reach new heights by the start of the third millennium.



After World War II, large-scale commercial farmers steadily increased their share of the country's agricultural wealth. Continuing to receive more in government subsidies than small-scale farmers, they were able to adopt new machinery, seed, fertilizer, and computers to maximize their production. At the same time, agribusinesses flourished. These large, vertically integrated operations, sometimes owned by farmer cooperatives, as in the case of Crystal Sugar, controlled food production literally from the ground to the store. The main thing that distinguished agribusinesses from the large commercial farms was that the owners of the land not only did not work it, but also did not even have to see it.

With huge amounts of money thrust at agricultural improvements, American farmers and landowners embarked on introducing technology to agriculture with a new, aggressive efficiency. From pumping water from the Ogallala aquifer to aerial spraying of crops with herbicides and pesticides, from hybridizing soft fruits and vegetables to endure the rigors of travel to genetically modifying crops to make them disease and chemical resistant, success in farming became more removed from nature and more dependent on science and technology than ever before. This ensured that American farmlands were more productive than ever, while overproduction and consequent low farm prices continue to be a national problem today. However, an increasing number of people are questioning the validity, sustainability, and healthfulness of such artificial farming. This is reflected in the growing interest, both here and abroad, in organic farming and in rescuing traditional, heritage varieties of plants and animals from extinction.

The federal government continued and increased its support of agriculture. Having made the decision to subsidize food production in the nation rather than letting prices find their own, perhaps much higher levels, the government consistently responded to the farm lobby by providing payments for everything from set-aside land to price supports on commodities. Additional subsidies are often hidden in the form of large grants to agricultural research designed to increase the production that is already keeping prices low.

Farmer organizations remained active in the postwar period, although, as the average farm size grew, they split into two camps. On the one hand, a number of farm workers' unions emerged, trying to improve the status of the laborer in the field. The most colorful, famous, and successful of these was the United Farm Workers of America led by Cesar Chavez. Active in the 1960s and 1970s, the organization did achieve some benefits for its migrant members, but these were paltry in comparison with continued company profits. On the other hand, commercial farmers have had considerable success with their farm lobby in maintaining government price supports and the imbalance in favor of larger landowners.

Finally, the late 20th century saw a globalization of agriculture on a tremendous scale. Increasingly, farmland in America, as well as elsewhere, is held by multinational companies. This facilitates the flow of money and sometimes disease around the world, but does not seem to have had much of an impact on the movement of food from regions of plenty to areas of scarcity.

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Claire Strom

Federal Communications Commission (FCC) A federal agency created by Congress in the Federal Communications Act of 1934 to regulate the communications industry. At the time, the FCC assumed regulatory authority for broadcasting, TELEGRAPH, and telephone services. Originally, the commission consisted of seven commissioners, appointed by the president. In 1982, the number was reduced to five. Its main objective was to ensure communications at reasonable prices to the public.

The FCC is empowered to grant broadcasting licenses. During the 1940s, it also began insisting that stations to which it granted licenses also begin introducing public service programming. Over the years, the FCC helped AT&T maintain its effective monopoly over the telephone industry, a monopoly established in 1921 with the Willis-Graham bill, which allowed AT&T to purchase rival exchanges. Originally, AT&T was aided when the commission refused to entertain licenses from smaller companies that wanted to break into the telephone business. Eventually, the FCC began entertaining complaints from potential telephone competitors, and AT&T's monopoly was officially broken in 1982 in a landmark agreement with the Justice Department. The FCC also took a similar stance in the TELEVISION INDUSTRY, which helped the large networks maintain their dominance over the industry at the expense of smaller stations until the advent of cable television in the 1970s.

The agency's basic powers include approving rate increases for interstate telephone and telegraph services, assigning new frequencies for radio and television, and issuing licenses to station operators. More recently, it also assumed regulatory authority over satellite communications. In addition to radio, TV, telegraph, and cable TV, the agency also has authority over transmitters that are used by police and fire departments and the national medical emergency service. Its administration of the various services has not always been consistent over its 70-year history, but the FCC remains the chief regulator of communications in the country. It often responds to trends in the communications industry by passing rules addressing communications issues of the moment, such as the level of competitiveness within the broadcast industry and matters of public taste.

Often, its position on communications issues, especially concerning competition within the communications industry, can have farreaching ANTITRUST and trade ramifications. Its decisions may be overridden by Congress in special circumstances.

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Federal Deposit Insurance Corporation (**FDIC**) An agency created by Congress to provide insurance against customer deposits at banks and other banking institutions. The concept of deposit insurance was introduced during the banking crisis of 1932 as a means of attracting customers back to banks, from which they had been withdrawing their money. The "money hoard" exemplified the loss of confidence by the public in the banking system and also was reducing credit creation by banks at a particularly vulnerable time during the Great Depression. Although the concept was not universally popular, it was seen as a measure that could help restore confidence in the banking system.

There had been more than a dozen experiments with deposit insurance within the states prior to the creation of the FDIC, several of

which were mandatory and the rest voluntary. Federal deposit insurance was provided by the BANKING ACT OF 1933. The law created the FDIC, a private government-sponsored agency that provided insurance for deposits at member banks for a maximum of \$2,500 per account. The amount was raised to \$5,000 a year later, \$10,000 in the 1950s, and \$20,000 in 1969. All banks that were members of the FEDERAL RESERVE were required to join, and state banks had the option to join. Premiums were charged to member banks, and these funds provided the money needed to insure deposits at failed banks. A similar fund called the Federal Savings & Loan Insurance Corp. (FSLIC) was created in 1934 to provide similar insurance to savings institutions not technically classified as commercial banks.

Insurance was increased to \$100,000 per account by the DEPOSITORY INSTITUTIONS DEREGU-LATION AND MONETARY CONTROL ACT (DIDMCA) in 1980. In the late 1980s, a banking crisis forced a reform of the FDIC, and the Federal Deposit Insurance Corporation Improvement Act (FDI-CIA) was passed in 1991. The act provided more stringent requirements concerning bank capital, calculated the insurance premium on the banks' risk activities, and gave the FDIC the right to borrow from the U.S. Treasury to cover bank failures in the event that the Bank Insurance Fund became depleted. Today, the Bank Insurance Fund, the actual fund itself, technically covers the bailout of a failed member.

The thrift crisis of the 1980s also caused the failure of the FSLIC, which was dissolved in 1989 by the FINANCIAL INSTITUTIONS REFORM, RECOVERY AND ENFORCEMENT ACT (FIRREA). The thrifts' fund became the Savings Association Insurance Fund, administered along with the bank fund by the FDIC. It too charges premiums to its members so that it can provide assistance to failing thrift institutions if required.

The amount of premiums charged to participating banks in deposit insurance funds has always been contentious, with many larger banks claiming that they were being penalized for the mismanagement of smaller banks that required assistance. In the largest bailout ever provided by the FDIC, that of the Continental Illinois Bank in 1984, the amount of insured deposits at the bank was greater than the fund's ability to guarantee all deposits, so a special bailout arrangement with other large banks had to be arranged to provide cash to depositors if requested.

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Federal Home Loan Bank Board (FHLBB)

Founded in 1932 during the Hoover administration, the FHLBB was the first federal agency designed to oversee SAVINGS AND LOANS institutions (S&Ls). Following the pattern of the FED-ERAL RESERVE, founded in 1913, the FHLBB was created to supply credit to the S&Ls on a nationwide basis. During the early years of the Depression, the health of the S&Ls was critical to the economy since they were the major providers of home mortgages.

The Federal Home Loan Bank Act created 12 Federal Home Loan Banks around the country. The individual banks raised the cash they needed initially by selling stock to the S&Ls in their districts, enabling those that did so to call themselves federally chartered. The districts were similar to those of the Federal Reserve, but the geographical lines were somewhat different. Shortly thereafter, Congress created two federal agencies designed to provide assistance to the mortgage market: the Home Owner's Loan Association in 1933 and the Federal Housing Administration in 1934. Both institutions were designed to further assist the residential housing market and, when combined with the credit supplying ability of the FHLBB, helped stabilize the residential housing sector throughout the 1930s.

The FHLBB was authorized to fund itself by borrowing in the bond markets. Its activities were aided by the creation of the Federal Home Loan Mortgage Corporation, or Freddie Mac, created by Congress in 1970 as a federal agency designed to purchase approved mortgage loans from thrift institutions, helping to create more liquidity among the thrifts. Despite the assistance provided, in the 1980s problems began to appear among the S&Ls due to high interest rates and net withdrawals by customers while interest rates were still regulated.

Despite the DEPOSITORY INSTITUTIONS ACT passed in 1982, the problem was only temporarily remedied, and the industry again suffered a serious crisis in 1988-89. Many junk bond investments made by the S&Ls as a result of the 1982 act declined in value, and many commercial real estate ventures, also authorized by the act, also went bad, forcing the S&Ls to write off many assets. As a result of the inability of the board to effectively monitor the mortgage-granting banks, Congress passed the FINANCIAL INSTITU-TIONS REFORM, RECOVERY AND ENFORCEMENT ACT in 1989 in order to bail out the thrift industry. The act created the Office of Thrift Supervision (OTS), which assumed the regulatory powers of the FHLBB. Congress also passed the FINANCIAL SERVICES MODERNIZATION ACT 10 years later, reforming the structure of the banking system. As part of that legislative package, the Federal Home Loan Bank System Modernization Act reorganized the system again.

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Federal National Mortgage Association (**FNMA**) Better known as Fannie Mae, the FNMA was created by an act of Congress in 1938 in order to further stabilize the market for residential mortgages during the Great Depression. The association was created as a wholly owned federal agency dedicated to purchasing federally guaranteed mortgages from lenders. As a result, the lenders would be free to loan more mortgages to potential homeowners.

Fannie Mae performs a wholesale function in the market. Originally, it was designed to buy mortgages guaranteed by the Federal Housing Administration and, later, veterans' mortgages. During World War II, its functions were somewhat limited, but it began to increase its activities during the housing boom following the war. The agency was substantially revamped in 1954, when a housing act passed Congress. Although owned by the U.S. Treasury, Fannie Mae raised substantial funds on the bond markets, its traditional source of long-term funds.

The agency was privatized in 1968, when Congress passed the Housing and Urban Development Act. A new government agency was created at the same time—the Government National Mortgage Association, or Ginnie Mae. After this time, Fannie Mae operated as a private company, and its stock eventually was listed on the NEW YORK STOCK EXCHANGE. It expanded the scope of its operations, adding new mortgages to the list of qualified obligations it could purchase from lenders. Its function began to shift to the secondary market, while Ginnie Mae continued to buy guaranteed mortgages from lenders.

Fannie Mae also helped develop different types of mortgage-backed bonds that have come to dominate the mortgage market. Since its privatization, it has become known as a GOVERNMENT-SPONSORED ENTERPRISE, or GSE—an agency originally founded by Congress and subsequently privatized but still bearing what is known as the implicit guarantee of the Treasury. In other words, if the agency should fail, the government ultimately would be forced to guarantee Fannie Mae's obligations to its investors.

Fannie Mae's activities dominate the residential mortgage market along with those of its smaller counterpart, the Federal Home Loan Mortgage Corporation, or Freddie Mac. Between them, they purchase about 60 percent of all new residential mortgages created. They have also become two of the largest users of interest rate derivatives among financial institutions. In 2003, the agency had to restate its earnings from previous years under criticism from Congress and accounting regulators.

While the value of the implicit guarantee has been widely debated, the agency remains one of the two largest guarantors and traders of mortgages, at times holding as much as 40 percent of all conforming residential mortgages.

See also Federal Home LOAN BANK BOARD.

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Federal Reserve In 1913, Congress passed the Federal Reserve Act, creating the Federal Reserve System (Fed) in response to several banking panics in the late 1800s and early 1900s. Its main purpose was to act as a lender of last resort, or supplier of liquidity when banks faced temporary financial problems. Since the early 1900s the role of the Fed in the U.S. economy has grown to one of chief economic watchdog.

There are three main parts of the Federal Reserve System: the board of governors in Washington, D.C., 12 regional Federal Reserve banks, and the Federal Open Market Committee (FOMC). The board of governors is made up of seven individuals nominated by the president and confirmed by the Senate to formulate monetary policy, supervise and regulate member banks, and oversee the smooth functioning of the payment system in the economy.

The most powerful member of the board of governors is the chairman. The 12 regional banks act as the operating branches of the Fed. They can be thought of as a banker's bank, managing reserve accounts and currency levels in their regions.

The most well-known part of the Fed is the FOMC. The FOMC meets regularly during the year to set monetary policy. The board of governors and five of the 12 regional bank presidents make up the voting members of the FOMC. The FOMC meetings have became some of the most watched and anticipated events by financial markets. At each meeting, the FOMC now sets a target for the federal funds rate, a key overnight interest rate that affects the cost of borrowing throughout the economy. For this reason, financial market participants closely scrutinize the motives of the FOMC.

There are several key moments in the history of the Fed. Prior to 1929, the Federal Reserve had no clear notion of its role in responding to cyclical forces. This resulted in a policy that allowed the money supply to contract dramatically over the first few years of the Great Depression. After the election of President Roosevelt in 1932, the Federal Reserve System was reorganized to resemble the structure we observe today. The Eccles Act was passed in 1935, enlarging some of the powers of the Fed and giving it greater control over the system of 12 branch banks.

During World War II, the Fed pegged interest rates, lasting until the end of the Korean War, in order to manage the wartime economy. Banks were also allowed to hold TREASURY BONDS in exchange for a relaxation of reserve requirements. During the 1940s, the Federal Reserve moved from keeping Treasury borrowing costs low toward seeking to achieve full employment. The latter of these goals was in response to the Employment Act of 1946, which set as a responsibility of the federal government the stabilization of employment at near-full employment levels. These goals of low borrowing costs and stable employment at near-full employment levels sometimes clashed, until March 1951, when an "Accord" was reached between the Treasury and the Federal Reserve System in which the Fed could actively and independently set monetary policy.

The 1950s and 1960s were an era of relatively good economic outcomes for the U.S. economy. During the 1950s, the Fed developed open market operations (the buying and selling of U.S. government securities on the open market) as the main policy tool used to affect interest rates. The next major challenge for the Federal Reserve was the "Great Inflation" of the 1970s. The inflation rate in the United States rose to 12.5 percent in 1974 and was 11 percent in 1980.

In 1979, in response to the spiraling inflation rate, Federal Reserve chairman Paul VOLCKER instituted an era of "tight money" in which the growth rate of the money supply was reduced.

This policy was intended to slow the growth of output and reduce the inflation rate. It succeeded very well. In the early 1980s, the United States suffered a severe RECESSION that many economists credit (or blame) the Federal Reserve for creating. By 1984, inflation was less than 4 percent.

The final years of Paul Volcker's term as chairman and the appointment of Alan Greenspan to replace him in 1987 mark the beginning of a very successful period of monetary policy. The main goal of inflation stability initiated during the 1979 monetary policy tightening resulted in historically high interest rates until 1984 but has since been reinforced with the additional goal of stabilizing the growth of output.

Currently the Federal Reserve actively uses open market operations as its main tool in meeting its goals. Also at the disposal of monetary policy makers are two additional tools: the discount rate (the rate at which banks can borrow from the Federal Reserve) and the required reserve ratio (the proportion of bank deposits that must be held as reserve against possible withdrawals). By far the most often used tool is open market operations. In accordance to directions given by the FOMC, the Federal Reserve Bank of New York actively enters the market for U.S. government securities as a buyer or seller in an effort to influence the level of interest rates.

The main target of the Federal Reserve is the federal funds rate, an overnight rate directly affected by open market operations. The New York bank either buys or sells securities to move the Federal Funds rate to the target level set by the FOMC. The power of monetary policy is then transmitted to the economy by the changes in interest rates. An increase (or decrease) in interest rates reduces (increases) the level of consumer and business expenditures that require borrowing. This in turn decreases (increases) the level of output in the economy, reducing (increasing) pressure on prices to rise (fall).

The FOMC sets the target Federal Funds rate in accordance with its feelings as to the direction of the U.S. economy. If the FOMC believes inflation is on the upswing, it will raise interest rates to slow the economy. If it believes unemployment is too high (reducing pressure on inflation), it will lower interest rates to increase economic activity. For this reason, financial market participants pay very close attention to economic activity to gain some insight into the future actions of the Federal Reserve in setting interest rates. The Fed also acts as agent for the U.S. Treasury in the marketplace. It intervenes in the FOREIGN EXCHANGE MARKET when requested and also auctions Treasury securities for the government.

The Federal Reserve has a long history of intervening in the U.S. economy. From overseeing a dramatic decrease in the money supply during the early years of the Great Depression, to participating in producing monetary growth rates that allowed the Great Inflation to continue, to engineering a dramatic recession to lower inflation rates in the early 1980s, the Federal Reserve has been instrumental in the evolution of economic activity in the United States. Much of the expertise used by the Federal Reserve has been developed over its long history. This has culminated in perhaps the greatest period of economic expansion in U.S. history. From 1983 to 2000, gross domestic product grew steadily with only a slight interruption in the early 1990s, and inflation steadily fell.

See also commercial banking; Eccles, Marriner S.

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Steve Perez

Federal Trade Commission (FTC) The Federal Trade Commission Act of 1914 established the Federal Trade Commission (FTC). Originally part of Woodrow Wilson's effort to "bust the trusts," the FTC is an independent government agency responsible for ensuring free and fair competition in the economy and protecting consumers from unfair or misleading practices.

The FTC is composed of five members. These members are appointed to seven-year terms by the president, subject to Senate approval, and report directly to Congress. The president chooses one commissioner to act as chairman. No more than three members can be of the same political party, thus ensuring the commission's bipartisanship. Over the years, the FTC has become increasingly involved in ANTITRUST enforcement. Since 1914, Congress has given the FTC increasingly greater authority to police anticompetitive practices by passing additional laws. Originally, the SECURITIES ACT OF 1933 required the registration of securities with the FTC before the FTC was created. Today, the FTC enforces federal antitrust and consumer protection laws, maintains truth in advertising, and enforces consumer protection laws that prevent fraud, deception, and unfair business practices.

The FTC works to prevent unfair and anticompetitive business practices by enforcing federal antitrust laws. It does so by preventing unlawful business practices such as those prohibited by the Clayton Antitrust Act, including certain MERGERS and other practices that have the potential to inhibit competition. In the post-World War II years, the FTC and the Antitrust Division of the Department of Justice both brought antitrust actions. While the Antitrust Division investigates and prosecutes businesses that violate antitrust regulations, the FTC has the power to order a company to stop unfair competition methods. In the 1990s especially, several notable antitrust cases were brought by the FTC, including an action against Intel and intense scrutiny of the McDonnell Douglas-Boeing merger.

The FTC also enforces federal consumer protection laws. It does so by investigating complaints initiated by individual consumers, businesses, and reports in the media. The FTC and the Consumer Product Safety Commission are the government agencies chiefly responsible for enforcing these consumer protection laws. However, it is not only large companies that have come under scrutiny by consumer advocates. In the 1960s, the FTC itself also came under heavy criticism for its alleged indifferent approach to antitrust action during the conglomerate era. During this era many large companies looked to mergers as a way of diversifying their bases and maintaining their markets in the face of rising costs. However, this activity quickly swamped the Antitrust Division and the FTC. The result was that only the biggest cases with the most potential impact were pursued. Beginning in the 1970s there was a considerable reduction in the number of antitrust cases being brought by the Department of Justice and the FTC. In 1976, Congress passed the Hart-Scott-Rodino Act, requiring companies desiring to merge to file notification so that the FTC and the Justice Department have time to review the consequences of the proposed corporate marriage.

Another important facet of consumerismadvertising-is also regulated by the FTC. It monitors advertising, and if it determines an ad to be false or misleading, the commission has the power to impose fines and order corrective advertising or withdrawal. Along with the Federal Drug Administration, the FTC regulates labeling and packaging of consumer products. When a consumer refers to care labels in clothes, product warranties, or performance claims for computers and other high-tech products, that consumer is consulting information required by the FTC. In addition, the commission's Division of Financial Practices enforces many of the nation's other consumer credit statutes, including the Truth in Lending Act, which requires creditors to disclose in writing certain information such as the annual percentage rate, and the Consumer Leasing Act, requiring lessors to disclose certain information to their potential customers. Since it was established, the commission has been empowered to administer a variety of other consumer protection laws, including the Equal Credit Opportunity Act and the Telemarketing Sales Rule.

Although given power to regulate the nation's businesses, it is important to note that the FTC has no authority over common carriers and banks, which are supervised separately. The FEDERAL RESERVE and INTERSTATE COMMERCE COMMISSION (now the Surface Transportation Board) traditionally had jurisdiction over those two respective areas. In 2003, the FTC established the National Do Not Call Registry, which requires most telemarketers to remove the listed numbers in order to limit the number of unwanted telemarketing calls.

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Margaret A. Geisst

Field, Cyrus W. (1819–1892) *businessman* Born in Stockbridge, Massachusetts, Field was the son of a prominent Congregational clergyman. His family had lived in New England since 1629, and several other members also distinguished themselves. An older brother, Stephen J. Field, became a member of the U.S. Supreme Court, and another, David Dudley Field, was well known as a jurist and legal reformer. Cyrus did not receive a college education, however, and left home at age 15 to travel to New York to become a clerk in a dry goods store.

Several years later he returned to Massachusetts and entered the paper business, but the firm he joined failed. He reorganized it, within nine years accumulated a personal fortune of more than \$250,000, and then retired at age 34. After trips to Europe and South America, he became interested in the idea of a transatlantic cable that could carry messages between the United States and Europe. He wanted a cable capable of transmitting Samuel F. B. MORSE's telegraph messages from New York to London and beyond. He organized a company for the purpose of laying cable across the North Atlantic and obtained permission to use two naval ships, one British and the other American, to lay the cable. Field raised the money necessary for the project in London, while the American company formed to promote the project included several wealthy New Yorkers, among them Peter COOPER.

The first attempt at laying cable failed in 1857, breaking some 400 miles from America's shore. Another attempt the following year also failed. In the summer of 1858, Field was successful in laying cable between Newfoundland and



Allegorical scene showing the lion of Great Britain holding one end of the Atlantic cable and the eagle of the United States holding the other end. Includes a portrait of Cyrus Field at top center. (LIBRARY OF CONGRESS)

Ireland. The first transcontinental telegraph message was sent by Queen Victoria to President James Buchanan, and the feat was lauded on both sides of the Atlantic, although the cable broke a month later. Because of these failures, Field had to find new financing for the project. In 1866, the *Great Eastern* finally succeeded in laying a full transatlantic cable, with repairs to the existing cables, and Field, who was once derided as something of a madman, became universally admired for the scope and technical difficulty of the project.

Field also sponsored other projects, such as a cable between Hawaii and Australia, but the project never materialized successfully. He also helped revive and promote the New York City elevated railway system. During the latter part of his career, he was a partner of Jay GOULD in the Wabash Railroad and was also the principal owner of the *Mail & Express*, a New York newspaper. In 1887, he became bankrupt after a battle with Gould for control of the Manhattan Railroad. He died five years later, spending his last years in Stockbridge, Massachusetts.

The cable remained his most notable achievement, however, and it opened a new era of commerce between the United States, Britain, and the rest of Europe. The new form of communications aided the commodities markets and the securities markets especially and promoted investment in the United States as well as speculation in American stocks, bonds, and futures contracts.

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Field, Marshall (1834–1906) merchant Marshall Field was born near Conway, Massachusetts, on August 18, 1834, the son of small farmers. At 17 he began clerking in a local dry goods store and gained a reputation for hard work and courtesy. In 1856, the ambitious young Field relocated to Chicago, Illinois, where he soon found employment with the retail firm of Cooley, Wadsworth, and Company, the city's largest dry goods operation. He again distinguished himself by his business acumen, and by 1860, he functioned as a junior partner. In 1862, when Field rose to full partner, the company was renamed Farwell, Field, and Company. Three years later, Field bought out his partner and joined forces with Potter Palmer and Levi Z. Leitner to found the new dry goods firm of Field, Palmer, and Leitner. With competent direction, the company flourished and posted sales of \$8 million by 1867. At that time Field and Leitner bought out Palmer, renamed their firm after themselves, and continued to achieve great prosperity. Disaster struck during the Great Chicago Fire of 1871 and again in a second conflagration of 1877, but Field rebuilt his firm at new locations and continued flourishing. Throughout the 1880s, he was largely responsible for its impressive success, and in 1881 Leitner was finally bought out. The new establishment, renamed Marshall Field and Company, had yet to achieve its pinnacle of success.

During his tenure as company head, Field pioneered many business practices that were innovative and revolutionary in their day. He was one of the first American retailers to purchase high-quality goods from both domestic and foreign sources, and in 1871, he opened his first buying office in England. From a consumer standpoint, he introduced the practice of selling goods at a marked price, proffered generous credit, and initiated the policy of offering customers full refunds for returned merchandise. He was also quite possibly the first merchant to recognize the growing purchasing power of women and established company policies to win and keep their loyalty. Employees were instructed to be prompt and courteous, and the store was usually stocked full of high-quality yet moderately priced shawls, furs, perfumes, and other items of interest to female buyers. Fields was also quite adept at consumer psychology. He erected an immense store that ultimately covered 36 acres of Chicago's city center and opulently stocked it with exotic goods, but then included such amenities as a bargain basement and a tea room. It became the largest retail operation in the world and was highly successful. He also pioneered the practice of buying goods in volume and creating a demand for them at a later date, which forced potential competitors to buy and subsequently offer the same objects at higher prices. He further manufactured goods at his own factories and sold them only through his own outlets. Field proved so adept at promoting customer satisfaction and retaining customer loyalty that by the turn of the century he was among the 10 wealthiest Americans. In 1906 alone, his annual sales brought in \$86 million.

For all his success, Field himself was something of a quiet, elusive individual, rather flinty in outlook and not given to ostentatious display. He invariably worked long hours, spent money frugally, and declined to participate in social activities usually associated with the upper classes. Field was nonetheless quite generous in terms of philanthropy and indelibly altered the cultural and intellectual landscape of Chicago by subsidizing several of its most famous landmarks. These included the University of Chicago, the Academy of Fine Arts, and the Field Museum of Natural History. When he died of pneumonia on January 16, 1906, Field left behind an estate valued at \$150 million. His legacy continues in the family owned Marshal Field stores that have survived in the Midwest and Texas. More important, his twin pillars of quality goods and customer satisfaction have become the lynchpin of the retail business everywhere.

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John C. Fredriksen

Financial Accounting Standards Board (**FASB**) The organization in the private sector that sets standards of financial accounting and reporting in the United States. The FASB establishes GENERALLY ACCEPTED ACCOUNTING PRINCIPLES (GAAP), which govern the preparation of financial reports. Accounting standards are necessary for the efficient functioning of the economy. Financial reports based on accounting standards help investors, lenders, and the public efficiently to make decisions on allocating their resources to business organizations.

The FASB receives its authority to set accounting standards from the U.S. Securities and Exchange Commission (SEC). The SECURITIES EXCHANGE ACT OF 1934 gives the SEC statutory authority to establish financial accounting and reporting standards for publicly held companies. In 1938, the SEC adopted a policy of relying on existing accounting principles with significant authoritative support in the private sector, in Accounting Series Release No. 4. This action effectively shifted authority to the American Institute of Certified Public Accountants (AICPA), through its Committee on Accounting Procedure (CAP, 1936–59) and its Accounting Principles Board (APB, 1959–73). The FASB was founded in 1972 and began operations in 1973 to provide an equal opportunity for all interested groups to participate in the standards-setting process. In contrast, independent auditors dominated its two predecessors.

The FASB is the operating arm of a three-part organizational structure that also includes the Financial Accounting Foundation (FAF) and the Financial Accounting Standards Advisory Council (FASAC). The FAF is the nonprofit parent organization, administered by 16 trustees with an executive vice president. Its trustees raise funds for the FASB but do not advise it. The FAF trustees appoint members of the FASB and the FASAC. The FASAC advises the FASB on the priorities of accounting issues and the suitability of its tentative resolutions. The FASAC has a minimum of 20 members, which includes financial statement users, auditors, preparers, and the public.

The FASB has seven board members who work full time to resolve financial accounting issues, communicate with constituents, and serve as a focal point for research. Members preserve their independence as standard setters by severing ties with their previous employers. They are appointed to a five-year term, with the possibility of reappointment for a second term. The FAF attempts to appoint knowledgeable board members from diverse accounting backgrounds to represent its various constituents. In February 2001, three board members were auditors, two were corporate financial officers, one was a securities analyst, and one an academic immediately before their appointments to the FASB. The FASB has a research and technical activities staff to support its members.

To establish generally accepted accounting principles (GAAP), the FASB first endorsed the standards of its predecessors, the CAP Accounting Research Bulletins and the APB Opinions. It has continued to establish GAAP through three types of pronouncement: statements of financial accounting standards (SFAS), interpretations, and technical bulletins. The board follows an orderly public process before issuing any pronouncement. Due process includes preliminary evaluation of the problem, admission of the problem to the FASB agenda, early deliberations, tentative resolution, further deliberations, and final resolutions. Statements of financial accounting standards consist of principles at the highest level, approved by a two-thirds majority of board members. As of February 2001, the FASB issued 140 SFAS, although many amend previous standards or delay implementation of new standards. The board issued 44 interpretations by February 2001 to explain, clarify, or expand on an existing SFAS, an APB opinion, or a CAP accounting research bulletin. The research and technical activities staff of the FASB issued 50 technical bulletins through February 2001 to address less controversial and pervasive problems. In addition, the FASB has issued seven general statements of financial accounting concepts as a framework to guide its standard setting, to help practicing accountants, and to educate nonaccountants.

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Mary Michel

Financial Institutions Reform, Recovery and Enforcement Act (FIRREA) Better known by its short name, the FIRREA was enacted on August 9, 1989—one of the most significant laws to affect the savings and loan industry since the 1930s. The industry had been devastated by high interest rates in the early 1980s and by deterioration in asset quality in the middle to late 1980s. The major impetus behind FIRREA was to provide funds to resolve failed SAVINGS AND LOANS. But it also fundamentally changed the regulatory structure of the industry and reversed the trend toward liberalizing the powers of institutions.

FIRREA dissolved the Federal Savings and Loan Insurance Corp. (FSLIC), making the FED-ERAL DEPOSIT INSURANCE CORPORATION (FDIC) the administrator of two separate insurance funds: the Savings Association Insurance Fund (SAIF), which replaced the FSLIC, and the Bank Insurance Fund (BIF). The independent FEDERAL HOME LOAN BANK BOARD (FHLBB) was replaced by the Office of Thrift Supervision (OTS), a bureau within the Treasury Department, as the regulator of savings and loans.

FIRREA established the RESOLUTION TRUST CORPORATION (RTC) to resolve failed savings and loans with funding provided primarily by taxpayers. The RTC was charged with selling assets of failed thrifts to the private sector, many sales occurring at a substantial loss from book value. To replenish SAIF, deposit insurance premiums were raised. The type and extent of activities in which savings and loans could engage was restricted, reversing federal and state legislation of the early 1980s. State-chartered institutions were restricted to those activities permitted to federally chartered institutions. Savings and loans were prohibited from purchasing JUNK BONDS and had to divest themselves of any such holdings. Commercial real estate loans were significantly restricted, as were loans to one borrower. Savings and loans were also required to hold at least 70 percent-up from 60 percent-of their assets primarily in housing-related investments.

FIRREA strengthened capital requirements for savings and loans in three regards. First, tangible capital was to be at least 1.5 percent of assets. Second, a core capital ratio of 3 percent was required. Third, an institution's capital requirement was to be based on the risk of its portfolio.

FIRREA also substantially enhanced the enforcement powers of savings and loan regulators. They were authorized to restrict the asset growth of institutions and to order institutions to stop engaging in specific activities. Regulators were given the power to remove individuals from savings and loans for cause and to impose an industry-wide ban on their employment. Civil money penalties could also be imposed of up to \$1 million a day.

FIRREA enhanced the environment in which savings and loans operated by facilitating the removal of failed institutions. However, restrictions mandating that savings and loans be more specialized home mortgage lenders impaired their ability to diversify and to participate in potentially profitable activities. The new capital requirements, moreover, were a continuation of the practice of relying and acting on the basis of accounting measures of capital rather than on market measures. Nonetheless, FIRREA has continued to have a lasting affect on the shrinking savings and loans industry.

See also DEPOSITORY INSTITUTIONS ACT.

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James R. Barth

Financial Services Modernization Act (1999) Also known as the Gramm-Leach-Bliley Act; legislation passed in late 1999 reforming the

structure of American banking. Since the late 1980s, the FEDERAL RESERVE had allowed commercial banks greater leeway in such previously proscribed activities as INVESTMENT BANKING and insurance underwriting. The Fed did so under the authority of the BANK HOLDING COMPANY ACT, the law that gave it the authority to govern a bank holding company's activities. But the Fed's ability to liberalize a bank's activities fell short of allowing a complete return to investment banking and insurance.

Commercial banks had been pressing Congress for years to abolish the BANKING ACT OF 1933 (Glass-Steagall Act). They argued that the securities business was a natural complement to their overall banking activities and that being able to deal and underwrite securities was vital to their health in an increasingly global economic environment. As a result, the 1999 act repealed the existing limitations on a bank's ability to own or merge with securities firms and insurance companies. It also created a new form of HOLDING COMPANY called the financial holding company. Subsidiaries of this new holding company that did not engage in banking would be able to engage in securities and insurance underwriting.

Banks possessing a federal charter can also engage in the same activities but must do so in financial subsidiaries, allowing them to do virtually the same activities as a bank holding company. These provisions allow banks to engage in activities not permitted since the 1930s, but the old separation of securities and banking activities within the same unit of the bank is still followed.

In addition, the act provided for fuller disclosure of ATM fees and use of plain language from federal banking regulators, beginning in 2000. Another law affected by the new bill, the COMMU-NITY REINVESTMENT ACT of 1977, was protected under the new law, which did change procedures in how the banks were to be examined under the 1999 act in the future. The net effect of the organizational part of the bill was to allow banks to create financial supermarkets—financial institutions where all sorts of financial services could be found under one roof.

The law was passed after CITIBANK agreed to be acquired by the Traveler's Group, an insurance company. Under the existing banking laws, the merger would not have been allowed, but the Federal Reserve Board permitted the merger provided that certain conditions were met. As part of the merger deal, the new Citigroup was given two years to comply with the existing banking laws. But within a year, the new law was passed, allowing the merger to stand. The new banking law allowed American banks to behave more like European banks by owning other types of financial service companies without serious restriction.

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Fisk, James, Jr. (Jim) (1834–1872) *businessman and speculator* Born in Bennington, Vermont, to a YANKEE PEDDLER, Fisk quit school at 12 and joined his father in selling wares from his wagon around New England. After buying his father's business, he enjoyed great success and was soon hired by a dry goods firm with which he had done business. His first great success as a wholesaler of dry goods came when the Civil War began, and he sold various dry goods to the U.S. Army from a base he established in Washington, D.C. He was so successful that he was made a partner.

After spending most of the Civil War buying dry goods for his firm, Fisk sold his partnership back to the firm and, with the money he made, ventured to Wall Street. He became a protégé of the noted speculator Daniel DREW, who helped him establish a brokerage called Fisk, Belden & Co. Through his Wall Street connections, he became acquainted with Jay GOULD, and the two obtained seats on the board of the ERIE RAILROAD. While sitting on its board, they became involved in what became known as the Erie Wars, fighting Cornelius VANDERBILT for control of the line. Along with Drew and Gould, he personally seized 50,000 shares of Erie stock and fled with his two compatriots to Jersey City, New Jersey, to avoid Vanderbilt. Emerging victorious, they ran the railroad in lavish fashion from its New York headquarters. The operations made him a wealthy man, and he spent his money amply. Fisk bought Pike's Opera House in New York City, refurbished it, and threw lavish productions until the costs eventually caused him to stop funding the operation.

Fisk also gained notoriety when he participated in the gold corner with Jay Gould in 1869, when they were suspected of forcing up the price of gold to unsustainable heights with the purported and unwitting support of President Ulysses Grant. The corner created what became known as Black Friday in 1869 and led to a depressed stock market and a subsequent RECESSION that hit New York City especially hard. Combined with his relationships with Tammany Hall leaders, the gold corner made him, like Gould, one of the most despised men of the era. But his flamboyant manner also endeared him to many New Yorkers. He ran the largest steamboat on the Hudson River, aptly named the James Fisk.

Fisk met an untimely end when he was shot by a suitor of his mistress at New York's Grand Central Hotel in 1872. He died the day after the shooting. He was widely mourned in New York City and remains one of the period's most colorful characters.

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Flagler, Henry M. (1830–1913) *oil executive* Born in Canandaigua, New York, to a Presbyterian minister of modest means, Flagler attended local schools until he was 14. Leaving home while still in his teens, he traveled to Sandusky, Ohio, where he became a grain merchant. He established a business, and one of his clients was John D. ROCKEFELLER, who was then in the produce business. After switching to the salt business, he lost most of his money and had to start over again in the grain business in Cleveland.

Flagler joined forces with Rockefeller in the firm of Rockefeller, Andrews, and Flagler in Cleveland in 1867. The new firm was not a grain firm but one that produced oil, a new commodity showing much promise. Three years later, the firm was incorporated as the Standard Oil Company. Throughout the 1870s, Flagler and Rockefeller split duties at the company, with Rockefeller handling personnel and logistics while Flagler concentrated on legal matters. He also negotiated the rates railroads charged for shipping oil and oil products, often striking advantageous deals for the new company.

As the public outcry against large corporations grew louder in the 1880s, Flagler developed the first trust agreement for the company and in 1882 designed the Standard Oil Trust, which proved to be a revolutionary industrial organization. Under the agreement, Flagler, Rockefeller, and Andrews effectively held the stock of the company in trust for other shareholders, keeping control of Standard Oil while still proclaiming it to be a public company. The agreement served its purpose well, for it was another 30 years before Standard Oil was ordered broken up by a Supreme Court decision.

His interests after 1880 are those for which he is best remembered. Flagler began developing an interest in railroads and in land development in Florida. He developed the first railroad line to serve the east coast of Florida—the Florida East Coast Railroad—stretching from Daytona to Miami, and also built luxury hotels along the line to serve passengers. The rail line was extended to Key West in 1912 despite significant technical difficulties. The various projects helped contribute significantly to the state's rapid development in the 20th century as the country's premier resort area.

Flagler also developed land in south Florida. His companies dredged the Miami harbor, and he also established steamship companies connecting Florida to the Bahamas as well as to Key West. Among the hotels he developed, the Breakers in Palm Beach is perhaps the best known. The area around St. Augustine also benefited from his business activities, while Flagler College in that city enjoyed his family's largesse over the years.

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Forbes, Malcolm (1919–1990) publisher Malcolm Stevenson Forbes was born in New York City on August 19, 1919, the son of Scottish emigre Bertie C. Forbes. In 1919 his father established Forbes Magazine as a business journal; its moderate success enabled the younger Forbes to enjoy the benefits of an upper-middle-class upbringing. He was educated privately in New York and New Jersey and passed through Princeton University in 1941 with a degree in political science. Like his father, Forbes intended to pursue journalism, and he established several smalltown newspapers in the Midwest before enlisting in the U.S. Army during World War II. Forbes served with distinction as an infantry sergeant in Europe, was severely wounded in combat, and

was awarded the Bronze Star. Afterward he returned home and joined the family magazine as an associate publisher. Over the years, he rose to positions of increasing responsibility within the business. After 1947, Forbes developed an interest in local politics and within two years gained election to a New Jersey council. In 1952, he won election to the state senate as a Republican, where he served until 1958. Forbes subsequently failed to win the gubernatorial election that year and retired from politics to pursue publishing full time.

After his father died in 1954 Forbes assumed control of the magazine as editor, while his elder brother Bruce handled financial matters. By 1964, Forbes had became president of the family business, and the tempo of success rapidly quickened. It was in this capacity that Forbes made a name for himself in both the business and journalistic communities. Capitalizing on his own brash, flamboyant personality, he transformed the magazine into a prosperous enterprise by combining accurate business information with dry and humorous commentary. More than anything else, Forbes saw himself as a cheerleader for American-style capitalism, and his magazine consciously reflected his exuberance for business. He was determined to portray making money as fun and to celebrate financial success with all its attendant wealth. Furthermore, all this information was relayed in a breezy, easily digested style conducive to mass readership. The fact that Forbes Magazine now touted itself as a "capitalist tool" underscored the editor's personal philosophy in bold relief. This approach was a refreshing change to the usually staid world of business publishing, and within a decade the circulation of Forbes rose from 400,000 to 625,000. With annual earnings of \$65 million, it became one of the most influential mass publications in American business history-and an icon of popular culture.

A conspicuous factor in the magazine's mounting popularity was Forbes's own extravagant lifestyle. Being partial to ostentatious displays of wealth, he embarked on high-profile

publicity stunts such as motorcycle races and lavish business parties at his New York mansion and on his 150-foot yacht. Forbes also became a serious devotee of hot-air ballooning and broke an unprecedented six aeronautical records. In 1973 he became the first person to successfully cross the United States nonstop via hot air balloon, and his efforts garnered both the prestigious Harmon Trophy and a slot in the Aviation Hall of Fame. He was also a world-class art collector specializing in the jeweled eggs of Russian sculptor Peter Carl Faberge and in various toy soldiers. Forbes further enhanced his reputation for extravagance through the acquisition of numerous ranches, farms, castles in Europe, and a palace in Morocco. In return, his rakish celebration of entrepreneurial success only drove the circulation of Forbes higher. His most outlandish endeavor was a \$2-million extravaganza held in Morocco to celebrate his own 70th birthday.

When not conspicuously flaunting his wealth, Forbes found the time to pen several humorous and well-received memoirs. He died in Far Hills, New Jersey, on February 24, 1990, with a personal worth estimated at between \$400 million and \$1 billion. His talent for self-indulgence notwithstanding, Forbes possessed an uncanny business mind coupled with a flair for splashy public relations. Not surprisingly, his funeral was copiously attended by several former presidents, Hollywood celebrities, and—most appropriately—50 bikers from the Hell's Angels motorcycle gang. In light of his panache and gratuitous flamboyance, Forbes remains celebrated as the world's "happiest millionaire."

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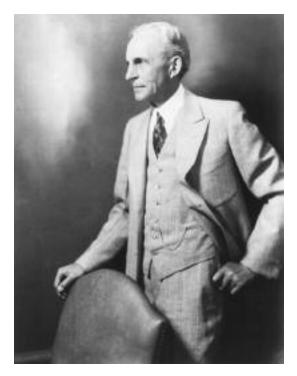
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John C. Fredriksen

Ford, Henry (1863–1947) *businessman and automaker* Born near Dearborn, Michigan, Ford attended school for eight years before becoming an apprentice in a Detroit machine shop at age 16. He first learned about power plants while working for the Detroit Drydock Company, a shipbuilding firm. In 1891, he moved to Detroit permanently and became an engineer with the Edison Illuminating Company, and two years later he became its chief engineer. During his spare time, he experimented with gasoline engines at a small shop at his home.

After working for others until he was 33, Ford introduced his first automobile in 1896 after years of development. He dubbed it the



Henry Ford (LIBRARY OF CONGRESS)

"Quadricycle." He received \$200 for the car and used the money to build another. After a humble start, he formed the Henry Ford Co. in 1903. From the beginning, Ford decided to manufacture automobiles that could be bought by the average citizen, as cheaply as possible. This was a radical departure in the early automobile industry because most cars were priced higher and aimed at a more well-heeled customer.

The competition in the early motor industry was intense. Michigan alone was home to 15 different manufacturers, and more than 80 existed in the United States. Ford incorporated the FORD MOTOR COMPANY in 1903 with capital of \$150,000, mostly from outside investors. After an internal battle about what sort of car to produce, Ford won the day with his concept of an inexpensive car that could be sold to the general population. Ford bought the closely held shares of his opponents in the firm and emerged as president, free to produce his concept car. His first attempt at a car for the masses was the Model N, which sold originally for \$700. The car was very popular, and the company's earnings soared to \$1 million.

In 1908, Ford introduced what would become his best-selling car, the Model T. The original price was \$825, and the car could be ordered only in black. It became an immediate hit with the public and reached almost a quarter of a million units in 1914. In order to facilitate production, Ford introduced the moving assembly line at his Highland Park, Michigan, plant. Within two years, the 1-millionth car rolled off the assembly line, and the plant was producing 2,000 units per day. And the price continued to fall in both real and absolute terms. The price of a Model T in 1916 was in the mid-\$300s, \$500 less than the originals in 1908. He also introduced innovations on the shop floor that made him a legend among his workers. Worker rotation, year-end bonuses, a profit-sharing plan, and the introduction of the \$5 day made his workers extremely loyal, especially since the wage was twice the industry average at the time. By the

early 1920s, more than 5 million Model Ts had been produced.

During World War I, Ford emerged as an opponent of the war, although he did put his factories at the government's disposal after hostilities began. The company made all sorts of vehicles necessary to the war cause, and Ford was a strong supporter of Woodrow Wilson, although he had been a Republican most of his life. He became a candidate for the Senate in the election of 1918 with the support of Wilson but lost. He soon blamed Jews for his defeat, and the result set off a torrent of anti-Semitic remarks that would plague him for the rest of his life.

After the election defeat, Ford subsequently purchased a newspaper, the *Dearborn Independent*, which reflected his extremely conservative political views and became best known for a series of anti-Semitic articles that it ran in continuing installments. He also made an unsuccessful bid for the Muscle Shoals power plant in Alabama, which the government was thinking of selling to the private sector. The facility later became the base for the TENNESSEE VALLEY AUTHORITY.

Although the Model T was the most popular car of its day, Ford held only about 56 percent of the American market for new cars and in the 1920s faced increased competition from the newly reorganized GENERAL MOTORS and Chrysler. In the 1930s, Ford spent less time with the company and more on outside projects such as the Greenfield Village, a museum in Dearborn. He suffered a stroke in 1938, removing him from the company even more and helping senior executives and his only son, Edsel, to greater positions of power. He assumed the presidency of the company again after Edsel Ford died in 1943.

Ford and his wife, Clara Bryant Ford, established the Ford Foundation in 1936, mainly to maintain family control of the company after Ford's death. The foundation held 95 percent of Ford stock, with family members holding the remaining 5 percent. The foundation became a major benefactor of social causes around the world and one of the major forces in philan-thropy. Ford died in 1947.

See also Chrysler, Walter Percy; Chrysler Corp.; Durant, William Crapo.

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Ford Motor Company An automobile manufacturer founded by Henry FORD and incorporated in 1903. The company originally began as the Detroit Automobile Company in 1899. The company subsequently was reorganized as the Henry Ford Company in 1901. Needing additional capital, the company again was reorganized in 1903 as the Ford Motor Company when Ford and 11 associates went into business with only \$28,000 in cash. It sold its first car to a Detroit physician in 1903.

After initial success producing Model N autos, Ford introduced the Model T in 1908. The car was an immediate success, also inspiring Ford to began a new type of production that would revolutionize manufacturing. In 1913, Ford introduced the moving assembly line at the Highland Park plant in Michigan. The line allowed workers to remain in one place and perform the same task as cars moved by their workstations. Within 20 years, the results were phenomenal. Ford sold more than 15 million cars and became a household name. The assembly line also proved that economies of scale could be achieved in mass manufacturing because the cost of the Model T fell over the years.

The Ford Motor Company began to lose market share during the 1920s in the face of intense competition. The original Model T was available only in black and, despite its low price tag, began to lose its appeal for many motorists. In 1925, Ford acquired the Lincoln Motor Company, a maker of high-end luxury cars, in order to diversify its line. In 1927, when the last Model T came off the assembly line, more than 15 million of the model had been produced. It was succeeded by the Model A, which was more refined and offered a choice of colors. The Mercury brand was established 10 years later to cater to mid-market customers. In 1931, the company produced its 20 millionth car.

In the same year, Ford began production in England, building cars for the European market. It also maintained a large manufacturing operation in Germany. Ford founded the Ford Foundation in 1936. The Lincoln Continental model was introduced in 1939. After years of eschewing unions, Ford finally agreed to unionization at its plants in 1941. After Edsel Ford, Henry's son, died in 1943, Henry again assumed the presidency. He resigned after World War II and was succeeded by his grandson Henry Ford II in 1945. The company resumed producing civilian automobiles in July 1945 after several years of devoting its production to military vehicles.

Henry Ford died in 1947, but the family tradition would continue. The postwar period brought expansion, and new models were added in the 1950s, including the Thunderbird in 1954 and the Edsel. Only the former was successful. The Thunderbird, like the Ford and Lincoln Continental, would become one of the company's most enduring models. The Ford Motor Company remained in family hands until an initial public offering in 1956, when Henry Ford II sold some of the family holdings to raise additional capital for expansion.

The company introduced the ill-fated Edsel in 1957, but the car did not remain in production past 1959. In that year, the company created Ford Motor Credit to help provide financing for its cars. Robert McNamara was named president in 1960 but quit a year later in order to join the Kennedy administration as defense secretary. In 1964, the company introduced another model that would be phenomenally successful. The



Row of completed "Tin Lizzys," or Model Ts, coming off the Ford assembly line, 1917 (LIBRARY OF CONGRESS)

Mustang sold more than 2 million units in the first two years of production. Ford Motor continued to expand its operations in Europe in 1967 and became the largest manufacturer of cars in Britain and one of the largest in Germany.

In 1970, Lee IACOCCA was named president of the company and remained in the job for eight years. Henry Ford II remained with the company until 1980 and then served on its finance committee until his death in 1987. William Clay Ford Jr., Henry's great-grandson, joined the company in 1979 and was named president in 1999. After poor financial performance in the 1970s and 1980s, Ford produced a new model called the Taurus that helped turn around the company's performance and became the best-selling car in the United States by the mid-1990s. In 1997, Ford celebrated production of its 250-millionth vehicle. The company acquired foreign manufacturers in the 1990s, as a result of its success, purchasing Volvo of Sweden and Jaguar, Rover, and Aston Martin of Britain.

See also Chrysler, Walter Percy; Chrysler Corp.; Durant, William Crapo; General Motors.

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Foreign Corrupt Practices Act (FCPA) Passed by Congress in 1977, the FCPA makes it illegal for Americans to bribe foreign business contacts in order to do business with them. Enforcement of the act is shared by the Department of Justice and the Securities and Exchange Commission (SEC).

In the 1970s, the SEC discovered that hundreds of American companies doing business abroad regularly bribed foreign officials in return for contracts or other favors. The payments often were made to government officials in order to facilitate business. After the act was passed, several companies accused of bribery were found guilty, fined, and subsequently barred from bidding on federal contracts in the United States.

The law was not totally effective, however. It put many firms at a disadvantage since bribing foreign officials is not illegal in many other countries. Some firms even allowed the deduction of the bribes as business expenses. As a result, the law made the playing field overseas more uneven for American companies attempting to compete. In 1988, the United States began a concerted effort to convince other countries that such a law should be passed among all developed countries in order to create a level playing field for all. As a result, the United States and 33 other countries signed the OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions.

The FCPA has required companies to establish compliance departments to monitor their overseas activities in much the same way that securities firms maintain compliance departments to ensure they remain within securities guidelines. The act also requires companies with securities listed in one of the U.S. stock markets to meet American accounting standards. Detractors have claimed that the law ties their hands when dealing with foreign companies and governments, many of which expect off-the-record payments as part of the expense of doing business.

See also GENERALLY ACCEPTED ACCOUNTING PRINCIPLES; SECURITIES EXCHANGE ACT OF 1934.

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foreign exchange market The market for currencies, conducted mainly through bank dealers around the world. Although the market has existed since ancient times, developments since World War II have changed the modern market that is conducted in the United States by money center banks in the major financial centers.

The market is divided into two compartments-the spot market and the forward market. The spot market trades currencies for immediate delivery, while the forward market trades for delayed delivery for periods up to one year. Spot prices for the dollar against most other currencies can be obtained daily, although the forward market is limited to prices between the major trading currencies only. Banks in the United States quote the dollar against other currencies, and the dollar also is quoted against the same currencies by banks in other countries. In such a manner, the market has developed into a 24-hour exchange that is constantly quoting prices in the major trading currencies around the world. When a dollar is traded in another country against a currency that is not native to the country in which it is being quoted, the rate is called a cross-rate.

Until the early 1930s, the market was based upon the dollar and the gold bullion standard.

Most major trading currencies were stated in gold terms. When Britain and the United States abandoned the GOLD STANDARD in the early 1930s, the system did not return to normal until after World War II. After the BRETTON WOODS SYSTEM was implemented, the dollar was the major currency in the system, quoted at \$35 per ounce of gold. Many currencies were protected in some form or other by exchange controls. Their respective central banks controlled their international flows to ensure stability of the exchange rate and their own reserves.

The Bretton Woods system effectively was abandoned in August 1971, when President Nixon pulled the United States off the convertibility standard. The old system was temporarily replaced by the Smithsonian Agreement, but it lasted only a short time. The foreign exchange markets were in turmoil until a new regime emerged. Within a year the major trading, or hard, currencies were floating against each other. Rather than be stated in gold terms and have a fixed parity in the market, the currencies floated freely against each other and continue to do so today. Smaller currencies, normally to that of their major trading partner.

The international monetary system has undergone other changes in addition to the adoption of floating currencies. The European Union adopted the EURO, a composite currency representing a weighted value of its members, in January 1999 to ensure stability of the European Union's imports and exports in light of competition from the dollar and the yen. Within that system, currencies do not float against each other but have stable values that may require adjustment from time to time.

In the 1980s, the foreign exchange market began developing new financial products for use by its large institutional customers. New currencyrelated products such as options, caps, and collars were developed so that customers could limit foreign exchange exposure rather than use traditional forward contracts. In the 1990s, many countries with historically weak currencies tried linking them to the U.S. dollar. There were several ways of doing this, with some countries adopting the direct peg and a currency board. These techniques were usually attempts by a country to link its currency directly to the fortunes of the dollar, although the results were mixed at best.

See also FOREIGN INVESTMENT.

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foreign investment Investments made in a country by a foreign investor, usually a corporation. Foreign investment differs from foreign trade, which is selling goods from a domestic base to foreign customers. In the case of foreign investment, a company invests money to produce and/or distribute goods overseas in order to be closer to the foreign market.

Foreign investment is divided into two types—direct and portfolio. Direct investment occurs when a foreign investor acquires tangible assets, or what is considered to be a dominant shareholding, in an American company. The size of the investment does not necessarily have to be a majority shareholding. Traditionally, a foreign investment in the United States has been considered to be any shareholding in an American company of 10 to 15 percent, but certainly less than a 51 percent majority holding. Exactly how much of a foreign investment in an American company constitutes foreign investment has changed periodically and traditionally is defined by the U.S. Department of Commerce.

Portfolio investment involves a foreign investor buying intangible assets in the United

States, namely stocks, bonds, and other financial instruments, or holding copyrights and patents. Portfolio, or indirect, investment is considered to be the less stable of the two since foreign investors can liquidate their holdings and withdraw their capital from the markets at short notice. Direct investment, on the other hand, is assumed to be more stable since it represents a "brick and mortar" investment that is long-term in nature.

The American experience with foreign investment has fallen into two broad historical periods. From the 18th century to the end of World War I, the United States was a net importer of longterm capital. The traditional suppliers of funds were the Dutch and the British, along with other European countries. Private banking firms such as BARING BROTHERS and the House of ROTHSCHILD provided much-needed foreign investment during the 19th century, especially before the Civil War. American banks such as August Belmont & Co. and Drexel Morgan & Co. also helped bring in foreign investment, as did Drexel Morgan's successor, J. P. Morgan & Co.

After World War I, the United States became a supplier of investment funds to the rest of the world, reversing its earlier reliance on foreign investment. The trend accelerated after World War II. Then in the 1970s, as the United States began experiencing balance of payment problems, the situation changed. In the late 1970s and 1980s, the Japanese became one of the largest foreign investors in the United States. European investors also supplied substantial funds, including the British, Germans, and Swiss. These traditional sources supplied money for both direct and portfolio investments, often on a large scale.

In the late 1970s and early 1980s, many foreign companies, notably Japanese, began opening operations in the United States to produce goods and sell them locally. Often these operations were prompted by changes in TARIFFS, especially in the case of automobiles. The Reagan administration urged Japanese auto manufacturers to agree to a voluntary quota on the number of compact autos sold each year in the United States. While they did agree, the agreement did not prohibit production within the United States, and, as a result, several Japanese companies opened manufacturing facilities to build the cars domestically.

A major accounting change for valuing overseas assets and liabilities in the early 1980s helped American firms operating abroad and softened the blow of major currency changes on the FOREIGN EXCHANGE MARKETS that could affect the value of those investments. American foreign investment has centered mostly on Britain and western Europe, but American investments are spread around the globe. Britain traditionally is the major recipient of American investment along with Canada. The United States remains the largest foreign investor in the world and has also attracted the largest amount of foreign investment from abroad. With the emergence of China and South Korea as major trading nations in the 1990s, both have become investors in American assets, notably Treasury securities and other indirect investments.

See also BELMONT, AUGUST.

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free agency A labor concept that allows a member of a professional sports team to sign with a team of his or her choice rather than be tied to a specific team under contract terms that do not allow freedom to move. The practice is

now used by all professional athletes, although the practice originated in baseball.

Until 1976, baseball management maintained a "reserve clause" that tied players to a franchise for the duration of their careers unless traded, sold, or given an outright release. The reserve clause of player contracts had been a part of the game dating back to 1879 and the 1880s, and management sold player contracts at will. Management had sought ways to limit the movement of players from team to team. Initially, the leagues instituted rules that prohibited players from changing teams during the course of the season, but in 1879 the National League team management instituted a "gentleman's agreement" to recognize five players on each team who would be reserved from negotiations with other teams, and thus through informal collusion kept player salaries down. In 1887, National League management represented by Albert Spalding agreed to a uniform contract, but included the "reserve clause" in the contract. Two years later, National League players issued a manifesto challenging the recent actions of management and in 1890 set out to form the Players League under player control. Spalding orchestrated the fall of the Players League after one year and allowed the players to return to the original franchises.

Major league baseball also enjoyed an exemption from antitrust legislation granted by Congress in 1922. This exemption made it possible for franchise owners to exercise a monopoly over the talent of players. As early as 1946, players presented legal challenges to the "reserve clause," but the system would remain in place until the early 1970s. In 1968, player representative Marvin Miller negotiated a contract with management that raised minimum player salary to \$10,000, and recognized a grievance procedure and the right of players to have representatives during salary negotiations. In 1969, a dispute over pension payments resulted in players not signing their contracts and a boycott of training camps by 391 players.

The first major legal challenge to the reserve clause came in 1969, when St. Louis Cardinals player Curt Flood attempted to block his off-season trade to the Philadelphia Phillies franchise. Flood's major league career began in 1956, and he had spent 11 seasons with the Cardinals. Flood sued in federal court to overturn the reserve clause, and his lawyers argued that the restrictive contract measure violated the Thirteenth Amendment, which prohibits slavery and indentured servitude. Flood's suit failed, but while the suit was still pending during the 1970 season, Flood refused to play for the Phillies. Instead, Flood agreed to a trade to the Washington Senators for the 1971 season, but only with the understanding that the trade in no way would impair the pending legal action.

The federal district court and appeals court rendered negative decisions on Flood's suit, and on June 18, 1972, the U.S. Supreme Court also ruled against him. Flood's career ended with these legal decisions. He saw limited playing time with the Senators in 1971 (13 games) and did not play again after the 1971 season. The majority of active major league players failed to support Flood's suit, but some retired players such as Jackie Robinson testified on his behalf.

The next challenge came in 1973 as a consequence of terms agreed upon pursuant to a new collective bargaining agreement. Salary disputes could be submitted to impartial binding arbitration, and after 10 years with a team a player could veto a trade. In 1974, eight Oakland Athletics players submitted salary disputes to arbitration. The arbitrator rendered favorable decisions for Rollie Fingers, Ken Holtzman, Darold Knowles, Sal Bando, and Reggie Jackson, and unfavorable decisions for Gene Tenace, Joe Rudi, and Ted Kubiak. Owner Charles Finley suffered a major reverse with the loss of Jim "Catfish" Hunter. Hunter won free agent status because Finley had failed to fulfill the terms of his contract with Hunter. As an unrestricted free agent Hunter signed a contract with the New York Yankees franchise.

Two years later, in 1976, the reserve clause fell. The impartial arbitrator Peter Seitz ruled that at the end of a contract the team could exercise its option to retain the player for one year, but after the option year the player became a free agent. Management fired Seitz and challenged his decision in court, but the courts upheld Seitz's ruling. This decision effectively ended the reserve clause. A collective bargaining agreement negotiated in 1976 contained the provision that a player became a free agent after six years. The Seitz ruling and 1976 collective bargaining agreement gave players greater control over their careers and dramatically altered the personnel of some franchises, as seen in the case of the Oakland Athletics. In 1976, 24 veteran players were on the Oakland roster; when a number of them left, they broke up a squad that had won three consecutive World Series championships.

Free agency resulted in an increase in salaries for star players, who would command salaries in the six and seven figures. Jim Hunter, for example, received \$2.5 million a year to move to the Yankees franchise. The salaries of selected star players came close to the value of franchises created only a few years earlier with expansion in 1969. For example, a group headed by William Daley paid \$5.25 million for the new Seattle Pilots franchise when it was created in 1969. The franchise sold for \$10.8 million in 1970 to a group headed by Bud Selig, which moved the franchise to Milwaukee. As the salaries of star players increased, so too did the value of franchises.

Over the next 14 years, management attempted to limit the gains made by players through free agency. Players initiated a strike in 1981 in response to an effort by management to gain compensation for free agents. After seven weeks, management backed down. Arbitration decisions in 1987 and 1990 ruled that management had colluded to not hire free agents, thus violating the collective bargaining agreement. The 1987 ruling was the most serious, since it ruled that there was evidence of collusion in 1985 and 1986. A strike during spring training in 1990 was ended before the beginning of the season. The strike that ended the 1994 season in early August came in response to new management initiatives to limit player rights, including the imposition of a salary cap. Spring training for the 1995 season began with replacement players in camp, but management and players eventually resolved the dispute. During the last dispute, management emphasized the high salaries of the minority of elite players as a public relations ploy to undermine potential public support for the players' cause.

The 1995 players' strike ended after a New York federal judge issued an injunction against the team owners to prevent them from using replacement players, and for them to resume normal labor relations under the previous collective bargaining agreement. Following the issuance of the injunction, players agreed to suspend the strike, and a reduced-schedule season with regular players began on April 25. The end of the strike also found a number of free agents without teams, but the bidding for their talents began immediately after the final agreement to resume the season had been worked out. Those teams with deep pockets paid high salaries to acquire skilled free agents.

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Robert H. Jackson

Frick, Henry Clay (1849–1919) *industrialist and steel executive* Frick was born in Westmoreland County, Pennsylvania, and worked on his father's farm as a boy, receiving only sporadic education. He worked for his uncle, Abraham Overholt, who manufactured Old Overholt Whiskey, as a clerk and worked his way to becoming bookkeeper. He also developed an interest in steel and soon began developing steel and coke ovens in western Pennsylvania.

Finding steel more to his liking, he opened H. C. Frick Coke Co. in 1871 to operate coke ovens in the local coal district. After the Panic of 1873, Frick used the economic crisis to his advantage by buying out several competitors. Borrowing money from Thomas Mellon of the Pittsburgh banking family, he began buying coalproducing land while prices were depressed. By 1880, he had made a sizable return and was worth more than \$1 million. Like John D. Rockefeller in the oil business, he began to consolidate his operations after the panic, assuming correctly that the economy would soon right itself.

In 1881, Andrew CARNEGIE acquired substantial holdings in Frick's company, and Frick was paid with a large block of Carnegie stock. After being named chairman of Carnegie Steel in 1892, Frick continued to consolidate the STEEL INDUSTRY and expanded into RAILROADS as well. He acquired Duquesne Steel Company in 1890. A black mark appeared on his management record shortly thereafter. While chairman of Carnegie Steel, Frick dealt with strikers at the company's Homestead plant in Pennsylvania who were protesting low wages. While Carnegie was in Europe, Frick called in private Pinkerton security guards to calm the workers, and a riot ensued, claiming casualties on both sides. An attempt was also made on his life. Although the strike was broken when the governor of Pennsylvania sent in 8,000 National Guard troops, the incident became a national sensation and helped to underscore the plight of the poverty-stricken steel workers in the region.

In 1899, Frick resigned his position at Carnegie Steel after a disagreement with Carnegie. Subsequently, he served as intermediary between Carnegie and J. P. Morgan, who wanted to buy Carnegie Steel. After the transaction was complete in 1901, he became a director of the newly organized U.S. STEEL CORP. He also was intermediary between Morgan and John D. Rockefeller, obtaining some of Rockefeller's mineral resources for the new company. He helped reorganize the Equitable Life Assurance Company in 1905 and acquired large tracts of land in his native Pittsburgh.

Frick was known as a patron of the arts. His art collection and New York mansion were left to the public as the Frick Museum. He also made several notable contributions to Princeton University as well as donations of parkland in Pittsburgh.

See also MORGAN, JOHN PIERPONT.

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Fulton, Robert (1765–1815) *engineer and inventor* Born in Lancaster County, Pennsylvania, to Irish immigrant parents, Fulton spent his early years designing little paddleboats and sketching. At age 17, he moved to Philadelphia, where he was apprenticed to a jeweler, beginning a long career of design and invention. Then in 1786, he moved to Britain, where he studied with the well-known American artist Benjamin West and became an illustrator and essayist as well.

Fulton also became interested in canals and canal boats in the 1790s and spent a considerable number of years in Britain and France designing marine vessels and torpedoes. Shortly thereafter, he began to expand his interests, learned several languages, and became interested in design. He began to design canal boats first, before turning his attention to submarines. He developed the first submarine capable of diving and surfacing, but propulsion was a problem he could never successfully solve.

After becoming acquainted with Robert LIV-INGSTON, then the U.S. minister to France, he turned his attention to steamboats. After meeting

with some initial success, he returned to the United States and began building a steamboat in New York that would become known as the Clermont. The boat became the first successful steamboat and in 1807 began a service between New York City and Albany. The trip took 32 hours. Other similar boats followed, and the New York legislature granted him and Livingston a monopoly on steamboat transportation in New York harbor. The monopoly would later be challenged by a rival company operating between New York, New Jersey, and Philadelphia and headed by Thomas Gibbons and his captain, Cornelius VANDERBILT. The case was decided in the Supreme Court of the United States in favor of Gibbons. One of Fulton's last achievements was the design of a steam warship to defend New York harbor



Robert Fulton, a wood engraving (LIBRARY OF CONGRESS)

against the British in the War of 1812; Congress ordered the boat built in 1814, but Fulton died before its completion.

In addition to his designs, Fulton was also known as an artist, although few of his original works remain. Along with John STEVENS, he is remembered as the father of the steamboat that revolutionized transportation after the War of 1812.

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futures markets Or commodity futures markets—the term given to financial markets in which contracts for future delivery are traded rather than the actual commodities or financial instruments that they represent. These markets originally were established so that farmers could sell their crops to buyers at prices determined in the present but for delivery at some future date. This was called "when-arrived" trading.

In these markets, traders buy and sell futures contracts in a pit environment, where traders congregate solely to trade in that particular futures contract. Orders from customers are relayed to the pit, where the actual transactions takes place. The system, known as "open outcry," has been employed since the futures exchanges were founded in the 19th century. Open outcry is still employed, although proposals are underway at certain exchanges to replace it with computerized trading that would take place away from the trading floor.

The futures markets began before the Civil War in Chicago and New York, trading agricultural commodities contracts. The CHICAGO BOARD OF TRADE was established in 1848, becoming that city's first established futures market, although it

took several decades for futures trading to become well established. Markets were opened in other midwestern cities, including St. Louis and Kansas City, as well as in New York. Other exchanges include the Kansas City Board of Trade (founded 1856), the New York Mercantile Exchange (1898), and the Chicago Mercantile Exchange (1872). Exchanges tended to specialize in certain types of contracts. Originally, the exchanges in the Midwest specialized in homegrown agricultural commodities, while those in New York specialized in commodities related to international trade, including agriculturals such as coffee and sugar, as well as precious metals. Over the years, contracts on a wide array of commodities were added, including precious metals, building supplies, livestock, agricultural byproducts, heating oil, fuel oil, and financial instruments, among others. The clear-cut lines of demarcation between exchanges no longer exist, and today all of the futures exchanges trade financial futures on financial instruments such as stock indexes, bonds, and foreign currencies. Contracts traded on one exchange are not interchangeable with those traded on another.

Congress passed legislation in the 1920s and 1930s in an attempt to control the futures markets. In 1922, Congress passed the Grain Futures Act, an attempt to control speculation in the grain futures markets. The legislation was not successful, and in 1936 Congress responded by passing the Commodity Exchange Act. This law made price manipulation on the exchanges illegal and sought to curb excessive speculation and fraud. Further legislation was necessary because the markets still did not have a regulatory body. Today, they are regulated by the COMMODITY FUTURES TRADING COMMISSION, established in 1974. This five-person regulatory commission is responsible for overseeing trading on the various exchanges in much the same way that the SEC oversees securities trading on the stock exchanges. In the futures markets, margin is set by the individual exchanges and, when securities derivatives products are involved, by the SEC and the Commodities Futures Trading Commission through powers delegated by the FEDERAL RESERVE since 2002.

One of the major issues concerning the relationship between stock, futures, and OPTIONS MAR-KETS is program trading, also referred to as portfolio insurance. Program trading involves the use of computer programs assessing the value of individual stocks, futures, and option prices and then buying and selling each accordingly. It became a major issue during the stock market collapse in October 1987 and was blamed for much of the market's fall. Stock traders blamed computer programs for selling stocks based upon derivatives valuations, adding significant downside selling pressure to stocks at a vulnerable time.

This interrelationship also becomes especially critical at what is known as triple witching hour, the day when options and futures related to stocks expire. Many of these instruments' prices have an effect on each other, and when triple witching hour occurs, usually at the end of a particular business day, individual stocks and the market indexes may experience sudden price changes due to arbitrage between them. For instance, a stock that is included in a major market index and has options listed on it may experience volatility in the last hours of trading as traders adjust their positions in index futures, individual stock options, and in the stock itself. Usually, the adjustments are made by computer through program trading whereby programs react to price discrepancies and automatically enter buy and sell orders in the various markets as a result.

See also BLACK-SCHOLES MODEL.

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Gallatin, Albert (1761–1849) *banker and politician* Born into a prominent Swiss family in Geneva in 1761, Gallatin attended the prestigious Academy of Geneva, where he displayed considerable academic promise. Against his family's wishes, he immigrated to the United States in 1780 after refusing a commission in the Hessian army. After arriving in Boston, he began various business ventures, most of which were not successful. As a result, he also lectured in French at Harvard College in order to help support himself. He took the oath of allegiance in Virginia in 1785 and then moved to Pennsylvania, where his political career began.

Gallatin was elected to the state legislature in 1790 from a constituency in western Pennsylvania and then to the U.S. Senate in 1793 but was rejected by that body because his citizenship was in doubt. He left the Senate after only three months in office and after infuriating Alexander HAMILTON, secretary of the Treasury, by asking him for an itemized statement of the national debt as of January 1, 1794. In the same year, his constituents led the Whiskey Rebellion in Pennsylvania over the matter of a tax on spirits produced in the area. In 1795 he returned to Congress as a member of the House of Representatives, which then was meeting in Philadelphia. He became a member of the Standing Committee of Business, one of that body's first finance committees.

After the hotly contested presidential election of 1800, new president Thomas Jefferson appointed Gallatin secretary of the Treasury. In the same year, Gallatin produced a famous tract entitled "Views of the Public Debt, Receipts & Expenditures of the United States," a report critical of U.S. financial policy over the previous decade. He took office pledging to reduce the national debt and actually did so, reducing federal indebtedness by almost \$14 million. He produced a plan to pay down the federal debt by 1817, but the Louisiana Purchase and the War of 1812 intervened. In 1813, he was part of the delegation that negotiated peace with Great Britain. He served as secretary until 1814 but declined reappointment to the job when it was offered by James Madison. In 1826, he served as ambassador to Britain.

At John Jacob Astor's request, Gallatin was named president of the newly formed National Bank of New York in 1831. In the same year he wrote another famous tract, "Considerations on the Currency and Banking System of the United States." He was a strong supporter of the Second BANK OF THE UNITED STATES, advocating hard money policies and free trade. Later, the National Bank of New York was renamed the Gallatin National Bank.

Gallatin was also a founder of New York University in 1830 and president of the New-York Historical Society in 1842. He died on Long Island in 1849. He is best remembered for his views on the soundness of government finances, opposing Hamilton and the Federalists, and serving in government during a critical period of American history, especially at the time of the Louisiana Purchase.

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Gary, Elbert H. (1846–1927) *lawyer and industrialist* Born in Illinois, Gary worked on his father's farm and served in the Union Army during the Civil War. He then worked briefly as a teacher before deciding to study law. Gary graduated from Union College of Law in Chicago and served as a court clerk for three years before beginning his career as a corporate lawyer. He entered politics when he was elected mayor of Wheaton, Illinois, and later served as a county judge in DuPage County. From that time, he acquired the title Judge Gary, which he used throughout his professional life.

His work with corporate clients piqued an interest in the STEEL INDUSTRY, and he organized the American Steel and Wire Co. Coming to the attention of J. P. Morgan, he joined the Federal Steel Company in 1898 and moved to New York. He was asked to organize the U.S. STEEL CORP. in 1901 after Morgan purchased Carnegie Steel. He

became chairman of the board of directors and personally directed the expansion of the company into the largest steel producer in the world, a position he would keep for the next two years. He also helped develop the steel-producing town of Gary, Indiana, which was named after him. As chairman of the company, he organized the famous Gary dinners at which steel executives from other companies were invited to discuss matters of mutual interest and concern. The first was held at the Waldorf Astoria in New York City in 1907 and was attended by 49 steel company executives who were invited to achieve gentleman's agreements about prices and production, not price fixing, as Gary always maintained. The dinners later became evidence in Justice Department antitrust suits against the industry as examples of collusion among steel executives to fix prices and control production.

Gary's reputation within the industry was one of a fair employer who paid high wages and promoted safety for his employees. He also was a proponent of employees owning stock in their employers' companies, although he was opposed to labor unions. His greatest coup was a favorable ruling by the Supreme Court in 1920 adjudging that U.S. Steel did not violate the SHERMAN ACT, as the Justice Department had contended in a suit filed years before. The ruling was favorable in part because he had always been forthcoming about the company's policies, dating back to the Roosevelt administration when the president tacitly agreed not to prosecute the company for its part in many potential antitrust problems caused by the Panic of 1907 and J. P. Morgan's activities. He remained active in the company until his death in 1927.

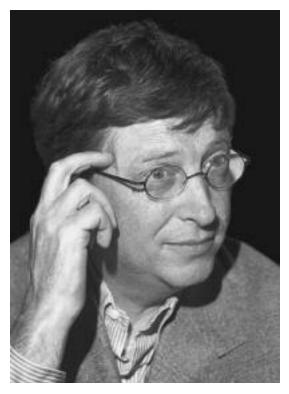
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Gates, Bill (1955–) *computer software pioneer* Gates was a cofounder of the Microsoft Corporation. Born in Seattle, Gates began programming while in his teens. He teamed with schoolmate Paul Allen and began taking on freelance projects while still in high school and before enrolling at Harvard. He left Harvard after only a year and, with Allen as his partner, founded a small software company in 1974 that would later become the Microsoft Corporation.

Originally, their company was located in Albuquerque, New Mexico, and developed programs based upon the BASIC computer language. It was not until the advent of the small, or personal, computer (PC) that the company got its initial break. When IBM introduced the first PCs in 1980, Microsoft was given a contract to develop an operating system for the computer hardware. Gates and Allen had moved their company back to Seattle, where a small competitor, Seattle Computer Products, had developed an operating system called the Quick and Dirty Operating System. Gates changed the name to disk operating system, or DOS. After making improvements, DOS was licensed to IBM. From that point, Microsoft operating systems and software became the standard for PCs around the world, with the exception of the products of its smaller competitor, Apple Computer.

Because of the ease and user friendliness of the Apple operating system, Microsoft announced its Windows operating system in 1983. Unlike its older DOS system, Windows employed a graphical interface that allowed users to access the system as easily as they could the Apple system. Allen retired from the company in the same year. However, Windows was not released for another two years, and Microsoft soon was sued by Apple for copyright infringement. Although the suit continued into the 1990s, Windows became extremely popular and helped solidify Microsoft's hold on the PC market. Subsequently, the company launched a successful IPO in 1986, which made Gates extremely wealthy and provided the capital Microsoft needed to develop new prod-



Microsoft chairman Bill Gates (GETTY IMAGES)

ucts and buy out smaller competitors, a strategy the company successfully employed as it grew larger.

In 1990, Windows 3.0 was introduced and provided further competition for Apple software. Eventually, Apple's suit against Microsoft was dismissed. Microsoft continued to introduce software products based upon the Windows system. By the 1990s, the company held a virtual monopoly over the operating systems of PCs, with an estimated 80 percent of the world's PCs using either DOS or Windows. Microsoft's agreements with manufacturers also called for a fee to be paid to the company for each PC sold, a practice that, critics contended, illustrated its virtual dominance of the industry.

In 1998, the Antitrust Division of the Justice Department filed suit against Microsoft, charging

it with violations of the Sherman Antitrust Act. The company vigorously defended itself against the charges, although the initial trial judge found against Microsoft and ordered the company broken into two parts. Gates continued to maintain the company's innocence against the charges and filed an appeal. During the bull market of the late 1990s, the advance in the company's stock price easily made Gates the wealthiest man in the world, with an estimated fortune valued somewhere between \$70 and \$90 billion. He also became actively involved in philanthropy.

See also COMPUTER INDUSTRY.

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Geneen, Harold S. (1910–1997) *conglomerate executive* Born in Bournemouth, England, Geneen immigrated to the United States with his parents in his infancy. He studied accounting at New York University and, to help pay his expenses, worked as a runner on the NEW YORK STOCK EXCHANGE. In the 1930s, he worked as an accountant for several companies before accepting the top accounting job at the American Can Company during World War II.

Geneen then worked briefly for camera maker Bell & Howell and steelmaker Jones & Laughlin before accepting a job in 1956 with Raytheon, an electronics company that did much defense-related work for the government in the postwar years. The company was run by Charles Francis Adams, who allowed Geneen to reorganize the company substantially. Although he quadrupled the amount of Raytheon's earnings, he was still not given the top job at the company, so in 1959 he left to accept the presidency of International Telephone & Telegraph, a company founded in the early 1920s.

Geneen became convinced that many companies could benefit from diversification of their operations in order to protect themselves against swings in the economic cycle. Part of the strategy was an aggressive acquisitions program. After 1963, he began acquiring specialty manufacturing companies producing things such as industrial pumps, air conditioning units, and control devices used in domestic appliances. In 1964, true diversification began when he acquired Aetna Finance, a consumer finance company, and a British insurance company, creating the foundation of ITT Financial Services.

By 1965, ITT's revenues had doubled, reaching \$1.5 billion. Geneen began pursuing Avis, the car rental company. ITT also made a bid for ABC, the television broadcast company, but there was much regulatory concern about the acquisition. ITT ultimately abandoned it. The company also acquired the Sheraton group of hotels in 1967 and the Hartford Fire Insurance Company. The Hartford acquisition aroused the interest of the Nixon administration and would be allowed only when ITT agreed to divest itself of Avis and two other companies. At the height of its acquisitions program, ITT was adding a company per day, accumulating 250 companies with more than 2,000 operating units.

By the late 1960s and early 1970s, ITT moved into the top 20 largest American corporations measured by assets. Geneen came under severe pressure in the early 1970s, being accused of meddling in the affairs of Chile, where ITT had a substantial presence. He and ITT were also accused of buying political influence from the Republican Party during the 1972 presidential election, although none of the charges were ever proved irrefutably. Geneen served his last full year at ITT in 1977 and was succeeded by Rand Araskog as chairman.

See also conglomerates; Lazard Freres; Mergers.

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General Electric Co. Founded as the Edison Electric Co. by Thomas EDISON in 1878, the company is one of the few American companies to retain its original corporate name, later adopted in 1892. Under Edison's guidance, the firm developed the incandescent lightbulb before merging with the Thomson-Houston Electric Co. in 1892. For the first 20 years of its life, the company was run by Charles Coffin, a former shoe company executive. Its technological developments were overseen by Charles Steinmetz, its chief electrical engineer, who was responsible for steering the company's development.

The company then branched out into electric transformers and locomotives, although Edison himself ended his involvement with the company several years after the merger. When Charles Dow initiated his stock market average in 1896, GE was one of the first stocks included. Today it is the only original member remaining in the Dow Jones Industrial Average.

During World War I, the company did research work for the U.S. Navy. When the war ended, it was attracted to the market for radios and the nascent broadcasting industry. It manufactured radio receivers and also helped organize an early radio station, WGY, in Schenectady, New York, the home of its research division. GE also produced a wide array of small appliances, which made it a household name with consumers. During World War II, the company produced airplane engines, including the first jet engine produced in the United States.

After the war, the company continued to expand its line of household electronic devices while also moving into more sophisticated areas such as jet propulsion, medical technology, and financial services. In 1981, John WELCH was named head of the company, and he overhauled its operating divisions, adding new ones and cutting others. He also began an aggressive acquisitions program, helping the company to become a successful conglomerate. Among GE's continued interests were broadcasting (including NBC), appliances, electrical distribution, power systems, medical systems, and INVESTMENT BANKING. GE acquired Kidder Peabody, an investment banking firm, before divesting it in 1995. Many divisions were subsequently sold and others bought in a relentless quest to maintain profitability.

In 1997, GE became the world's largest company in terms of stock market capitalization. One of its divisions, GE Capital, became one of the country's largest nonbank financial service companies, offering CREDIT CARDS, insurance, MUTUAL FUNDS, and wholesale lending. General Electric continues as one of the most successful, highly diversified companies into the 21st century.

See also conglomerates; Morgan, John Pierpont.

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Generally Accepted Accounting Principles

(GAAP) A body of accounting rules that consists of agreed-upon standards, conventions, and procedures that define financial accounting and reporting in a society. Accounting standards are necessary for the economy to function efficiently. Financial reports prepared according to GAAP help investors and lenders to allocate their resources among business organizations.

The SECURITIES EXCHANGE ACT OF 1934 gives the Securities and Exchange Commission (SEC) the legal authority to establish GAAP for companies that issue securities to the public in the United States. Throughout its history, the SEC has relied upon the private sector to establish GAAP, as long as it performs this function in the public interest. From 1936 to 1959, the Committee on Accounting Procedures (CAP) of the American Institute of Certified Public Accountants (AICPA) issued 51 accounting research bulletins (ARBs) on various subjects to establish GAAP. In 1953, the CAP issued ARB 43, which codified preceding research bulletins and remains widely influential. From 1959 to 1973, the Accounting Principles Board (APB) of the AICPA established GAAP through its 31 opinions. Unlike the CAP, the APB had a full-time research staff.

The FINANCIAL ACCOUNTING STANDARDS BOARD (FASB) began operations in 1973 to provide an equal opportunity for all interested groups to participate in the standards-setting process. In contrast, independent auditors dominated the CAP and the APB. The FASB has seven board members who work full time to resolve financial accounting issues, communicate with constituents, and serve as a focal point for research. Members preserve their independence as standard setters by severing ties with their previous employers, unlike the part-time members of the CAP and APB. The FASB endorsed the pronouncements of the CAP and APB as GAAP, unless superseded or amended by its own pronouncements. The FASB creates GAAP through three types of pronouncement: statements of financial accounting standards (SFAS), interpretations, and technical bulletins. The board follows due process publicly before issuing any pronouncement.

Statements of financial accounting standards (SFAS) consist of principles at the highest level, approved by a two-thirds majority of board members. As of February 2001, the FASB had issued 140 SFAS, although many amend or rescind prior standards. Among the topics covered by SFAS are accounting for leases, income taxes, pensions, derivative financial instruments, not-for-profit organizations, segments of an enterprise, motion picture films, oil and gas producing activities,

insurance enterprises, foreign currency translation, research and development costs, earnings per share, and contingencies. The development of an SFAS often involves controversy. Employers fought against SFAS 106, which caused them to recognize a liability for postretirement benefits other than pensions. The business community vigorously criticized a proposed standard to charge executive stock options against earnings. The relevant standard, SFAS 123, required disclosure of the cost of most stock options in footnotes, rather than on the income statement.

Unlike its predecessors, the FASB issued seven statements of financial accounting concepts (SFACs) as a framework for standard setting. The SFACs, while not GAAP, have significant implications for the development of GAAP. The seven existing SFACs describe objectives for financial reporting, qualitative characteristics of accounting information, elements of financial statements, recognition and measurement in financial statements, and use of cash flow information and present value in accounting measurements.

See also SARBANES-OXLEY ACT; SECURITIES ACT OF 1933.

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Mary Michel

General Motors Corp. Founded in 1908 by William Crapo DURANT, General Motors became the world's largest car maker and largest corporation after World War II. In the early years, it was created by consolidating several car companies and other specialty companies under one umbrella. The company captured almost 50 percent of the domestic market for cars and trucks before losing some of its market share in the 1980s.

Durant, a former cigar salesman, got his start in transportation by building the Durant-Dort Carriage Company into the country's largest carriage manufacturer before turning his attention to automobiles. He began by purchasing the Buick Motor Company in 1904 and sold stock to finance its operations. By 1908, Buick had become the largest producer of cars in the country. The same year he founded General Motors in order to diversify his product line. Within a year, GM had sold more than cars and trucks on sales of \$29 million. But Durant's management was poor, and he lost control of his company in 1910. He regained control in 1918, after having created Chevrolet in the interim. The new GM included Chevrolet, and he soon purchased Fisher Body, which was to become the standard carriage designer for the company. The General Motors Acceptance Corp. was also founded in 1919 to act as the finance arm of the company.

Durant lost control of GM again in 1920. One of his former appointments was Alfred SLOAN, and in the 1920s Sloan began introducing a series of then-radical management changes that led to a more efficient and productive company. In 1923, Sloan was named president. Another of his innovations was changing models slightly from year to year so that the public would sell its older models in favor of the new. During World War II, the company was heavily involved in war-time production of military vehicles. In the 1950s, the company recorded its first billion-dollar profit year. Sloan retired in 1956, and its new chairman, George Wilson, was on the cover of Time magazine, having made headlines by stating before a congressional committee that "what is good for General Motors is good for the country." The company managed to hold its grip on the worldwide auto market for another 20 years before encountering serious competition from overseas automakers in Japan and Europe.

In the 1980s, domestic market share continued to drop to about 35 percent. The company remained as the world's largest automaker, but its market dominance was about 12 percentage points below what it had been during Sloan's administration. The company also began an aggressive campaign of adding other nonauto divisions. It bought Electronic Data Systems (EDS) from Ross Perot in 1984 and Hughes Aircraft in 1986. It also launched ventures with foreign automakers, especially Toyota, and purchased Saab of Sweden in 1989.

In 1990, GM launched Saturn, its first new line of cars in decades, as an independent operating subsidiary. Jack Smith was named chairman in 1991, and the company began a turnaround. It experienced its best net income ever in 1995. But the company's market share continued to drop and was only about 28 percent in the late 1990s. EDS was sold in 1996 as the company sought to streamline its operations. By the late 1990s, its sales were slightly less than \$200 billion per year.

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Getty, J. Paul (1892–1976) *oil magnate* Jean Paul Getty was born in Minneapolis, Minnesota, on December 15, 1892, the son of an insurance lawyer. In 1903, his father relocated the family to Oklahoma to engage in the nascent oil industry. The endeavor proved successful, and young Getty gradually acquired an intimate knowledge of wildcat oil practices. After working on his father's rigs for several years, he briefly attended college in California and Oxford, England, but failed to graduate. Instead, Getty came home to concentrate his energies on starting a business of his own. In 1916, he acquired his first lease in Oklahoma, struck oil, and gradually acquired a small fortune. However, Getty's profligate lifestyle gradually alienated him from his father; after his father's death in 1930 he was also on increasingly strained terms with his mother. The source of trouble was Getty's single-minded determination to become rich: He exhibited real flair and intelligence as a businessman but proved utterly ruthless in the pursuit of lucre. He was also apparently incapable of sustaining longterm relationships. Over the course of his long life, he was married and divorced no less than five times and was on less than salubrious terms with his three surviving sons. Nonetheless, by 1929 Getty was well on the way to becoming a multimillionaire, and the onset of the Great Depression only accelerated that trend. As the national malaise increased, he quickly bought up millions of dollars in stocks at a fraction of their costs, confident-and correctly so-that their value would increase with time. By 1936, his success spurred him to acquire Pacific Western, the largest oil concern in California. That same year, he also engaged in an internecine struggle with Standard Oil of New Jersey to gain control of the Tidewater Associated Oil Company, another large and lucrative business. In 1936, he had to settle for controlling 40 percent of company stock, but in 1950, he had finally consolidated his hold.

By 1939, Getty was one of the world's richest men, and he frequently visited Europe to acquire rare art, his lifelong passion. He also socialized with many of Nazi dictator Adolf Hitler's circle, which made the American government suspect his loyalties. Accordingly, when the United States entered World War II in 1941, Getty applied for a naval commission but was denied. He nevertheless acquired control of the Spartan Aircraft Company and produced training aircraft for the armed forces. After the war, Getty took his interest in oil exploration overseas. In 1949, he paid the kingdom of Saudi Arabia \$30 million for rights to explore the Neutral Zone between that nation and Kuwait. After many unsuccessful years of drilling, Getty tapped into the fabulous oil reserves of the Middle East. By 1956, he was touted as the world's richest man and its first acknowledged billionaire. Getty himself simply shrugged off celebrity and concentrated on what he did best-making money. By 1957, he had consolidated control over the three pillars of his commercial empire-Tidewater, Mission, and Skelly Oil-which were subsequently amalgamated into the new Getty Oil Company. Thanks to Getty's foresight, this functioned as a completely self-contained entity managing its own exploration, refining, marketing, and distribution of petroleum products. Its dramatic success further demonstrated Getty's business acumen and his indomitable will to prevail.

With time, Getty also acquired a reputation, deservedly or not, for a degree of eccentricity rivaling that of his great contemporary, Howard HUGHES. He deliberately cultivated a miserly, grasping persona, reinforced by stories of his rumpled outfits, his refusal to leave tips at restaurants, and the installation of payphones on his lavish European estate. Most stories, in fact, were exaggerated, but Getty did little to disown them. He also gained renown as a serious art collector who built a world-class institution, the J. Paul Getty Museum, to house and display his treasures. When he died at his mansion in Sutton, England, on June 6, 1976, he endowed the museum with \$2 billion, rendering it the world's richest. Getty may have been a curmudgeon by nature and difficult to influence on a personal level, but his spectacular career in the unpredictable oil industry underscores his reputation as the 20th century's foremost oilman.

See also PETROLEUM INDUSTRY.

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John C. Fredriksen

Girard, Stephen (1750–1831) businessman and entrepreneur Born in Bordeaux, France, Girard came to America in 1776. Leaving school at an early age, he became a cabin boy on a ship when he was 14. At age 20, he became a seaman and owner of several merchant ships. After an unsuccessful venture as a commercial seaman, he settled in Britain's American colonies, working for the firm of Thomas Randall & Son. A rough voyage from Europe caused his ship to drop anchor in Philadelphia as the Revolutionary War broke out. When the British departed the city, he took an oath of allegiance to Pennsylvania. During the war, Girard became a merchant in Mt. Holly, New Jersey, outside Philadelphia. He became a citizen in 1778 and settled in the United States permanently. When the war ended, he moved to Philadelphia and continued his career as a merchant and owner of a small fleet of ships.

Using money he made in his ventures, he established an office in Philadelphia and began trading sugar with Santo Domingo and financing American privateers against the British. He eventually developed his own fleet of 18 ships, many of which were named after French philosophers. Using his profits, he then branched into banking and real estate. He became an avid supporter of the BANK OF THE UNITED STATES. When the first bank was closed after Congress refused to renew its charter, he bought the premises and turned it into the Bank of Stephen Girard, which had capital of more than \$1.3 million, one of the few banks in the country so highly capitalized. Although initially he encountered resistance from other Philadelphia bankers, the bank became successful very quickly. By buying the bank, Girard quickly became Philadelphia's best-known banker.

In his role as banker he became one of the major subscribers to a war loan to the U.S. Treasury in 1812 that helped raise desperately needed cash to fight the war against the British. In 1813, he joined with John Jacob ASTOR and David Parrish and subscribed to \$10 million of the \$16 million loan at a sharp discount. The support helped to arouse public opinion during the war, helping to contribute to eventual victory.

Later in life, Girard invested in coal mining lands in Pennsylvania and the early RAILROADS. He gave generously to Philadelphia to establish a trust for the education of orphans. He died in 1831. His legacy was that of banker and lender to the Treasury at a particularly difficult time in relations with Great Britain.

See also BARING BROTHERS.

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Glass-Steagall Act See BANKING ACT OF 1933.

Goldman Sachs & Co. An INVESTMENT BANK-ING company founded by Marcus Goldman immediately after the Civil War. Goldman arrived in the United States from Bavaria in 1848 and became an itinerant merchant. He opened a small finance house 20 years later near Wall Street and began trading in commercial bills, which later would become known as COMMERCIAL PAPER.

In 1880, Goldman took his son-in-law Sam Sachs as a partner, and in 1885, the firm was renamed Goldman Sachs & Co. Before World War I, the firm entered into an agreement with LEHMAN BROTHERS that allowed the two firms to share underwritings for new stock issues. One of their first joint ventures was the underwriting for a common stock issue of SEARS ROEBUCK & CO., the large retailer. Over the next 20 years, the two shared more than a hundred underwritings, many for retailers, which catapulted Goldman to prominence on Wall Street. In the 1920s, prior to the crash, of 1929, the firm embarked upon marketing its own investment trusts. The trusts did not fare well in the aftermath of the crash, and the firm's reputation was tarnished as a result. The chairmanship then passed to Sidney Weinberg, who had joined the firm originally as a janitor's assistant before the war. Under his leadership the firm continued to grow and severed its relationship with Lehman.

Goldman's most notable success in the years following World War II was the initial public offering of Ford Motor Co. The firm had never sold shares under Henry Ford's leadership, but his grandson brought the company to market with Weinberg's help. The deal secured the firm's position as one of Wall Street's notable equity houses, and by the time Weinberg died in 1969 its reputation was secure. Commercial paper continued to be one of its specialties in addition to a full array of investment banking services.

In the 1970s and 1980s, the firm began to expand internationally but remained a partnership. Many of its senior members also served in several administrations in Washington, in various capacities ranging from economic advisers to Treasury secretary. Robert Rubin, a partner, served in the Clinton administration as secretary of the Treasury. Continual pressures to expand and a few isolated poor financial years led the firm to consider a public offering. The issue was planned for 1998 but was postponed because of the troubles in the marketplace created by the downfall of LONG-TERM CAPITAL MANAGEMENT. It finally was brought to market in 1999, making Goldman the last major Wall Street investment bank to go public.

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gold standard The term used to describe a national currency that is backed by gold. There are two types of gold standard: the gold bullion standard and the gold exchange standard. The gold bullion standard is the type that the United States maintained in the years following the Civil War, while the gold exchange standard traditionally has been used by smaller countries whose currency is tied to another that uses the bullion standard.

Under the bullion standard, a country establishes an official price for gold using a fixed value of its own currency. Banknotes and other paper money are then declared convertible into gold at the fixed rate. Most advanced industrial nations used this standard from about 1870 to the beginning of World War I. In 1890, the Sherman Silver Act temporarily introduced silver as part of a bimetallic standard, but there was little widespread support for the metal. It was officially dropped as part of the standard. The United States officially joined the gold standard with the Gold Standard Act of 1900, which unequivocally stated that only one metal would be the standard, thereby demoting silver to obscurity. Unstable conditions in the world economy after the Great War led to the demise of the classic standard in the 1920s. The chaotic international trading conditions caused by the Depression in the 1930s led to the inauguration of the bullion standard. Under the Gold Reserve Act of 1934, all monetary gold in the United States was nationalized, and citizens were not allowed to hold gold except for industrial purposes. The prohibition lasted almost 50 years.

Adhering to the gold standard helped many countries maintain the discipline demanded by the official rate, although clearly there was more demand for gold reserves at the world's central banks than there was supply. In the Bretton Woods era, after the end of World War II, the United States officially maintained gold at \$35 per ounce, and other currencies were given a value in U.S. dollars, extending the gold exchange standard for smaller countries' currencies. The system lasted until 1971, when the United States officially pulled the dollar off the standard by devaluing the currency unilaterally. Foreign central banks held more dollars than the United States could redeem, and the currency was devalued as a result. Within a year and a half, the major currencies began to float freely against each other in the FOREIGN EXCHANGE MAR-KET, and the last vestiges of the gold standard vanished in a move toward easier and more flexible money and monetary policies.

See also BRETTON WOODS SYSTEM.

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Gompers, Samuel (1850–1924) *labor leader* Gompers was born in London and moved to the United States with his family when he was 13. He began rolling cigars with his father at an early age and became involved with labor unions when he was 14, becoming the first member of the Cigar Makers International Union. Soon he became a skilled cigarmaker, in demand by many companies that manufactured tobacco products.

Although he received a scant education, Gompers nevertheless studied socialism while in his 20s, and he participated in meetings of the International Workingmen's Association and the Workingmen's Party of the United States. In 1875, he became the president of a local union. In 1881, he helped organize the Federation of Organized Trades and Labor Unions of the United States and Canada (FOTLU), a congress of national and local labor unions designed to educate the public on working-class issues and to lobby the U.S. Congress. As an officer of FOTLU, Gompers advocated compulsory school attendance laws, the regulation of child labor, and the eight-hour work day. He became president of the American Federation of Labor in 1886 and held the post for the next four decades.

Gompers believed that economic power preceded political power, and therefore unions should bargain and negotiate directly with employers so that their members could attain an economic status that they could then translate into political action. To this end, he constantly sought to protect the workingman from privations and what he called little tyrannies that could deprive workers of a better quality of life. He believed that government should refrain from becoming involved in the process and that political influences should also be excluded. He was a firm supporter of the CLAYTON ACT when it was passed in 1914, often hailing it as the Magna Carta of labor. The act exempted unions from some of its ANTITRUST provisions. He asserted that unions should be exempt from antitrust actions because there was a philosophical difference between a man's labor and the goods he produced, since the goods could be exploited by corporate management. He also championed a host of labor reforms, including higher wages, shorter working hours, and safe and clean working conditions.

After World War I, Gompers represented labor at the Versailles Peace Conference. He died in 1924 in San Antonio, Texas, and has been hailed as one of the giants of the American labor movement.

See also LEWIS, JOHN L.

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Goodrich, Benjamin Franklin (1841–1888) *rubber goods manufacturer* Goodrich was born in Ripley, New York, the son of farmers. Orphaned at an early age, he was brought up by his mother's brother. Attracted to medicine, Goodrich served as an assistant surgeon on the Union side during the Civil War. Goodrich sought success as a doctor immediately after the conflict, but failed.

Moving to New York City, he had some success in real estate ventures and, most importantly, became acquainted with America's nascent RUBBER INDUSTRY. With a friend, he invested in the Hudson River Rubber Company and, when that business had difficulties, became deeply involved in its affairs to protect his investment. Optimistic about the future, Goodrich married in 1869 and a year later moved his rubber business from New York to Ohio. Locating in Akron, Goodrich set up a partnership—in 1880 becoming a corporation, the B. F. Goodrich Company—to manufacture and sell rubber products. Relying on funds from friends, family, and Akron's business elite, Goodrich established the first rubber manufac-

turing venture west of the Appalachians. He did so to escape ruinous competition from wellestablished eastern firms. Following a policy of diversification, Goodrich's business turned out fire hoses, rubber belting, and many other items-in fact, just about everything made from rubber, except boots and shoes, which were made by the large eastern rubber concerns. By the time of Goodrich's death of exhaustion and tuberculosis in a Colorado sanatorium, his firm had become a regional powerhouse with assets of \$564,000, profits of \$107,000, and sales of \$696,000. B. F. Goodrich-as the company was later known-went on to become one of America's "Big Four" rubber manufacturers in the mid-20th century and an important firm in the nation's aerospace and chemical industries in the late 20th century.

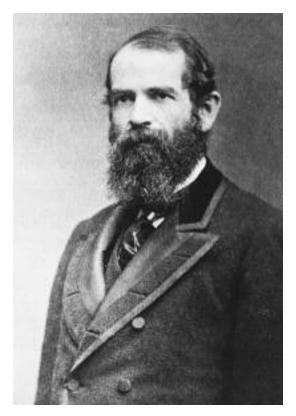
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Mansel G. Blackford

Gould, Jay (1836–1892) *businessman and financier* Born in Delaware County, New York, Gould had a tumultuous childhood but showed promise in school. He taught himself surveying and wrote *A History of Delaware County* while still in his teens. But the lure of business would dominate his life. After leaving upstate New York, he worked in the leather tanning business in eastern Pennsylvania before finally moving to New York City, where he had been speculating in the futures market for leather hides.

In the Panic of 1857, Gould lost most of the money he had made speculating. He soon joined forces with Daniel DREW and James "Jubilee Jim" FISK and began speculating in the stock market. He established a sizable position in the stock of the ERIE RAILROAD and became a director of the company. During his tenure at the railroad, he was suspected of looting its books for his own use and was summoned to testify before a congressional committee investigating the railroad's management. Then in 1869 he engaged in his most famous market operation when he staged the "gold corner," in an attempt to drive up the price of gold in the market. Using borrowed money, he attempted to purchase most of the gold circulating in the New York market, forcing its price up and ruining his enemies in the process. The plan depended upon the reluctance of the U.S. Treasury to intervene. By selling its own supply of gold, the price would be forced down. Rumor abounded that Gould had made an unwitting ally of President Ulysses S. Grant by convincing him that intervention was not necessary. Eventually the Treasury did intervene, and



Jay Gould (LIBRARY OF CONGRESS)

the price of gold fell. Gould was already out of the market, having made his fortune.

The "gold corner" made Gould one of the most vilified men in the country. The fallout from the operation caused a stock market panic in 1869, dubbed "Black Friday," and dozens of investors and brokers were ruined in the process. The incident prompted hundreds of unfavorable newspaper accounts and books dedicated to exposing Gould and the Erie. Subsequently, Gould was forced out of the Erie Railroad but not before dueling with Cornelius VANDERBILT for control of the company and absconding across the Hudson River with a horde of cash and the company's books. His lieutenant at the time was Jim Fisk. He reentered the railroad business by assuming a large position in the stock of the Union Pacific and was granted a board seat in 1874. This marked something of a turnabout in his career. After assuming control of the company, he merged it with the Kansas Pacific in 1880 and strengthened the RAILROADS considerably. By the early 1880s, he controlled nearly 10,000 miles of railroad track in the country, including the Union Pacific and the Missouri Pacific.

Later in life, Gould began to diversify his interests. Becoming interested in communications as well as railroads, he purchased the *New York World*, one of the best-known New York newspapers, along with WESTERN UNION and the Manhattan Elevated Railway Co. He died of tuberculosis in 1892. Although he had a diversified career, Gould is best remembered as being one the country's most notorious ROBBER BARONS, due to his early reputation at the Erie Railroad, the gold corner, and association with Jim Fisk. His family became one of New York's most prominent and wealthy for 50 years after his death.

See also MUCKRAKERS.

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government-sponsored enterprises GSEs are privately owned companies chartered by the federal government to serve public purposes in the financial markets. GSEs include some of the largest financial institutions in the United States, such as Fannie Mae (the FEDERAL NATIONAL MORTGAGE ASSOCIATION) and Freddie Mac (the Federal Home Loan Mortgage Corporation). Those two GSEs each fund more than a trillion dollars of home mortgages and dominate the U.S. housing finance system.

Government subsidizes the organizations by giving them exemptions from taxes and regulations that apply to other companies. The most important subsidy that government gives to GSEs is the ability to borrow money inexpensively, at rates close to those of the U.S. Treasury. The government does this by creating the perception that it will not permit GSEs to default on their financial obligations.

This so-called implied government guarantee means that taxpayers could be called upon to provide resources if a GSE ever fails. When one GSE, the FARM CREDIT SYSTEM, announced in 1985 that it could not meet its obligations, the government arranged for funding to allow the system to continue in business. The Wilson administration created the Farm Credit System (FCS) as the first GSE in 1916. The FCS was a borrower cooperative that helped farmers to obtain credit at a time when most financial institutions concentrated their lending in urban areas. In economic terms, the FCS helped to overcome a significant market imperfection.

Government established the second GSE, the Federal Home Loan Bank System, in 1932 to help the savings and loan (S&L) industry to deal with the financial devastation caused by the Great Depression. Savings and loan associations owned the Federal Home Loan Banks and used them to provide credit to help the S&Ls to fund home mortgages. As a result, some liquidity was preserved in the industry, and the market for residential mortgages was preserved in the face of bank failures, common during the depression. The Reconstruction Finance Corporation, the giant New Deal federal agency, chartered the Federal National Mortgage Association in 1938 to help cope with the impact of the Great Depression on the home mortgage market. In 1968, the government divided the agency into two parts, the Government National Mortgage Association (Ginnie Mae), which remained within government, and a privately owned company called the Federal National Mortgage Association (Fannie Mae). Fannie Mae is an investor-owned company with shares that trade on the NEW YORK STOCK EXCHANGE.

In 1970, the savings and loan industry persuaded Congress to create the Federal Home Loan Mortgage Corporation (Freddie Mac), as a GSE with powers similar to those of Fannie Mae, but that would be owned by savings and loan associations. In 1989, after the collapse of much of the S&L industry, Congress changed the ownership structure so that it, too, was owned by private investors.

In their early years, Fannie Mae and Freddie Mac helped to standardize mortgage forms and to make the home mortgage market more efficient. Thanks to their implied government backing, the two GSEs are able to issue hundreds of billions of dollars of debt obligations and mortgage-backed securities that help to reduce the cost of homeownership by perhaps one-quarter of a percentage point, in terms of the interest rate that consumers pay on their mortgages. The two mortgage assistance agencies have purchased approximately 60 percent of residential, conforming mortgages from originators as a result.

The government has also created two other GSEs, Sallie Mae (the Student Loan Marketing Association) and a small struggling GSE known as Farmer Mac (the Federal Agricultural Mortgage Corporation). Sallie Mae supported legislation that in 1996 provided for a transition period for removing government sponsorship from the company. As a completely private company, Sallie Mae will be able to enter new lines of business that today are precluded by the terms of its federal charter. Recently GSEs have become controversial as a tool of government. As the financial markets, and especially the home mortgage market, have become more efficient, the GSEs have lost much of their original ability to overcome the market imperfections that previously existed. Thus, when Fannie Mae and Freddie Mac deployed new automated mortgage underwriting systems in the 1990s, some large commercial banks and other competitors charged that the two GSEs were using their huge size and market power to dampen rather than promote innovation.

The two GSEs have evolved from providers of supplementary assistance to the home mortgage market to become predominant funders. Their government subsidies have permitted the two companies to double in size every five years since 1970. Because of the immense political influence that accompanies the market power of the GSEs, it is not clear whether government can devise an exit strategy so that they can give up their government sponsorship to become completely private competitors in today's efficient financial markets.

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Thomas H. Stanton

Great Atlantic & Pacific Tea Co. (A&P) Better known as the A&P, the company was founded as the Great American Tea Company on Vesey Street in lower Manhattan in 1859 by George Huntington Hartford and George Gilman. It originally was a merchandiser of tea, coffee, and spices bought in bulk from suppliers. By purchasing tea directly from ships, the two discovered that they could lower the cost by two-thirds and still make a profit. They spent heavily on their marketing efforts, including advertising in magazines and newspapers and sponsoring a horsedrawn wagon with the company's name on it.

The store became so successful that they were able to open many more in surrounding areas. It was renamed the Great Atlantic & Pacific Tea Company in 1870. In the late 19th century, it began offering groceries in addition to tea. In 1880, the company introduced the first private label product—baking powder. Over the next 40 years, private manufacturing became an important aspect of its business, and by the end of World War I, A&P had opened its own factory and packing plant.

In 1912, John Hartford, a son of the founder, introduced the concept of "cash and carry" to retailing by allowing customers to come in to the store and take their purchased goods home with them rather than have them delivered, as was the norm. The idea was so successful that the company opened more than 1,600 new stores in the next two years.

By 1916, the stores' sales had increased to more than \$76 million per year. The company continued to expand during the retailing revolution of the 1920s, reaching 10,000 stores in 1923. By 1925, the company had almost 14,000 stores and sales of almost \$450 million. In the 1930s, many of the stores were converted to supermarkets. By the 1930s, A&P had become the top-grossing grocery store with almost 16,000 stores and sales of more than \$1 billion.

The new stores reduced the number of old stores but increased volume and sales exponentially. By 1950, only GENERAL MOTORS had greater annual sales among American companies. During the 1960s and 1970s, sales slumped, and the company reorganized and began to expand by making new acquisitions. It continued to do so into the 1990s and reestablished itself as one of the country's leading supermarket chains. Today,



Front window of a Great Atlantic & Pacific Tea Co. store (New YORK PUBLIC LIBRARY)

the Great Atlantic & Pacific Tea Company comprises a group of supermarkets, including A&P, Waldbaum's, and the Food Emporium, among others.

See also CHAIN STORES.

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greenbacks Paper money first issued by the U.S. Treasury during the Civil War. Unlike other notes in circulation, issued by state banks, greenbacks did not have gold or silver backing. In the 19th century, this was called "nonredeemable into specie." As a result, greenbacks were originally viewed with great suspicion by critics who thought that the money was worthless. Unpopular when first issued in February 1862, they accounted for almost three-quarters of all notes in circulation within three years.

Opponents of greenbacks, technically nonconvertible paper money, saw their issuance as an unfair advantage to the federal government since most notes issued by banks in the individual states were required to be converted into specie (silver or gold) by the issuer. Opponents of big business and government in the 19th century, notably agrarian radicals, saw the issuance of money as a government monopoly that could be influenced by big business to serve its own ends. But the federal government was burdened with financing the Civil War and needed a way to issue money without potentially draining the Treasury. As a result, it issued the notes and at the same time borrowed large amounts of TREA-SURY BONDS, used to finance the war effort.

The bonds backing the notes paid their interest in gold coin to satisfy the fears of those who believed that the Treasury would bankrupt itself by issuing worthless money. At the same time, greenbacks could be used to buy Treasury bonds paying 6 percent interest, maturing in 20 years but redeemable after five years. These bonds were known as the 5–20s and became very popular due to the selling efforts of Jay Cooke & Co., which represented the Treasury in a nationwide sale of the bonds.

Greenbacks began to disappear from circulation in 1879, when the Treasury again began redeeming them with specie. The United States, along with Britain, then embarked on a GOLD STANDARD, which lasted until the 20th century, when nonconvertible paper money became the standard rather than the exception to the rule. The term has survived since the Civil War to denote paper money in general and American dollars in particular.

See also COOKE, JAY.

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Greenspan, Alan (1926–) chairman of the Federal Reserve Board Alan Greenspan was born in New York City on March 6, 1926, the child of divorced parents. After attending public schools he briefly matriculated at the prestigious Juilliard School of Music but subsequently left to tour with a jazz band. Greenspan finally graduated from New York University with a master's degree in economics in 1950, but three years later, he failed to complete his doctorate at nearby Columbia University. However, he had become a disciple of business writer Ayn Rand, who championed the free market and discouraged government intervention in the economy. After befriending Alan Burns, a future economist of note, Greenspan hit upon the idea of formulating economic analyses and forecasting for senior executives. He then founded the consulting firm of Townsend-Greenspan and Company, which proved extremely successful and included such prestigious clients as Alcoa Aluminum, Capital Cities/ABC, J. P. Morgan, and the Mobil Corporation. Greenspan had by then become an extremely wealthy individual, and his success in business did not go unnoticed in the political realm. In 1968, presidential aspirant Richard Nixon proffered him a post as economic adviser, and in 1974 Arthur Burns, now head of the FED-ERAL RESERVE, tendered him the position of chairman of the Council of Economic Advisors. The national economy was beset by rising inflation, and Greenspan accepted the challenge out of a sense of public duty. Under his tight-fisted tutelage, inflation dropped from 11 percent to 6 percent in three years, a considerable success. In 1977, Greenspan abandoned the public sector and returned to economic consulting. However, his expertise had indelibly impressed the political establishment, especially those adhering to Republican political philosophies. The turning point in his career occurred in 1987, when Treasury Secretary James Baker suggested him to replace outgoing Paul A. VOLCKER as chairman of the strategically important Federal Reserve. The nomination may have raised eyebrows considering Greenspan's inclination to avoid the limelight, but his rumpled, bespeckled persona belied a disciplined aptitude for economic policy.

Commencing in 1989, Greenspan enacted his trademark fiscal austerity programs to control the onset of inflation, but his main goal was to promote economic growth. Lending practices were subsequently tightened, but he occasionally allowed an infusion of cash into the economy to prevent it from sputtering. By 1992, he had managed to usher in a period of general prosperity, although it occurred too late to help the presidency of George H. W. Bush. During the first term of President Bill Clinton, inflation spiked upward again, but Greenspan steadfastly refused to inflate the money supply. In fact, he actually raised interest rates to cool off the otherwise bounding economy. This brought on a degree of tension with the White House, which was prepared to accept some inflation in return for fuller employment, but in 1996, President Clinton surprisingly nominated Greenspan for another four years as chairman. Consequently, unemployment for the remainder of Clinton's second term in office was only 4.7 percent, inflation dropped to only 2 percent, and

the national economy boomed. It was a period of unprecedented prosperity and growth.

Such was Greenspan's reputation that in 2000 he was nominated for another term as chairman by Clinton. But halfway through George W. Bush's first term, the nation was beset by a serious downturn and unemployment rates exceeding 6 percent, so Greenspan continually adjusted interest rates lower to stimulate growth. He boldly and confidently predicted a return to better conditions within a few months, and few among the political establishment either confronted or questioned his sagacity. Unquestionably, Greenspan is one of the most influential chairmen of the Federal Reserve, and his tenure has been generally marked by unrivaled growth, low inflation, and prosperity.

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John C. Fredriksen

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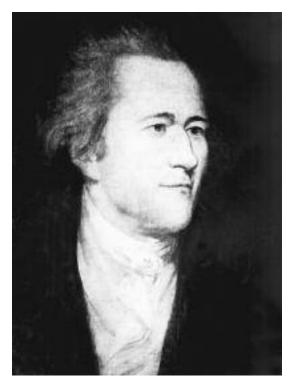
Hamilton, Alexander (ca. 1755–1804) *politician* Hamilton, an American politician and first secretary of the Treasury, was born on the island of Nevis in the West Indies in 1755. As a boy, he worked for a trading company in St. Croix before being sent to America for further education by his employer. He attended school in what is today Elizabeth, New Jersey, before further study at King's College in Manhattan (today Columbia University).

Hamilton served in the New York artillery during the Revolutionary War and was a secretary and assistant to George Washington from 1777 to 1781. He was admitted to the bar in New York in 1782 and also became a delegate to the Congress of the Confederation from New York in the same year. During the Constitutional Convention held in Philadelphia in 1787, he, John Jay, and James Madison wrote a series of letters to newspapers urging approval of the new Constitution. These letters were later collected and reprinted as The Federalist. He became secretary of the Treasury under Washington in 1789. Disputes with Madison and Jefferson in the early 1790s led to the development of the Federalist Party, which he led at a critical period in American political history.

As first secretary of the Treasury, Hamilton attempted to put the United States on a sound financial footing, especially since debt was consuming more than 50 percent of annual government revenues. He had a plan, as did a successor, Albert GALLATIN, to totally extricate the country from debt within 15 years, but the Louisiana Purchase would intervene.

Hamilton's main contributions to business were twofold. As Treasury secretary, he favored establishing a national bank and also opposed excessive government spending. He also supported businessmen, whom he believed were the lifeblood of the nation. His essay *The Report On Manufactures* (1791) strongly supported early forms of manufacturing as a way of developing a strong economy, less dependent upon agriculture and imports of finished goods from Britain. In his view, independence in manufacturing would guarantee economic and political independence in the future.

Hamilton resigned as Treasury secretary in 1795 but continued to be involved in politics, taking opportunity to criticize John Adams, a Federalist, as well as Aaron Burr, whom Hamilton opposed as a gubernatorial candidate in New



A wood engraving of Alexander Hamilton (LIBRARY OF CONGRESS)

York in 1804. His opposition to Burr led to their famous duel, in which Hamilton was severely wounded. He died a day later, in 1804.

See also DUER, WILLIAM.

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Harriman, Edward Henry (1848–1909) financier and railroad developer Born in Hempstead, Long Island, New York, by age 14 Harriman was employed on Wall Street. In 1870, Harriman became a member of the NEW YORK STOCK EXCHANGE, specializing in railroad securities. He married Mary Averell in 1879; one of their six children, William Averell Harriman, became a respected statesman and foreign policy expert.

Harriman's association with financier Stuyvesant Fish enabled him to modernize and reorganize the Illinois Central Railroad. Growing conflict with Fish led Harriman away from the Illinois Central and toward the UNION PACIFIC RAILROAD. Harriman realized that Union Pacific's performance could be improved by restructuring its debt and by making massive physical improvements to accommodate the traffic potential of a region that was beginning to emerge from the depression of the 1890s. Within 10 years, Harriman had orchestrated the expenditure of \$160 million in capital improvements.

In addition to his commitment to modernization, Harriman understood the value of communities of interest-essentially, interlocking directorates-in the railroad industry in order to prevent overbuilding, guarantee equitable access to the traffic of connecting RAILROADS, and control competition. Harriman envisioned these communities of interest as the precursors of giant rail systems in the West. To that end, he acquired control of the Southern Pacific Railroad in 1901 and began to "Harrimanize" it in much the same manner as the Union Pacific. The Illinois Central, the UP, and the SP formed the core of the Harriman system-three technically separate corporations with similar organizational structures and philosophies, employing standardization to reduce the cost of purchasing, operations, and maintenance.

These communities of interest ran counter to the reformist impulses of the Progressive Era and won Harriman the personal displeasure of President Theodore Roosevelt. Harriman's public disagreements with former ally Stuyvesant Fish and his association with the financially ailing Equitable Life further tarnished his reputation. In 1907, the INTERSTATE COMMERCE COMMISSION launched an inquiry into Harriman's railroad and financial enterprises.

Harriman pledged his corporate and personal resources to a variety of public works. While Harriman never established a charitable trust, as did so many other philanthropists, he was instrumental in the creation of a state park near his New York home, sponsored a scientific expedition to Alaska, assisted victims of the 1906 San Francisco earthquake, and helped save California's Imperial Valley from flooding. Harriman succumbed to stomach cancer in 1909.

See also BROWN BROTHERS HARRIMAN.

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Albert Churella

Harvard Business School Established in 1908, the school became the first postgraduate school of business to require an undergraduate degree for admission. The first dean was Edwin F. Gay, and the new graduate program lasted for two years, leading to the master of business administration, or MBA, degree. The original faculty numbered 15, with 33 regular students and 47 special students. According to an original school announcement, "the school does not pretend to graduate men who will begin at the top or high up in their several lines of business. It does aim to teach them how to work and how to apply powers of observation, analysis, and invention to practical business problems."

Among the first faculty members were Herbert Knox Smith, commissioner of corporations, James Jackson, ex-chairman of the Massachusetts Railroad Commission, and Frederick W. TAYLOR, the efficiency engineer. In 1912, the school used its first "case study," adopting an idea used widely in law whereby a particular case is studied both on its own merits and in the context of similar cases that have gone before. In 1924, it adopted case studies as its primary educational teaching technique. In the same year, George F. BAKER donated \$5 million, and the school opened its own campus in Boston on the Charles River. Within a few years, it had more than 750 full-time students living on campus. The *Harvard Business Review*, a leading management journal, was begun in 1922.

In 1963, the school admitted women to the MBA program for the first time. The school expanded its offerings to both MBA and doctoral students over the years, and its publishing arm, the Harvard Business School Press, became a diversified publisher of management books after its inception in 1993. The institution continually ranks among the top graduate business schools in the country and is a leader in postgraduate management education. One of its graduates, George W. Bush, became the first MBA to be elected president.

See also WHARTON SCHOOL.

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Hawley-Smoot Tariff Act A protective tariff introduced in Congress by Representative Willis Hawley and Senator Reed Smoot in 1930. At the time, it became the highest tariff ever introduced in the United States. Widespread disaffection plagued the tariff when it was introduced, but Congress passed it. President Hoover signed it into law in June 1930.

The law was passed in the aftermath of the Crash of 1929, at a time when international trade

was beginning to decline and domestic unemployment was rising. It was similar in many respects to the Fordney-McCumber Tariff Act in 1922. Hoover favored a tariff that would moderately increase duties levied on farm products and select manufactured goods. However, the House and Senate versions of the bill contained a long list of items subject to the tax, and the final product emerging from both versions was harsh and extensive.

More than 900 items could be found in the bill. Disputed items were sent to a Tariff Commission, which had the power to investigate inequities in trade and make recommendations to the president. The chief executive had the power to set TARIFFS that would equalize the price of an import so that it did not unfairly compete with American-produced goods. Several hundred economists sent the president a letter protesting the tariff, but Hoover decided to employ it when he believed conditions warranted.

The tariff was so severe that it caused an international reaction; many other countries enacted protective tariffs in retaliation. The result was a slowdown in world trade, which exacerbated the Depression and led to problems in the FOREIGN EXCHANGE MARKET that were addressed later in the 1930s when the United States and Britain both abandoned the GOLD STANDARD.

Another repercussion of the act was the new monetary system constructed after World War II at Bretton Woods, New Hampshire. Part of the reason for establishing the International Monetary Fund was to dissuade countries from acting unilaterally in the future when considering devaluations of their currencies, which in the immediate past had been tied to tariff decisions.

See also Bretton Woods system; foreign investment.

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Hill, James J. (1838–1916) *railroad builder* Hill was born in Ontario and moved to St. Paul, Minnesota, at age 16 after the death of his father. He found work with a steamboat line and soon became a partner in the company. After several other ventures in transportation, he bought, along with two partners, the St. Paul & Pacific Railroad. The line became the basis for the Great Northern Railway Company that would earn him the name "Empire Builder."

Hill envisaged this railroad as reaching the West Coast and set about building the line through the northern tier of states. From Minnesota, he reached Montana by 1887 and Seattle in 1893. The railroad was notable for being built without any federal government assistance, and, unlike many of the earlier RAILROADS, it suffered no financial scandals or setbacks. The completed line ran from Lake Superior to the Pacific. While a masterful piece of engineering, the line competed with the Northern Pacific Railroad, which had been bankrupted in the Panic of 1893. Hill helped reorganize the line, but the courts would not allow a merger between the two rivals. The Northern Pacific was taken over by interests led by J. P. Morgan, a Hill ally. The two again joined forces to attempt to purchase the Chicago, Burlington & Quincy line serving Chicago, in an attempt to prevent E. H. HARRIMAN from buying the line. The battle spilled over to the stock market, causing the Panic of 1901.

As a result, Morgan, Harriman, and Hill established the Northern Securities Company to act as a HOLDING COMPANY for the Great Northern and Northern Pacific. But the company was held in violation of the Sherman Antitrust Act in a Supreme Court decision, the United States v. Northern Securities Co., in 1904. Hill retired as president of the Great Northern in 1907. He also helped construct the Canadian Pacific Railroad and was the author of Highways and Progress, published in 1910. He financed and built a library named after him in St. Paul. Unlike many other railroad tycoons of the 19th century, Hill's reputation was built upon the soundness of his ideas, lack of government assistance, and the absence of financial scandal surrounding his operations.

See also MORGAN, JOHN PIERPONT.

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holding company A form of industrial organization designed to hold the stock of other companies. In a typical holding company, the parent company is not an operating unit but simply an administrative one, with the subsidiary companies producing actual goods or services. The use of holding companies is quite common and crosses a wide range of business sectors. The first holding company was organized by John D. Rockefeller as a trust in Ohio, the Standard Oil Trust. The term trust was the immediate predecessor of the term holding company although its aims were the same. In a trust, a company holds the stock of other companies in trust. The original Standard Oil Trust did not have stock as such but trust certificates. The purpose of organizing a wide group of businesses into a trust was to control production and prices. Usually, the trust certificates were held by a small group of directors who effectively controlled large sections of an industry. After Standard Oil was moved to New Jersey in 1899, the holding company began to supplant the trusts.

Ordinarily, holding companies are organized as acquisition vehicles so that other companies may be brought under the same control. They began to grow after World War I as many companies began to expand, often establishing themselves in friendly political or tax jurisdictions. Holding companies may also be organized in order to relocate tax liabilities in friendly jurisdictions or to avoid unfriendly legal jurisdictions. The Standard Oil Company moved its headquarters from Ohio to New Jersey when its charter was challenged by Ohio after incorporation in that state.

In certain industries, holding companies have been regulated. The PUBLIC UTILITY HOLDING COMPANY ACT (1935) and the BANK HOLDING COMPANY ACT (1956) both sought to curtail holding companies in those industries so that they did not circumvent other legislation specifically designed to restrict their expansion activities. Subsequent DEREGULATION eased the original restrictions on many companies established during the NEW DEAL.

After World War II, the CONGLOMERATES also employed holding companies effectively as a means of establishing a portfolio of diverse companies under the same roof. By the 1960s, the holding company was the predominant form of industrial organization used by large companies, since many were multinational, and the holding company was used to establish foreign subsidiaries and other international operations.

See also Antitrust; Geneen, Harold S.; General Electric; Securities Exchange Act of 1934.

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Hudson's Bay Company The Hudson's Bay Company is one of the longest-lived business organizations in history. It was chartered by the British Crown in 1670 to trade for furs in the drainage basin of Hudson Bay. Indeed, for much of its life, it was primarily a fur-trading company, purchasing a wide variety of furs, but mainly beaver pelts, at posts along the coast of Hudson Bay and inland and transporting them by ship directly from the bay to Britain. Despite the company's prominence in the fur trade literature, it was in the early years a relatively minor player in the fur market, accounting for less than 10 percent of North American exports. Instead, the trade was dominated first by French and then by Scottish traders operating out of Montreal and farther south.

In 1821, after a long and often bitter rivalry, the Hudson's Bay Company absorbed the North West Company and thereby established a monopoly over much of the fur-trading hinterland. By that time, however, the intense competition had led to severe depletion of animal populations, and, to allow stocks to recover, the company introduced strict conservation measures. These measures were generally successful, but by the mid-19th century the fur industry had become a minor part of Canada's economic life. Shortly after confederation in 1867, the Hudson's Bay Company surrendered its charter to the Crown, thus giving up its claim to the region. In return the company was paid £300,000 and was permitted to keep a 20th of the fertile land as well as land in the vicinity of its trading posts.

The relationship between the Hudson's Bay Company and the Indians with whom it traded has become an area of special interest to economic, business, and social historians, as well as to geographers and anthropologists. This is due partly to the extensive company records, which were meticulously kept and, happily, have been preserved. These records offer a great insight into how a company with a head office thousands of miles from its main operations—and faced with premodern communication—was able to manage a complex and, in many ways, unfamiliar industry.

Central to the company's approach, especially during the 18th century when trade was almost entirely through barter, was a system of accounts based on the Made Beaver (MB). This unit of accounts established prices for every type of fur and every type of European goods traded. For example, at its largest post, York Factory, a prime beaver pelt had a price of 1 MB, and a gun had a price of 14 MB. Thus, at the official rate, guns and beaver pelts traded at a ratio of 14 to 1. Post traders, however, were given flexibility and so actual exchanges depended on a variety of factors, among them how strong was the market for furs in Europe, how severe was the competition from the French and others, and how plentiful were the beaver stocks. Indeed, the company and its traders appear to have responded to these market conditions in a way that preserved the company's long-run profitability.

In the 20th century, the company moved into retailing. Beginning with small outlets in Winnipeg and Vancouver in the late 19th century, the Hudson's Bay Company expanded to the point that it now operates a large chain of department stores (The Bay/La Baie) located throughout much of Canada. The company also has a mining arm; it closed its fur trading division in 1996.

See also Astor, JOHN JACOB.

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Ann M. Carlos and Frank D. Lewis

Hughes, Howard, Jr. (1905–1976) *businessman and entrepreneur* Born in Houston, Hughes's family was in the oil drilling business. His father developed an oil bit capable of drilling to previously unreachable areas, and the company became the Hughes Tool Co. Howard Jr. was a tinkerer as a youth and attended several colleges, including Rice Institute, but never graduated. When he was 19, his father died and the company passed to him. His newfound wealth became the basis for the wide array of entrepreneurial enterprises he undertook beginning while he was in his early 20s.

After inheriting Hughes Tool, he embarked upon a career in Hollywood, directing several

movies that achieved notable success. He also continued to develop an interest in flying. In 1932, he became interested in the aviation industry and formed the Hughes Aircraft Corp., which developed a plane called the H-1. He also flew a twin-engine plane around the world, a trip that helped prove that passenger air travel was the wave of the future. Subsequently, he bought TWA in 1937 and financed the Lockheed Constellation, an advanced-design passenger airplane.

During World War II, Hughes took up defense contracting, but his projects did not materialize before the war ended. One was a reconnaissance plane and the other a huge wooden plane, nicknamed the Spruce Goose. Like many of his projects, they never fully succeeded while he was personally involved with them. Hughes acquired a reputation as an eccentric whose close personal involvement with a project often spelled its demise. His personal involvement in test piloting was not always successful, either. On a test flight of his reconnaissance plane, the XF-11, in 1946, it crash-landed in California, and he was seriously injured, spending nine months in the hospital recuperating.

The Spruce Goose also proved a failure, being unable to carry the large number of military equipment and soldiers as originally planned because war was over. Hughes Aircraft began to succeed after the war as Hughes distanced himself from the company. He also lost control of TWA when the airline needed to purchase its first generation of jet liners, and Hughes could not finance the purchase from company resources. But he still managed to earn more than \$500 million when he divested. He also continued to produce the occasional Hollywood movie, but none of the later films achieved the success of his earlier ones.



Howard Hughes (LIBRARY OF CONGRESS)

In later life, Hughes became extremely reclusive and never appeared in public. Much speculation about his private life ensued. He made a substantial investment in several Las Vegas resorts, which were eventually sold. One of his few ventures into the public light came just before his death when he called the press to state that a recent biography of him was a fake. He died in 1976 and was buried in Houston.

See also AIRPLANE INDUSTRY.

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lacocca, Lee (1924–) automobile executive Lido (Lee) Anthony Iacocca was born in Allentown, Pennsylvania, on October 15, 1924, to Italian immigrants. His father was a successful businessman who lost most of his wealth during the Great Depression, but imparted a love of automobiles to his son. Iacocca graduated from Lehigh University in 1945 intent upon becoming an automotive engineer, and he relocated to Dearborn, Michigan, as an executive trainee with the Ford Corporation. After a brief period with the company Iacocca departed for Princeton University, where he obtained a master's degree in industrial engineering. Back at Ford he decided that he was better at selling cars than designing them and switched his career over to sales. Iacocca possessed an uncanny knack for persuasion, and he rose quickly through Ford's promotional department. By 1960, as he confidently predicted during his undergraduate years, Iacocca had become vice president of the automotive division of Ford at the age of 36. In this capacity, he convinced a reluctant company president, Robert S. MacNamara, that a new, sporty car design was needed to attract the growing youth market. In 1964, Iacocca's suggestion came

to fruition in the form of the Mustang, a low-cost sports vehicle that broke all existing sales records for Ford products. His success resulted in promotion to executive vice president in 1967 and president of the company three years later. Iacocca, now an internationally recognized corporate celebrity, continued serving Ford successfully until he ran afoul of company chairman Henry Ford II, who dismissed him in June 1978 for reasons that have never been explained.

Iacocca rebounded from this reversal with typical panache when he was installed as president of the CHRYSLER CORP., one of the automotive "Big Three." The company had been hit by sagging sales, unimaginative engineering, and a debt approaching \$6 billion. Iacocca threw himself into the task of rescuing the ailing giant by personally visiting all Chrysler plants, talking with workers about the need for sacrifice, and streamlining overall operations. His drastic strategy included selling off profitable parts of the company, such as its army tank division, and tooling up for new and better products. To better ensure union harmony and support during this austerity period, Chrysler became the first-ever American manufacturer to place the head of the auto worker's union on the corporate board. Moreover, he managed to win an unprecedented loan from the federal government totaling \$1 billion. Iacocca then took his offensive to the airwaves and became Chrvsler's best-known salesman through a series of tough-talking commercials. Invariably he assured the public of the company's impending return to solvency and offered revolutionary incentives such as an unconditional refund within 30 days. Within a few years, he dramatically turned around Chrysler's fortunes, paid off all its debts, and began posting record profits. Iacocca was also personally responsible for creation of the new K-car and the minivan, which he felt would be attractive to struggling young families. His sagacity and ingenuity again paid dividends, and by 1985, Chrysler was positioned to acquire new properties such as the Gulfstream Aerospace Corporation and the E. F. Hutton Credit Corporation. Iacocca's rescue of the company-and the thousands of jobs it represented-again catapulted him into the ranks of national celebrity. His reputation was further abetted through his numerous ads, public appearances, and a highly regarded set of memoirs.

Iacocca remained at the helm of Chrysler until 1992, when the American auto industry was again buffeted by stiff competition from efficient Japanese imports. That year he concluded 30 years of distinguished service as an AUTOMOTIVE INDUSTRY executive by retiring from the board, although he received the sinecure of a major stockholder. In 1995, Iacocca became embroiled in a controversial and unsuccessful attempt to take control of Chrysler in concert with Las Vegas financier Kirk Kerkorian. He has since withdrawn from the public sector, although as late as 1998 Iacocca was pursuing the idea of mass-produced electric cars. His bravura and timely rescue of Chrysler remain the stuff of legend.

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John C. Fredriksen

income tax While a number of states and municipalities experimented with an income tax throughout the 18th and 19th centuries, the first federal income tax in the United States was not instituted until the Civil War, as a direct response to the national war emergency. A low flat rate of 3 percent on incomes above \$800 was established in 1861; subsequent amendments to the tax laws during the war years reduced the exemption level and introduced modestly graduated rates, with a maximum rate of 10 percent on incomes above \$10,000 established in 1864.

Although the Civil War income tax generated significant federal revenue, financing nearly 20 percent of Union Army costs, it affected only a small percentage of affluent Americans. Since the tax was instituted under the guise of a war emergency, nationalistic sentiment ensured relatively high rates of individual compliance. By the end of the war, 10 percent of all Union households had paid some form of income tax. But once the wartime and Reconstruction emergencies were over, many of the constituents affected by the income tax lobbied to have it removed. By 1872, America's first experiment with a federal income tax came to an end when Congress allowed the existing tax legislation to expire without renewal.

Throughout the 1870s and 1880s, federal policy makers neglected the income tax and

returned to a regime of high indirect consumption taxes that included the tariff and sales taxes on items such as tobacco and alcohol. During the depression of the early 1890s, however, criticism of the regressive nature of the high tariff regime began to mount. The rise of corporate consolidation, together with the economic downturn, led Populists and disciples of Henry George's "single tax" to call for a more equal distribution of the burdens of financing a modern, regulatory state. Organized political parties such as the Greenbacks and the Populists inserted calls for a graduated income tax in their platforms, and federal politicians from the South and West introduced numerous income tax bills.

Congressional Democrats responding to this clamor for tariff reform reinstituted the income tax in the 1894 Wilson-Gorman Tariff Bill. Like the Civil War income tax, the 1894 law affected only a small percentage of the population, taxing all incomes above the exemption level of \$4,000 at the modest rate of 2 percent. Nevertheless, the 1894 income tax law was a poignant symbol of the federal government's attempt to address the growing disparity of wealth and power in a modern industrial society. Instituted during peacetime, the 1894 law demonstrated that the income tax was not simply a tool for raising revenue, but could also be a viable vehicle of social justice.

The 1894 income tax did not last long, however. One year later the U.S. Supreme Court, in a controversial 5 to 4 decision in Pollock v. Farmers' Loan & Trust Co., declared the new law unconstitutional. Many commentators at the time viewed the Court's decision as an example of judicial adherence to laissez-faire constitutionalism. But the Pollock decision helped galvanize the forces in favor of an income tax. In an effort to overcome the Court's decision, a movement for a constitutional amendment legalizing a federal income tax soon gained momentum, and by 1913 the Sixteenth Amendment made the income tax a permanent part of the U.S. tax system. Even with a constitutional amendment political leaders proceeded cautiously in passing

an income tax law in 1913. Enacted as part of the Underwood-Simmons Tariff Act, the new income tax was even more moderate than its Civil War predecessor. It taxed incomes above \$3,000 at 1 percent and had a graduated rate reaching up to 6 percent for incomes above \$20,000.

The income tax may have remained anemic had it not been for the national emergencies created by the two world wars and the Great Depression. During the First World War, the demand for government revenues combined with nationalistic sentiment not only to create a tax system that had steeply progressive rates reaching as high as 77 percent, but also to institute an "excess-profits" tax on corporate income. The first corporate income tax had been instituted in 1909, preceding the Sixteenth Amendment and the 1913 tax law, but it remained insignificant until the war emergencies.

After World War I, the income tax, like other aspects of economic policy making, returned to a period of normalcy. With the economic prosperity of the 1920s, income tax rates returned to their more modest prewar levels, and new sets of exemptions and deductions were introduced benefiting wealthy and corporate taxpayers. This philosophy of limiting tax rates and creating particular loopholes continued for the most part through the Hoover administration and the early phases of Roosevelt's NEW DEAL.

In 1935, as the Great Depression continued to drag on, the Roosevelt administration sought to change the course of federal tax policy. Treasury Secretary Henry Morgenthau worked with the Democratic leadership in Congress to enact a "soak the rich" tax law in 1935 that included a graduated corporation tax ranging from 12.5 to 15 percent; an intercorporate dividends tax that inhibited popular tax avoidance schemes; an increased estate and gift tax; and a surtax on incomes more than \$50,000 that had a top rate of 75 percent on all incomes more than \$500,000. The 1935 law did not reach many taxpayers, but the symbolism was significant, especially considering that FDR and the New Deal were coming under increased attack from the political left by such figures as Senator Huey Long of Louisiana and his radical "Share the Wealth" tax program.

With the onset of World War II federal income tax underwent dramatic change. The fiscal demands of war mobilization transformed a class-based income tax that affected only the wealthy few into a mass-based tax that touched a significant portion of the U.S. population. Whereas in 1939 only 4 million Americans were required to pay an income tax, that number had escalated to approximately 43 million by 1945. The collection of these revenues was facilitated by the introduction of a withholding system of taxation in 1943. The World War II tax regime also raised the marginal tax rates to a new high of 91 percent, allowing the federal government to collect an unprecedented amount of revenue. In fact, personal income tax revenues, which had never exceeded 2 percent of GDP between 1913 and 1940, had by the end of the war increased dramatically, reaching roughly 8 percent of GDP. Federal personal income tax revenues have remained close to 8 percent of GDP ever since World War II.

The postwar period ushered in a new era of public finance, whereby relatively high rates of taxation remained, but the aim of tax policies was focused more on economic growth rather than progressive equity. Keynesianism had convinced leaders on both the political right and left that countercyclical government policies were the key to economic stability, and this entailed tax cuts during economic downturns and tax increases during times of prosperity.

Postwar tax policy remained relatively stable until the "Reagan Revolution" of the 1980s. As the stagflation of the late 1970s continued to plague the country, Ronald Reagan embarked upon the presidency with an ideology and policy known as "supply-side economics." A key component of this economic thinking was a massive set of tax cuts instituted by the passage of the Economic Recovery Act of 1981. With this law, and the subsequent enactment of the TAX REFORM ACT of 1986, the American system of public finance dramatically diminished the role of the income tax, as both individual and corporate rates were severely slashed. Although succeeding political leaders have altered the tax structure at the margins, the fundamental concept of Reagan's low rates and relatively abundant deductions and exemptions remains a part of today's U.S. tax system. Indeed, despite political rhetoric to the contrary, the income tax appears to be a permanent part of the U.S. system of taxation.

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Ajay K. Mehrotra

Industrial Revolution in the United States

Manufacture is the process of physically transforming raw materials, semifinished goods, or subassemblies into product(s) with higher value. The Industrial Revolution in America saw activities traditionally performed in or close to the home migrate to shops, mills, and factories employing specialized workers and selling output commercially.

This entailed the application of new manufacturing processes and ultimately the development of new products, and was fostered by technical change in the transportation and communication sectors, in the extractive sectors producing raw materials (agriculture, fisheries, forestry, and mining), and by the growth and increased density of population. All of these factors, along with the availability of improved techniques within manufacture itself, affected the economic viability of specialized industrial production and the forms it took. So too did war, tariff policy, and the development of a financial infrastructure capable of facilitating the assemblage of large amounts of capital.

Most of the American economy during the colonial period consisted of subsistence agriculture. Overlaid upon this were commercial agricultural activities specific to particular regions (grain in the middle colonies, tobacco in the Chesapeake, and rice and indigo in the South), shipbuilding, fishing, and maritime trade. Most manufacturing was done at home and, if not at home, tended to be small-scale and located in the countryside. Aside from shipbuilding, the colonial period witnessed commercial manufacturing activity in the tanning of leather, milling of lumber, smelting of iron ore and forging of iron products, and grinding of grain. Most of this activity served local markets. High-value items were typically imported, usually from England.

Although British navigation laws, which governed trade within the Empire, were biased against the development of colonial industry, their architects intended the colonies to serve as a source of intermediate goods. Thus, some early-stage manufacture was actually fostered by the system. The refining and further manufacture of iron products was discouraged in the colonies and banned outright after 1750, but smelting was not so encumbered. This was partly a matter of weight: It was prohibitively expensive to ship unsmelted iron ore as opposed to pig iron to England.

The big money in the colonial period lay in export activities: sending tobacco, dried fish, naval stores, and ships to Europe, trading guns and rum for slaves on the West African coast, and provisioning the colonies with manufactures from England and the sugar islands of the Caribbean with slaves, foodstuffs, horses, and lumber. The vast bulk of imports to the colonies came from England, and most of these were manufactured goods. At the time of the American Declaration of Independence, the radical transformation of the textile and iron industries generally identified as the Industrial Revolution in England was only just beginning, with many of the necessary preconditions, technological and other, already established. Still, the English were far ahead of the Americans and, even adding in the cost of transportation, could deliver finished textile and iron goods to the colonies more cheaply than the colonies could make such goods themselves.

During the Revolutionary War, trade with Europe was disrupted, creating pressures for selfsufficiency that provided some protection and stimulus to American manufactures. As a consequence of the peace settlement of 1783, the newly independent states again had access to cheap imports of British manufactured goods, a boon for consumers but bad news for importcompeting domestic industries. The return of world war in 1793 (Britain and France were engaged in hostilities almost continuously through 1815) created bonanza opportunities for U.S. maritime interests. As a neutral party, U.S. vessels could trade with combatants on both sides of the struggle.

This mutually advantageous arrangement began to break down in 1805 with Britain's Essex decision and Napoleon's retaliation with the Berlin decree; soon more than a thousand U.S. ships had been seized by the warring parties, who claimed the ships were in violation of their newly declared and more restrictive rules. Wary of being drawn further into conflict with the European combatants, Jefferson initiated passage of the Embargo Act in 1807, prohibiting U.S. ships from trading in all foreign ports. Disastrous for U.S. shipping, the legislation created hothouse conditions for U.S. manufacturing, providing the equivalent of almost unlimited protection. The number of textile mills in the country jumped sixfold in the space of a year.

With the return of peace in 1815, U.S. industry again faced a flood of cheap imports from England. Tariff protection then provided some substitute for the protection for American manufacturing that war had previously offered. Under a tariff umbrella, the U.S. textile industry became the first, and prior to the Civil War the only, industry to shift into large factories employing power-driven machinery to serve national markets. Centered initially in New England, the industry benefited from the immigration of mechanics such as Samuel Slater who carried with them designs for some of the water frames they had worked with in England. The American Francis Lowell, who designed a power-driven loom, also benefited from firsthand exposure to English designs.

Harnessing the new spinning machines and power looms in integrated water power–driven mills, the first large-scale factories in the United States arose on greenfields along the Merrimac River in Manchester, New Hampshire, in Lowell and Lawrence, Massachusetts, and along the Connecticut River in western Massachusetts. Until the 1840s, when large-scale Irish immigration began, much of the workforce consisted of unmarried Yankee farmgirls housed in company operated dormitories.

For the boot and shoe industry in antebellum New England, cheap imports and therefore the tariff were lesser issues. The sector nevertheless underwent substantial change, transitioning from a form of organization in which workers assembled in small shops overseen by bosses, although most continued to work with hand rather than power-driven tools until after the Civil War. Nevertheless, boots and shoes were the other major industry, along with textiles, that developed a clear national orientation before 1860, supplying cheap footwear, for example, to southern slave plantations.

Flour milling and the reduction of felled trees to lumber were other important water power– driven antebellum industries, although with few exceptions they remained rural and highly localized in terms of the markets they served. The iron industry also remained predominantly rural, based until the 1840s on charcoal smelting and refining as opposed to the coal-fueled industry that had come to dominate England.

Finally, a subsector of manufacturing assembled small parts into such products as clocks, sewing machines, and small arms. Prior to the Civil War, Americans developed proficiency in organizing systems of assembly relying on more or less interchangeable parts, and the "American System of Manufacture" deeply impressed British observers at the 1850 Crystal Palace Exhibition in England. This expertise laid the groundwork for such late 19th- and early 20th-century growth sectors as TYPEWRITERS, bicycles, and automobiles.

The third triad of the Industrial Revolution in England was the use of steam power in mining, manufacture, and transportation. The steam engine, developed initially to deal with the problem of water encroachment in mines located near the ocean and used in early versions to pump water to the upper floors of English country houses, played less of a role initially in U.S. manufacturing than in Britain because of the abundance of exploitable water power on America's eastern seaboard. But applications in transportation (for which water power was obviously unsuitable) were a different matter, and beginning in 1808, on water, and in the late 1820s, on land, steam-powered vehicles contributed to the movement of goods and people. Americans innovated in the development of high-pressure steam engines, which initially were more dangerous and wasteful of fuel but were particularly suited for moving applications because they could be constructed compactly. Improvements in the internal infrastructure for moving freight made it increasingly feasible for some pioneering manufacturing sectors, in particular textiles and boots and shoes, to supply a national market in the antebellum period.

Although American manufacturing made great progress in the first part of the 19th century, on the eve of the Civil War the textile industry was the only manufacturing sector organized in power-driven factories producing for a national market. Thousands of sawmills and grist mills for grinding flour were, it is true, power-driven, but they produced almost exclusively for local markets. Boots and shoes were manufactured for national markets, but the factories were largely unmechanized, with sewing machines just beginning to appear. Building on advances pioneered in government arsenals, a small sector assembled sewing machines, clocks, and small arms using interchangeable parts, but the key innovations here were organizational, rather than the application of powered machinery that is typically seen as the hallmark of the Industrial Revolution.

Between the end of the Civil War and the beginning of World War 1, American industry decisively entered the 20th century in a variety of ways. In the 18th and the first part of the 19th century, commerce dominated manufacture. By 1910, manufacturing more than held its own. Its share of the labor force and value added had grown at the expense of agriculture. The United States had surpassed Great Britain as a manufacturing powerhouse and now stood first in the world, having also forged ahead of Germany, which had become its closest competitor. A wave of consolidations and MERGERS driven by a hunger for monopoly power complemented tendencies toward larger scale brought about by technological factors alone. Industrial firms became much larger on average, and size became a political as well as an economic issue, spawning largely quixotic attempts to tame it through antitrust policy.

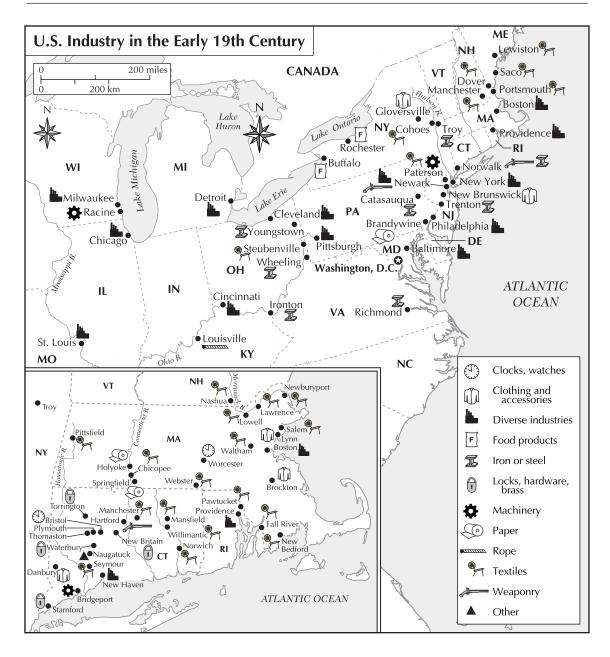
Manufacturing has been declining among workers in the United States, but between roughly 1940 and 1960 the sector employed more than one in four U.S. workers. The second half of the 19th century in the United States witnessed a transformation in parts of U.S. manufacturing that brought it into the modern world, both in turns of the types of technology used and in terms of the organizational structures needed to coordinate and manage them. It laid the groundwork for the efflorescence of American manufacturing in the 1920s, a sector that experienced very high labor productivity growth as it built out the automobile and electrical machinery industries.

Key preconditions for this move into the modern age were the roughly simultaneous mid-19th-century transformation of technologies for moving both goods and information. The RAIL-ROADS, although far more expensive to construct per mile than canals, moved goods more quickly, were not subject to service outages because of inadequate water flow in the summer, or ice for as much as five months of the winter, and could be built over a much wider range of routes than those for which canals were suitable or economic. The railroad provided fast, reliable, around-the-clock transportation solutions in a way that had never before been possible.

The railroad's key complementary technology, the TELEGRAPH, also represented a qualitative breakthrough in speed and reliability, in this case in the movement of information. Prior to the telegraph, the speed of moving data was pretty much limited to how rapidly a horse could carry a rider, or how fast a ship could travel. With the telegraph, data could now move orders of magnitude faster, and in a relatively reliable fashion not subject to the vagaries of weather or season.

These two technologies made possible and required for their own operation the development of what business historian Alfred Chandler called Modern Business Enterprise. An MBE was a multidivisional firm administered by a staff of salaried managers. It arose first in the transportation sector as a means of coordinating railway traffic so as to reduce the number of collisions in a largely single-tracked system, and in communication (WESTERN UNION) to coordinate the operation of a national system. Railroad corporations, such as the Pennsylvania Railroad, which at its peak employed more than 100,000 people, dominated the U.S. economy in a way no business organizations have before or since.

The railroad and the telegraph enabled the development of mass distribution in the form of the urban department store such as R. H. Macy's



as well as the mail order house such as SEARS, ROEBUCK and Montgomery Ward. Finally, MBE emerged in a few but ultimately important subsectors of manufacturing where the nature of technologies or customer service requirements made it particularly suitable. The pairing of reliable all-weather transportation and communication increased the rate of inventory turnover and made possible high-capacity utilization rates for fixed capital, necessary to make economically feasible the implementation of some of the new technologies in manufacturing, which had substantially higher minimum efficient scales. For the first time large-scale industry began to figure heavily within the economy of the United States.

One such sector was steel. Technological innovations, in particular the Bessemer converter and the Siemens-Martin open hearth, made possible drastic reductions in the price of steel, and in conjunction with the exploitation of the railroad and the telegraph by such entrepreneurs as Andrew CARNEGIE, enabled the real price of steel to drop by 90 percent over a three-decade period. In 1850, steel was an expensive alloy suitable only for surgical blades or military swords. By the end of the century it had become a structural material out of which rails, steamships, and ultimately SKYSCRAPERS could be constructed.

A blast furnace smelts iron ore and produces cast or pig iron with about 4 percent carbon content. A blacksmith can easily refine this down to wrought or malleable iron with almost no carbon. If, before the 1850s, one wanted steel (about 2 percent carbon), which combines the plasticity of wrought iron with the rigidity of cast iron, one had to laboriously add back some of the carbon in a fuel and labor intensive process that did not always produce a homogeneous product. The mid-century innovations made it technically possible to produce large batches of homogeneous steel cheaply, but it took entrepreneurs such as Carnegie to figure out how to use the telegraph and the railroad to coordinate raw material deliveries and develop the markets in such a way that a continuous flow of production could be sustained, thus warranting the heavy investment in physical capital that the new techniques required. Integration of smelting, refining, and rolling operations in one facility also saved tremendously on fuel and labor costs and was key to Carnegie's success.

Cigarettes were another case in point. The Bonsack cigarette making machine could produce thousands of cigarettes per hour. But it took James B. DUKE to exploit the new transport and communications industries, as well as mass market advertising, to coordinate the inflow of tobacco and outflow of cigarettes in a fashion that could keep these machines "fed" and avoid bottlenecks on either the input or the output side.

John D. ROCKEFELLER'S success in building a business based on the refining and distribution of petroleum products was based again on the exploitation of the railroad and telegraph. Here the central engineering dynamic had to do with the economics of refineries, particularly the square-cubed relationship: The materials cost of building a refinery vessel with double the volume are not necessarily twice as much, so a firm that builds and controls larger vessels will be able to outcompete other entrants, provided the output from the refineries can be sold.

Toward the end of the century the assembly techniques that Henry FORD would pioneer in building automobiles were anticipated in the disassembly lines where meatpackers such as Swift and Armour revolutionized the production of dressed beef and pork. Again, these large-scale operations depended critically on the railroad and the telegraph to bring the animals to centralized slaughterhouses and rapidly to move the butchered meat in refrigerated railroad cars to markets.

In spite of these examples of dramatic increase in firm size, the coexistence of largeand small-scale manufacturing remained a feature of the economy at the end of the 19th century, as it does today.

American industry in the 1880s was abandoning its earlier dependence on water power for the more reliable but fuel-hungry steam engine. Although a steam-powered mill did not need to concern itself with lack of rainfall in the summer or freezing in the winter, it imposed essentially the same constraints as did water power on the industrial design of the factory. In either instance power was delivered through systems of rods, gears, and belts to the individual parts of the factory, and the enterprise relied on gas lighting for shift work after sunset. Thomas EDISON inaugurated the first commercial provision of DC power in 1882 at his Pearl Street station in New York. But the initial market for his incandescent light bulbs and the power to energize them was residential space lighting for the well-to-do. It would be several decades—in some instances well into the 1920s—before electric power in conjunction with small electric motors led to a revolution in factory organization as power was distributed to work stations on an as-needed basis.

The idea of an industrial revolution as a sharp break with the past has come under increasing criticism insofar as it applies to Britain. If we wish to use the term for the United States, we can perhaps speak of a gradual transformation spanning the years from the early national period to those just before the First World War. By 1910 large-scale power-driven factories producing for a national market characterized a number of important manufacturing sectors.

Modern business enterprise had emerged and was well established in transportation, communication, distribution, and, by this point quite dramatically, in manufacturing. Commercial manufacture was no longer a localized, largely rural adjunct to activities performed in the home. And firms were no longer typically small sole proprietorships operating at a relatively leisurely pace. The railroads and the telegraph, supplemented eventually by the telephone, quickened the velocity of raw materials, semifinished goods, and wholesale and retail inventories as they passed among business entities toward their final user. At the commanding heights of American industry, armies of salaried managers and whitecollar clerical and sales workers supported those engaged in basic production. And one had begun to see the routinization of research and development activities, such as those pioneered by Edison in his Menlo Park laboratories.

Although manufacturing today employs no more people than it did in 1950, its output is much higher and more efficient, reflecting continued high rates of productivity growth. Even as U.S. companies continue to transfer some production operations overseas, a U.S. manufacturing sector will persist into the future, its foundations established in the 12 decades following the ratification of the U.S. Constitution.

See also CORPORATION.

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Alexander Field

Insull, Samuel (1859–1938) *utilities executive* Born in London, Insull served as secretary for the London agent of Thomas A. EDISON until 1881. He was hired as Edison's private secretary in that year and began a long career in the American power industry that helped develop his reputation, and later his vilification, after the Crash of 1929.

Insull became Edison's general manager when the manufacturing operations of Edison's electrical company were moved to Schenectady, New York. In the five years that the operation was under Insull's control, it expanded substantially. In 1892, Edison Electric merged with another electrical equipment manufacturer, the Thompson-Houston Co., to form the GENERAL ELECTRIC CO., a J. P. Morgan creation. Insull realized that his future with the company was limited since Edison was no longer in effective control of the company. He resigned his position with GE and moved west to become president of the Chicago Edison Co.

Like many other industrialists of his era, Insull proved to be a master consolidator, and within 15 years the entire electrical business in Chicago was controlled by Insull through the Commonwealth Edison Co. Throughout the war years and the 1920s, he continued to expand operations, and by 1930, the company provided 10 percent of the nation's electricity in 32 states. He was a generous benefactor of Chicago and many of its local institutions. His company also was highly leveraged, resembling a pyramid, in which a handful of executives effectively controlled the HOLDING COMPANY and all of its subsidiaries. In order to accomplish this, Insull borrowed heavily from banks. When the stock market crash occurred in 1929, the stock fell dramatically, and many of his midwestern bankers were unable to support the company and called in New York banks as well. After negotiating with the bankers for months, many of his companies were declared bankrupt in 1932, and millions were lost, including many small investors' funds. The focus of increasing public hostility, Insull left the country for Paris and then fled France for Greece to avoid extradition.

Insull finally returned to the United States to face the charges against him, including mail fraud, embezzlement, and violation of federal bankruptcy laws. He finally was acquitted on all counts and returned to Paris, where he died of a heart attack in 1938. He is best remembered for bringing the consolidation trend to the production of electricity in the 1920s and creating one of the several large electrical utility combines, dubbed the "power trust," that produced more than half of the country's power and led to the passing of the Public Utility Holding Co. Act in 1935.

See also UTILITIES.

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insurance industry Insurance is a means of spreading risk across a large group of people. The uncertain risk—such as loss of life, property, or employment—is replaced by the predictable cost of an insurance premium. The two basic categories of insurance are the property and casualty industry and the life and health industry. The property and casualty industry comprises numerous different insurance lines, including automobile, homeowners' (a "multiple peril" type of insurance that covers fire, weather, and accidents), commercial multiple peril, general liability (to protect companies or professionals from damage claims), medical malpractice, fire, reinsurance (the selling of a portion of large policies to other insurance companies), ocean and inland marine, and surety (for professionals who require bonding). Additionally, state and federal governments offer various types of insurance not fully provided by the private sector, including protection for bank deposits, crops, property in flood-prone areas, and workers' compensation.

Although most 19th-century companies already specialized in one line of insurance, in 1865 New York specifically banned the provision of more than one line by the same company. After the Chicago fire of 1871 and the Boston fire of 1873, most other states similarly prohibited multiple-line insurance companies and continued to do so until the late 1940s. Due to space constraints, this article will cover only marine, fire, automobile, life, and health insurance.

The first form of insurance in the United States was on seagoing vessels and their cargo. As early as 1682, ships trading between England and the colonies were often protected against the hazards of the voyage by British insurance companies. During the 18th century, wealthy individuals or partnerships in Philadelphia and New York began establishing offices to underwrite marine risks, but English firms continued to dominate this field. The first American corporation to sell marine insurance was the Insurance Company of North America, chartered by Pennsylvania in 1794. The stability and longevity of incorporated insurance firms quickly spread to cities throughout the eastern seaboard including New York, Boston, New Haven, and Charleston, where numerous marine companies received charters over the next decade.

Despite their initial success, marine companies encountered a series of obstacles to their growth during the 19th century. Beginning in 1803 with the Napoleonic Wars between Britain and France, neutral American ships were continuously harassed by the two warring nations. While this hostile seagoing environment increased demand for marine insurance, the conditions of war likewise increased the risk of loss, placing the companies in a precarious financial condition. Between 1803 and 1812, the secretary of state reported 1,600 American vessels captured by the British, French, Neapolitans, or Danes. In contrast, the Embargo Act of 1807 brought all American trade to a virtual standstill and eliminated the business of marine insurance companies during most of 1808.

With the restoration of peace in 1815, marine insurance companies proliferated rapidly. The industry entered a period of intense competition during which rate wars forced many companies into BANKRUPTCY. A rash of fraudulent insurance claims during the 1820s further weakened the industry. One early historian estimated that one-third of all marine insurance claims from 1820 to 1840 were dishonest. The industry finally reached a period of stability and prosperity during the 1840s and 1850s, only to be disrupted again by the Civil War. The suspension of the cotton trade, heavy marine losses, and high wartime taxes all proved disastrous to the industry. Foreign competitors-the British in particular-capitalized on this weakened condition to regain dominance in both shipping and marine insurance. By the 1920s, only three major American marine companies were active in New York compared with 15 foreign companies. By the year 2000, only 3 percent of property and casualty premiums were for marine insurance.

Modern fire insurance originated as a direct result of the great London fire of 1666. In the colonies, attempts were made during the early 18th century to regulate the construction of buildings and to form organizations to extinguish fires. America's first fire company, the Friendly Society of Mutual Insuring of Homes Against Fire, was established in Charleston, South Carolina, in 1735, but a major fire in 1741 put the association out of business. It would be more than a decade before the next company, the Philadelphia Contributorship for Insuring Houses from Loss by Fire, opened in 1752. The first known New York company-the Mutual Insurance Company (renamed the Knickerbocker Fire in 1846)—was not chartered until 1787. During the late 18th and early 19th centuries, marine insurance companies also commonly underwrote fire risks, but marine insurance remained the main focus of these early firms.

Most early fire companies were set up as assessment companies serving one town, city, county, or neighborhood, where members would pay a fee only when another member suffered a property loss. During a period when fire-fighting equipment was inadequate and buildings were highly flammable, small fires quickly spread; this exposed a small group of people to a high risk of heavy loss, and many fire insurance companies were wiped out by a single conflagration. For example, the disastrous 1835 fire in New York bankrupted 23 of that city's 26 companies. As a result, mutual companies-in which members paid a regular fee with any annual surplus being redistributed to the policyholders-gained in popularity.

In 1837, Massachusetts began requiring fire insurers to maintain a reserve fund for the purpose of paying higher-than-predicted claims. New York enacted the nation's first comprehensive insurance code in 1849, followed four years later with its own reserve requirement for fire companies. In response to revelations of insolvency and fraudulent organization among several fire insurance companies, state insurance departments were created to supervise all types of insurance. Beginning with New Hampshire in 1851, Massachusetts in 1855, and New York in 1859, most other states followed suit with their own supervisory departments during the postbellum period.

During the 1850s and 1860s, many states enacted protectionist legislation in order to promote local business interests or to raise revenues. Out-of-state companies in all lines of insurance were often charged higher taxes, required to invest in local bonds as a security deposit, and forced to purchase various state, county, and municipal licenses for their agents. The industry orchestrated a test case to challenge the constitutionality of these state regulations when a fire insurance agent representing several New York firms refused to pay a Virginia licensing fee. Unfortunately for the insurance industry, the Supreme Court ruled in the 1869 case of Paul v. Virginia that insurance polices were not commerce and therefore fell outside of federal jurisdiction as defined by the Constitution.

One of the biggest problems faced by fire insurance companies during the 19th and early 20th centuries was rate-cutting. Low barriers to entry allowed numerous companies to flood the market, frequently setting low rates in order to undercut the existing competition. These rates often proved inadequate in the event of a fire, resulting in company insolvency and high loss rates for policyholders. For example, threequarters of the involved companies were bankrupted by the 1871 Chicago fire and 1873 Boston fire. In response, companies banded together into organizations of fire underwriters for the purpose of setting industry rates. Ironically, fire companies would come to rely on the Paul decision to argue that since they were not engaged in interstate commerce, this rate-setting activity was not in violation of the Sherman Antitrust Act of 1890 or the CLAYTON ACT of 1914.

The San Francisco earthquake of 1906 again forced many companies into bankruptcy and the remainder to raise rates. In 1910, New York established the Merritt Committee to investigate the practice of rate-setting among fire insurance companies. The committee uncovered numerous abuses committed by the industry, including charging discriminatory rates, boycotting customers, and challenging claims without due cause. In the aftermath of the investigation, many states mandated the establishment of rating bureaus to pool company data and determine ideal rates. State-sanctioned rate-setting, free from the restraints of antitrust legislation, was perceived to be the only viable means of ensuring the solvency of fire insurance companies.

The 1869 Paul v. Virginia decision was finally overruled in the 1944 case of United States v. South-Eastern Underwriters Association. The case involved a group of multistate fire insurance underwriting bureaus that were charged with conspiring to fix prices and limit competitionin violation of the Sherman and Clayton Antitrust Acts-by bribing insurance commissioners. In a 4 to 3 decision, the Supreme Court ruled that multistate insurance companies did indeed engage in interstate commerce and that insurance companies could therefore be prosecuted under the antitrust acts. In response, Congress passed the McCarran-Ferguson Act of 1945, declaring state regulation and taxation of the insurance industry to be in the public's best interest. It also placed the industry specifically outside the purview of the SHERMAN ACT, the Clayton Act, and the FEDERAL TRADE COMMISSION Act as long as such business was regulated by state law. Congress recognized that the sharing of information actually facilitated competition and solvency. By the year 2000, only 3 percent of property and casualty premiums were for fire insurance.

Automobile insurance began early in the history of the AUTOMOTIVE INDUSTRY, but the first compulsory law was not passed until 1927 by Massachusetts. Since then, most states have passed laws requiring some minimum level of insurance for all automobiles. As with other types of liability insurance, the person claiming injuries or damage as the result of an automobile accident had to prove that the other party was at fault. Consequently, the process itself was long and inefficient, with legal fees consuming approximately one-quarter of all insurance premiums. During the 1960s, states began considering no-fault insurance in which property and injury claims would be paid by each person's own insurance company, regardless of who was at fault. By the early 1970s, several major insurance companies joined consumer groups in announcing their support for no-fault policies, believing that the change would result in considerable cost savings. Massachusetts first adopted no-fault in 1971, followed by 23 other states by 1976. On several occasions during the 1970s, the federal government even considered mandating no-fault insurance across the country.



Metropolitan Life Insurance Building, New York City (LIBRARY OF CONGRESS)

The drive for nationwide no-fault insurance had died quickly by the late 1970s. In most states, trial lawyers managed to win concessions from legislatures that weakened the laws. For example, several states offered no-fault insurance while still permitting damage lawsuits. Other states allowed drivers to sue for damages above a stipulated amount. Only in New York, Michigan, and Pennsylvania was a relatively pure form of no-fault insurance attempted. During the 1980s and 1990s, several states repealed some or all of their no-fault provisions due to rising insurance costs. The prudence of no-fault insurance continues to be debated in the remaining states. In the year 2000 automotive insurance was the largest line within property and casualty insurance, accounting for 46 percent of premium income.

The first American life insurance enterprises can be traced back to the late colonial period. The Presbyterian Synods in Philadelphia and New York set up the Corporation for Relief of Poor and Distressed Widows and Children of Presbyterian Ministers in 1759; the Episcopalian ministers organized a similar fund in 1769. In the half-century from 1787 to 1837, 26 companies offering life insurance to the general public opened their doors, but they rarely survived more than a couple of years and sold few policies. The only early companies to experience any success in this line of business were the Pennsylvania Company for Insurances on Lives and Granting Annuities (chartered 1812), the Massachusetts Hospital Life (1818), the Baltimore Life (1830), the New York Life and Trust (1830), and the Girard Life, Annuity and Trust of Pennsylvania (1836).

Despite this tentative start, life insurance did make some significant strides beginning in the 1830s. Life insurance in force (the total death benefit payable on all existing policies) grew steadily from about \$600,000 in 1830 to just under \$5 million a decade later. By 1850, just under \$100 million of life insurance was spread among 48 companies. The top three companies the Mutual Life of New York (1842), the Mutual Benefit Life of New Jersey (1845), and the Connecticut Mutual Life (1846)—accounted for more than half of this amount. The passage of laws permitting women to purchase life insurance on the lives of their husbands—free from the claims of creditors—and a change in the corporate structure of firms from stock to mutual companies accounts for much of the success during the 1840s.

The major boom period in life insurance sales occurred during and after the Civil War. Although the industry had no experience with mortality during war-particularly a war on American soil-and most policies contained clauses that forbade military service, almost all companies agreed to ensure war risks for an additional premium rate of from 2 percent to 5 percent. The goodwill and publicity engendered with the payment of each death claim, combined with a generally heightened awareness of mortality, greatly increased interest in life insurance. Whereas only 43 companies existed on the eve of the war, the newfound popularity of life insurance resulted in the establishment of 107 new companies between 1865 and 1870.

The success and profitability of life insurance companies bred stiff competition during the 1860s; the resulting market saturation and a general economic downtown combined to push the industry into a severe depression during the 1870s. For many postbellum companies, innovation into markets previously ignored by the larger life insurance organizations was the only means of avoiding failure. Beginning in the mid-1870s, companies such as the John Hancock (1862), the Metropolitan Life (1868), and the Prudential of America (1875) began issuing industrial life insurance. First sold in England in the late 1840s, industrial insurance targeted lower-income families by providing policies in amounts as small as \$100. Premiums ranging from \$0.05 to \$0.65 were collected on a weekly basis, often by agents coming door to door. Additionally, medical examinations were often not required, and policies could be written to cover

all members of the family instead of just the main breadwinner. Industrial insurance remained only one-sixth of the amount of life insurance in force through 1929, but the number of policies written had skyrocketed to just under 90 million. By the eve of the Great Depression there existed more than 120 million ordinary and industrial life insurance policies—approximately equivalent to one policy for every American man, woman, and child.

In response to a series of newspaper articles during 1905 that portrayed extravagant spending and political payoffs by executives of the Equitable Life Assurance Society, the New York state legislature convened the Armstrong Committee to examine the conduct of all life insurance companies operating within the state. Among the abuses uncovered were interlocking directorates, the use of proxy voting to frustrate policyholder control of mutual companies, inappropriate investments, unlimited company expenses, rebating (the practice of returning to a new client a portion of the first premium payment as an incentive to take out a policy), policy forms that were biased against policyholders, the encouragement of policy lapses, and the condoning of "twisting" (a practice whereby agents misrepresented and libeled rival firms in order to convince a policyholder to sacrifice her existing policy and replace it with one from that agent). The legislature responded by enacting a wide array of reform measures, including strict regulations regarding acceptable investments, limitations on lobbying practices and campaign contributions, the elimination of proxy voting, standardization of policy forms, and a ban on rebating and twisting by agents. Eventually 19 other states followed New York's lead in adopting similar legislation.

Throughout the 20th century, life insurance has been the second-largest financial intermediary in the country. In the year 2000, there were 369 million life policies worth \$16 trillion.

Although health insurance existed as early as 1847, it remained an extremely minor insurance

line until the late 1920s, when the cost and demand for medical care began to rapidly increase. In 1929, a group of Dallas teachers entered into a prepaid hospitalization plan with Baylor University Hospital. As incomes fell during the Great Depression, prepaid hospital plans began to spread among employee groups. In order to control competition between hospitals, the American Hospital Association eventually affiliated these plans under the name Blue Cross. Believing that such plans were in the public's best interest, states passed special legislation designating the Blue Cross plans as nonprofit corporations free from state insurance regulations. This nonprofit status required that they charge uniform rates regardless of health status.

As the popularity of Blue Cross plans spread, physicians began to fear that hospitals would use these plans to restrict their services. Additionally, the federal government began to consider the creation of national compulsory health insurance. In order to thwart these threats, in 1934 the American Medical Association began developing plans for prepaid insurance for physician's services, using Blue Cross as their model. The first such plan went into effect in California in 1939. By 1946, these plans affiliated under the name of Blue Shield.

With the success of Blue Cross and Blue Shield, for-profit insurance companies began entering the field. The major advantage enjoyed by the commercial companies was their ability to charge differential rates based on health status, enabling them to attract the healthiest groups away from the Blues with lower rates. Health insurance gained a further boost during World War II. As WAGE AND PRICE CONTROLS went into effect, companies began competing for scarce labor resources by providing better health benefit packages.

Although 75 percent of Americans were enrolled in some type of health insurance plan by the end of the 1950s, many groups were still excluded from this coverage. In 1965, Congress created Medicare to provide compulsory hospital insurance and supplementary medical insurance to Americans 65 and over. Additionally, Medicaid was established to provide federally supported, state-level coverage for the poorest Americans. In the year 2000, with medical costs skyrocketing and 17 percent of people under the age of 65 lacking health coverage—including 12 percent of children under 18—politicians and consumer groups continue to debate the plausibility of establishing a national health insurance plan.

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Sharon Ann Murphy

International Business Machines (IBM) IBM has been a worldwide leader in data processing for more than a century—first in electromechanical punched card tabulating machines, and then in digital computers and associated peripherals, software, and services. The firm had its origin in engineer and U.S. Patent Office employee Hermann Hollerith's invention of a punched card tabulator in the mid-1880s and the subsequent use of a refined version of this machine on the 1890 U.S. Census.

Hollerith's machine, which beat out others in a competition held by the Census Bureau to boost the tabulating efficiency over the prior census, greatly reduced the time and drudgery of this unparalleled data processing task. Based on this success, in 1896 Hollerith formed the Tabulating Machine Company to market his machines to government and industry. Though there were some difficult periods in the firm's early years, it soon achieved steady success, and Hollerith retired to significant wealth in 1911, when he sold the firm to industrialist Charles Flint. Flint immediately combined the company with several other firms and renamed it the Computing Tabulating Recording Company (C-T-R). Though Hollerith continued to actively consult for C-T-R for a couple years, he took a less-active role as soon as the firm hired a powerful new leader, Thomas Watson Sr.

Thomas Watson Sr. was a gifted manager who had learned from one of the nation's best executives as a salesperson at National Cash Register (NCR) during the first decade of the 20th century. NCR president John Patterson was legendary for creating a world-class sales organization and building his firm's dominance as the international leader in cash registers. Watson moved up the ranks to become Patterson's top sales manager before conflict with the president led to Watson's forced departure. C-T-R soon hired Watson as general manager in 1914, and the following year he became president of the firm. Watson immediately instituted an unwritten, but very real, formal dress code of dark suits for managers, the use of team-building company songs, and a meritocracy of sales based on quotas and incentives. The latter was taken directly from his experience at NCR. Watson's long reign as the leader at International Business Machines (IBM), the firm's new name (to reflect its global reach and diversification of products) after 1924, helped the firm to surpass NCR, Remington Rand (formerly Remington Typewriter), and Burroughs as the world's leading office machine producer during the 1930s and early 1940s. IBM achieved this position through its domination of the tabulation field, its excellent marketing and service network, and its consistent revenue streams resulting from punched card sales and machine rentals (its competitors primarily sold rather than leased machines). These factors proved critical during the unprecedented decade-and-a-half downturn of the Great Depression, when few organizations could afford to buy new office equipment.

University of Pennsylvania Moore School researchers J. Presper Eckert and John Mauchly completed the first digital computer for the U.S. Department of Defense in 1946. While the future business possibilities for computers were uncertain at this time, IBM nevertheless began to position itself to potentially enter this emerging new trade by investing heavily in electronics research by the end of the 1940s. Remington Rand had established a commercial lead by taking over the two pioneering digital computer firms, the Eckert-Mauchly Computer Corporation (developer of the UNIVAC) and Engineering Research Associates. Unlike Remington Rand, which sold its expensive UNIVACs in very low volume, IBM's strategy was to continue to build on its capabilities in electronics, and enter the COMPUTER INDUS-TRY only when it had either a major government contract or a commercial computer that could lease or sell in volume.

IBM, successfully implementing this strategy, entered the computer industry in the mid-1950s after receiving the primary computer contract on the Department of Defense Semi-Automatic Ground Environment project to create a computernetworked command and control air defense system. Over the next decade this brought in hundreds of millions of dollars in revenue to IBM. The firm also came out with a modest IBM 650 computer that rented, for several thousand dollars a month, in substantial volume. By the end of the 1950s, with Thomas Watson Jr. now president after his father's retirement, the firm announced its more powerful IBM 1401, a machine that took advantage of solid-state technology. Over the succeeding decade this machine would have more than 10,000 installations and establish IBM as the leading firm in the computer industry. Meanwhile, IBM's punched card tabulation machines continued to be very profitable in the 1950s and 1960s and greatly aided the company's computer business, as punched cards became the primary inputoutput device for early digital computers.

Despite IBM's success, by the beginning of the 1960s it faced a slow and steady challenge from competitors as a result of the lack of compatibility of its line of computers. IBM's customers had to invest substantially in purchasing custom software or developing programs internally, an investment that was lost each time they traded up to a new IBM computer. A special committee at IBM (the Spread Task Force) decided the best course of action was to develop an ambitious set of new computers, the IBM System/360 series. The series would cover a wide range of price points, and all would be compatible to run the same software. The number 360 was chosen to refer to 360 degrees, or the full circle of applications in science and business that the series would facilitate. IBM's investment in the project was massive, and its risk considerable. Thomas Watson Jr.'s announcement referred to the System/360 series as the most significant event in IBM's history. The project included a major effort to program a new operating system, OS 360. Despite the operating system being late in delivery and having cost overruns, IBM System/360 series was a phenomenal success that led to the firm gaining 70 percent of the domestic computer market by 1970. Another part of the adopted Spread Task Force strategy, IBM's further integration into internally manufacturing components, was far less successful.

In the 1970s, IBM's growth led to even greater bureaucracy and slower reaction to market change—problems that were in part concealed, but would become increasingly apparent in computing's new era. During the 1970s, IBM successfully entered the minicomputing field and rose to



The IBM System/360 (IBM CORPORATION)

gain significant market share against industry segment leader Digital Equipment Corporation. Minicomputing, however, would soon give way to personal computing. The firm introduced a personal computer, the IBM PC, in 1981, several years later than Apple and others. While the IBM PC soon propelled the firm to the top of the personal computer sector, there were some inherent structural problems. First, even though IBM was the largest software producer in the world, the firm lacked the skills to quickly develop an operating system for the PC. The company initially approached Digital Research but soon went with Microsoft to design the system software. Second, IBM was highly integrated and had a history of internally producing most hardware components. This proved the wrong model in the fastchanging personal computer field, in which a number of computer assemblers quickly jumped into the market or switched from their own systems to sell IBM clones for less than the computer giant. While IBM's reputation and customer base led to the rapid legitimization and acceptance of the PC as standard office equipment in the business world, and the IBM platform remained dominant, the firm had inadvertently set up other companies to reap most of the longer-term profits from personal computers and associated software products. Apple was the only company that stuck with its own platform, adopting a differentiation strategy, rather than cost-leadership. Apple achieved its success by developing better systems software, particularly on its new Macintosh line of the early to mid-1980s.

Over the past decade, IBM has adopted a mixture of playing to traditional strengths and boldly changing its strategy. In 1993, IBM broke with tradition and named the first chief executive officer from outside the firm, hiring away RJR Nabisco CEO Louis Gerstner to turn around the struggling company. Rather than break up IBM into a number of pieces, as some analysts supported, Gerstner made strategic cuts in personnel and then focused on and enhanced the company's long-established ability to offer integrated

solutions in numerous areas of data processing. In 1995, it acquired the Lotus Development Corporation, and the following year Tivoli Systems, Inc. With the growing importance of the World Wide Web by the 1990s IBM became committed to software and services to meet customers' ebusiness technological infrastructure and needs. This included competing in enterprise software fields against software powerhouses Oracle and BEA Systems. While IBM had built and extended its industry leadership by leasing and selling hardware and using strong after-sale services to further this primary goal, by the start of the 21st century, it was increasingly reversing this strategy to focus on selling high-margin software and services. IBM, long a firm with a major international presence, also extended its global services division, particularly in developing nations of the world.

See also WATSON, THOMAS J.

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Jeffrey R. Yost

International Harvester Company Chicagobased manufacturer and distributor of agricultural machinery, trucks, and construction equipment. The company was formed in 1902 with the merger of five leading agricultural equipment companies: the McCormick Harvesting Machine Company, Deering Harvester Company, Milwaukee Harvester Company, Plano Manufacturing Company, and Warder, Bushnell and Glessner. The merger was the culmination of more than 10 years of negotiation between the McCormick and Deering families, and was made possible by the third-party intervention of George W. Perkins, a representative of J. P. Morgan. During its first 10 years, the company was governed by a voting trust of Cyrus McCormicK Jr., Charles Deering, and George W. Perkins. This trust expired in 1912, leaving Cyrus McCormick Jr. as president of the company and the other principals as vice presidents or directors.

Upon its formation the company controlled more than 80 percent of domestic production of the most important farm machines, binders, and mowers. Over the next 20 years, International Harvester greatly expanded its product line through the acquisition of existing companies and the creation of new production facilities in the United States and abroad. In 1917, it was the seventh-largest company in America. By 1920, the company had acquired the D. M. Osborne Company, Keystone Company, Weber Wagon Company, Kemp Manure Spreader Company, Chattanooga Plow Company, Minnie Harvester Company, and the Parlin and Orendorff Company. The company had also begun to manufacture construction equipment and trucks.

International Harvester's rapid growth continued during the 1920s, and its sales tripled to more than \$300 million per year by 1929. One of the company's best-known and most important products, the Farmall tractor, contributed to this success. The Farmall was introduced in 1922 and by 1927 was the best-selling tractor in the industry. The company also continued to expand its overseas operations. By the end of the decade it had subsidiaries in Canada, France, Germany, Sweden, Argentina, Australia, Denmark, Great Britain, Italy, Latvia, New Zealand, Norway, South Africa, Spain, and Switzerland.

The growth of the company was interrupted by the onset of the Great Depression in 1929. The company suffered a drastic loss of income, and did not return to peak sales levels until the end of the 1930s. The company experienced renewed growth in the 1940s with the help of World War II government contracts and a postwar economic boom. In 1948, International Harvester was the world's leading manufacturer of farm machinery, America's largest heavy-duty truck manufacturer, and a major force in the construction equipment industry. The company also launched a major line of household refrigerators. Its total sales surpassed \$900 million.

During the 1950s and 1960s, the company continued on a path of investment and expansion, but struggled to overcome labor strife and persistently weak profit margins. The company sold its refrigeration line to Whirlpool in 1955 and lost its lead in the farm machinery industry to John Deere & Co. in 1958. In addition, despite heavy investment in construction equipment, it failed to gain ground on Caterpillar, its chief rival in that industry. On the other hand, the company's truck business grew in importance, surpassing farm equipment in total sales in 1954. By 1961, the company controlled 33 percent of the heavy-duty truck market.

International Harvester made modest gains in profits in the early 1970s, particularly in its heavyduty truck line. It continued to trail its competitors in the agricultural machinery and construction equipment industries, however. In 1980, the company experienced a six-month United Auto Workers strike, followed by a series of recessions in its prime markets. In serious financial trouble, the company sold its construction equipment line to Dresser Industries in 1982. Two years later it sold its agricultural equipment line to Tenneco, where it became part of the J. I. Case Corporation. In 1985, the company reorganized under the name Navistar International Transportation Corporation, and devoted itself to the manufacture and distribution of trucks and engines.

See also DEERE, JOHN; MORGAN, JOHN PIERPONT.

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Lee Grady

Internet A computer-based communications system allowing users to communicate quickly without relying upon telephone communication. The enabling technology of the Internet, packet switching, was invented in the early 1960s, but it took 30 years for the first primitive computer networks to evolve into today's ubiquitous information infrastructure.

Until the invention of packet switching, users could be connected to only one computer at a time, using a long-distance telephone line. This was expensive, because the telephone connection was used an average of only 2 percent of the time, and unreliable, because if the telephone connection failed communication ceased altogether. In packet switching, data was transmitted not by a dedicated communications line, but by converting it into "packets," rather like telegrams, containing the address of the sender and recipient. A packet-switched network contained many communications lines interconnected by small, message-processing computers-now called routers-that directed the flow of packets in the network.

The pioneering packet-switched network was Arpanet, initially connecting just four "host" computers in 1969, which was funded by the U.S. Department of Defense's Advanced Research Projects Agency. Development of the Arpanet was contracted out to a group of American universities, and this led to a uniquely democratic, occasionally anarchic, culture. By 1971, Arpanet had 23 computers attached to it. Originally, the network had been designed so that users could make use of specialized computers remote from their place of work. However, it turned out that the main use of the network was for electronic mail, something the designers had never envisioned.

In the period 1975-85, other computer networks sprang up around the world, usually based on some form of packet switching. Some of them were commercial networks, while others were private networks owned by governments or MULTINATIONAL CORPORATIONS. The early 1980s also saw the development of on-line computer services such as CompuServe and America Online (AOL) for home computer users. The problem with these networks was that they could not communicate with each other. For example, users could e-mail only people within their own network, and could access only the information located on their particular network. However, in the late 1970s, the Advanced Research Projects Agency-the sponsor of Arpanet-began to addresss this problem, which it called inter-networking, or simply the Internet.

It devised a set of rules-known as a "protocol"-for communication between networks. This was the Transmission Control Protocol/Internet Protocol, or simply TCP/IP, a mysterious acronym familiar to most experienced users of the Internet. Gradually many of the world's non-military networks began to connect with one another. Thus, the Internet is simply a network of computer networks, but it was a miracle of cooperation, each network adding to the telecommunications infrastructure piece-bypiece without payment from any centralized funding authority. By 1988, there were 50,000 host computers attached to the Internet. Three vears later there were a million. The early 1990s saw the first commercial Internet Service Providers (ISPs), which gave inexpensive commercial and domestic access to the Internet. The issue of the Internet became highly politicized in the Clinton-Gore election campaign in 1992, in which the candidates expressed the need to provide Internet access to all Americans, just as earlier generations had had access to the postal service and the telephone.

Increasingly, the Internet came to be viewed not as a computing and communications resource but as an information repository, but it was difficult to access this information unless one was a trained information researcher. In 1989, a young, British-born researcher at the CERN nuclear research laboratory in Geneva, Tim Berners-Lee, invented a method of organizing information that he called the World Wide Web (WWW-or simply the Web). To view information on the Web, one would use a "browser" to view an on-line document, using navigation buttons and links to move within the document or to another document. The information itself, however, would be effectively disembodied in cyberspace-existing on computers here, there, and everywhere.

The World Wide Web liberated the Internet. In 1993, the primary users of the Internet had been academics and scientists; five years later, there were 130 million users around the world from all walks of life. The Internet became increasingly commercialized. One of the major commercial successes was the Netscape Corporation, whose Netscape Navigator browser, introduced in December 1994, did much to popularize the Internet. Other corporations such as Yahoo and Lycos were commercial spin-offs of "search engines" originally developed in universities to help locate information on the Web. In 1995, Microsoft introduced its Internet Explorer browser and the Microsoft Network (MSN), seeking to dominate the Internet as it had the personal computer. However, as the content of any one network was dwarfed by the riches of the Internet as a whole, full-service providers such as CompuServe, AOL, and MSN quickly changed their business model to become Internet Service Providers and mere "portals" to the World Wide Web.

By 1996, there were 10 million host computers on the Internet, a number that was doubling every 18 months. By 2000, there were more than 70 million. The Internet enabled a new commercial paradigm, based on the reduction of economic friction by eliminating middlemen and physical inventories. The best-known example was Amazon.com, the on-line bookstore established by Jim Bezos, a 30-year-old entrepreneur, in 1995; five years later it had more than 10 million customers. The Internet was a Klondike for so-called dot-com entrepreneurs, with hundreds and eventually thousands of new businesses being formed, such as travel agencies, "e-tailers," stockbrokers, and on-line auctioneers. By 2000, all significant businesses, whether new economy or old economy, found it necessary to have a Web "presence."

See also COMPUTER INDUSTRY; INTERNATIONAL BUSINESS MACHINES.

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Martin Campbell-Kelly

Interstate Branching Act (1994) A banking law passed by Congress, and the first significant change in the structure and geography of banking since the 1920s. Also known as the Riegle-Neal Interstate Banking and Branching Efficiency Act, the law allowed bank holding companies to merge across state lines. They were also allowed to merge their operations into national networks. In some cases, banks had been able to do so previously but were required to open subsidiary operations in another state. The act abolished the need to establish specialized subsidiaries.

Interstate banking had been seriously constricted since Congress passed the MCFADDEN ACT in 1927, prohibiting banks from opening de novo (new) out-of-state branches. The original act was an attempt to prevent bank expansion at the same time that CHAIN STORES were spreading across the country and was widely seen as an attempt to prevent banks from becoming truly national by expanding in the same manner.

In the years between 1927 and 1994, banks were sometimes able to open limited banking

operations in other states through subsidiary companies, but the ultimate decision lay with the banking authorities in the state in which the subsidiary was proposed. As a result, interstate banking was effectively prohibited until the McFadden Act was replaced with more liberal banking regulation. The cost of opening and operating subsidiaries in those states that did permit out-of-state banks to operate was also expensive and proved a hindrance to many banks that thought of expanding operations.

After the act was passed, U.S. banking entered a consolidation phase that witnessed the merger of many bank holding companies across state lines. Among the largest was the merger between NationsBank of North Carolina and the BANK OF AMERICA, with headquarters in California. Other regional banking MERGERS also occurred, enabling banks to widen their operations if not to become truly national, spreading into all states. The states also had to change their existing laws concerning out-of-state banking in order to comply with the new law. The law was one in a series of banking deregulation laws passed during the 1990s.

See also Federal Reserve; Financial Services Modernization Act.

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Interstate Commerce Commission (ICC)

A federal agency established by Congress in 1887 to regulate the RAILROADS. The ICC was created by the Interstate Commerce Act. The original emphasis of the commission was to control the railroad practice of granting rebates to the largest customers, thereby eliminating price discrimination. Many of the railroads had granted rebates to their largest customers, and industrialists such as Andrew CARNEGIE and John D. Rockefeller used the rebates to their benefit in accumulating monopoly power in their own industries. In addition, the law required railroads to publish their rates and entrusted the ICC with enforcing the new regulations.

The ICC's power temporarily was curtailed in 1897 when the Supreme Court denied its power to set maximum railroad rates. Congress responded in 1906 by passing the Hepburn Act, which again gave the agency power over rates and extended its jurisdiction to oil pipelines. After World War I, the agency was given additional power under the Esch-Cummins Transportation Act to consolidate the railroads into 20 operating systems and to regulate minimum rates as well. In 1935, the Motor Carrier Act brought the trucking industry under ICC regulation, and in 1940, the Transportation Act brought water carriers under its jurisdiction as well.

After World War II, the tide began to shift against the ICC as railroads began to lose market share to trucking and other forms of transportation. DEREGULATION in the 1980s made the agency's original powers less important to fair competition and the economy, and calls were heard in the late 1980s for its abolition. After the deregulation of rail rates and practices in the STAGGERS RAIL ACT of 1980, and subsequent motor carrier deregulation, the ICC shrank considerably. When the decision to abolish the ICC finally was made by Congress in 1995, REGULATION of railroads was further reduced, and almost all of the former ICC responsibilities were transferred to the Department of Transportation. The new successor agency, the Surface Transportation Board, began with an almost entirely railroad-oriented set of responsibilities.

The ICC formally was abolished at the end of 1995, and many of its powers were assumed by the Surface Transportation Board (STB). The ICC Termination Act of 1995 established the STB as a three-member independent agency affiliated with the Department of Transportation. Its three members are appointed by the president, serving staggered five-year terms.

The demise of the ICC is one of the few examples of changing trends in transportation

and industry having a negative effect on the regulator originally charged with overseeing a particular sector of the economy.

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Interstate Highway Act Technically, the name of this legislation was the Federal-Aid Highway Act of 1956, one of a series of laws passed over a 50-year period that created the federal highway system. The word "interstate" is used to distinguish it from its predecessors because this act created the interstate highway system currently spanning the United States—a roadway that stretched coast-to-coast rather than simply from city to city as the older model provided.

The first federal highway act was passed in 1916 and designated \$50 million to be used to create a system of rural roads to be used for mail delivery. The program originally was known as the Lincoln Highway, and it linked many existing roads rather than building new ones to complement them. In 1923, the program was expanded to include a series of highways designed to link major cities. Federal money was matched by states in order to build the roads. The government allocated about \$75 million per year during the 1920s to the program. The program was enhanced when federal highways were extended into urban areas, and secondary roads were added in the 1930s and 1940s. The interstate system was authorized in 1944, but funding and work did not begin seriously until the 1950s.

Interstate highways originally were envisioned as part of the national defense system during the Eisenhower administration. The president remembered the terrible condition of the country's road system at the end of World War I and advocated upgrading highway transportation even

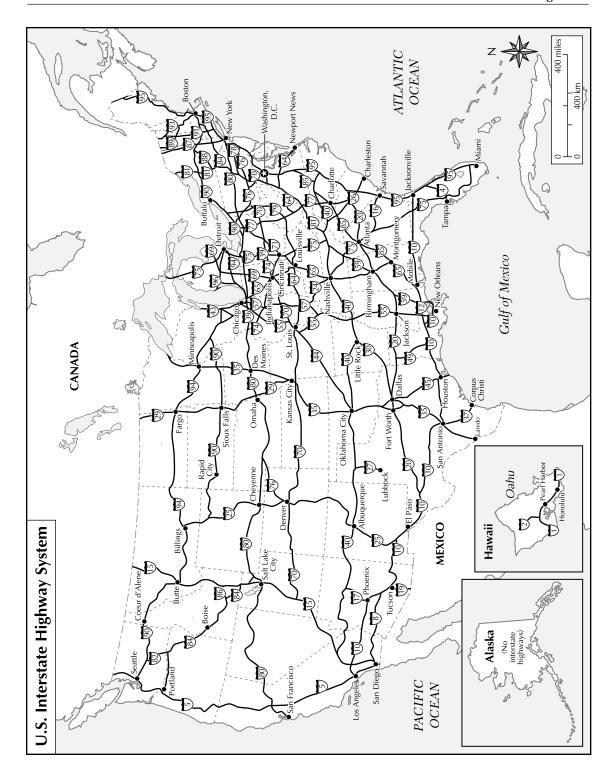
more than it had been in the 35 years since that war ended. It was viewed both as an economicand defense-related issue. The system encompassed 42,500 miles of new highway at a cost of \$25 billion, with the federal government assuming 90 percent of the cost. The 1956 act called for uniform design standards. The project became the largest public works project in American history and is responsible for many distinct changes in the nature of American life. It aided the expansion of the economy that began in the 1950s and enabled truck transportation to supplant RAIL-ROADS as the major method of transporting freight, and the automobile as the preferred way of transporting people. When the STAGGERS RAIL ACT was passed in 1980, it was an acknowledgment that truck transport of freight had overtaken the railroads as the major source of long-distance hauling. One result was the eventual demise of the INTERSTATE COMMERCE COMMIS-SION, the agency originally created to regulate the railroads; it was replaced by the Surface Transportation Board in 1996.

Many unique American developments can also be traced to the increased use of the automobile and truck, including shopping malls, the decline of inner cities, and the general trend toward the suburbs after World War II. The development of the first mass-scale housing development at LEVIT-TOWN, Long Island, in the 1950s was testimony to the rise of car and truck transportation.

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investment banking The part of banking that is concerned with securities underwriting and trading as well as other specialized financial services. Most investment banking activities



charge a fee for their services, unlike traditional commercial banking, which relies upon the spread, or difference, between interest paid on deposits and the interest earned on loans.

The industry began in the early part of the 19th century when private banks began to help companies sell stock to the public. Investment banking firms that began before the Civil War included Riggs & Co., CLARK DODGE & Co., Alex. Brown & Co., and Vermilye & Co. Prior to the Civil War, investment banks were crucial in selling TREASURY BONDS during wartime. The bestknown bank engaging in this specialty was Jay Cooke & Co.

Traditionally, investment banking encompassed the underwriting of new securities and advising companies on MERGERS and acquisitions. After the Civil War, many investment banks underwrote securities for the RAILROADS, enabling them to expand westward to California and link major markets. After the 20th century began, investment banking expanded to include trading in the money market and the sale and trading of securities in the secondary markets such as the NEW YORK STOCK EXCHANGE. After a congressional inquiry in 1912, many banks organized themselves by founding the Investment Bankers Association, the first trade group dedicated to the industry. The group was later renamed the Securities Industry Association. Prior to the 1930s, investment banking was part of the general service of banking for companies, practiced along with COMMERCIAL BANKING or private banking under the same roof. Those operations that were solely for the brokerage or sale of securities were practiced by stockbrokers.

The modern investment banking industry inadvertently was created by the Banking Act (Glass-Steagall Act) of 1933, which forced a separation between commercial and investment banks. Many banks that engaged in investment banking divested their security affiliates in order to comply with the law, and the modern investment banking industry was born. Notable investment banks created at the time included MORGAN STANLEY & CO. and the First Boston Corp. In the 1950s and 1960s, traditional stockbrokers such as Merrill Lynch began to expand into the full array of investment banking services and helped revolutionize the business by making the services available to the small, or retail, investor. Until that time, investment banks never dealt with the public but only with companies. The only exception had been the private banks, which catered to wealthy individuals.

Most investment banks remained partnerships until the 1970s, when they slowly began to sell stock and go public. Increased need for capital and an expanding marketplace made partnerships obsolete; by 1999 no significant private investment banks remained after GOLDMAN SACHS went public that year. When the Financial Modernization Act was passed in 1999, it allowed mergers between commercial bank holding companies and securities firms again for the first time in more than 60 years. The merger of CITIBANK with Travelers Insurance in 1998 was the first of its type in the post-1933 era because Travelers already owned investment banks Smith Barney & Co. and SALOMON BROTHERS, bringing both under the Citigroup banner.

See also Dillon Read & Co.; Drexel Burnham Lambert; Kidder Peabody & Co.; Morgan, John Pierpont; Seligman & Co., J. & W.

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Jobs, Steve (1955–) computer designer Steven Paul Jobs was born in California in 1955 and adopted by a machinist and his accountant wife. While passing through local schools in Mountainview, California, Jobs began displaying an aptitude for electronics and mechanical tinkering. He managed to secure a summer job at the nearby Hewlett-Packard computer firm, where he met and befriended Steve Wozniak, a fellow computer enthusiast. Jobs dropped out of college in 1972 and spent several years studying Eastern philosophy while designing games for the Atari computer firm. After a spiritual foray to India, where he caught dysentery, Jobs came home to California and reunited with Wozniak in 1975. Both young men began experimenting with the concept of a low-cost, high-speed computer for home and personal use and founded the Apple Computer Company in Jobs's garage. A working model, christened Apple I, was designed in 1976 and offered to Hewlett-Packard, which turned it down. However, it sold relatively well on its own, and a legend was born. This was followed by an even more advanced design, Apple II, in 1977, which opened the age of desktop information processing. Sales of this revolutionary technology proved phenomenal and reached \$200 million by 1980. However, as other companies invested in small computers, fierce competition erupted for the growing marketplace. Jobs subsequently stumbled badly in 1980 when his new Apple III computer proved overpriced and prone to technological glitches. A newer design, the Macintosh, was introduced in 1984, but it also sold poorly. By 1985, Apple Computers had lost half its market share to IBM, so Jobs resigned as chairman and voluntarily departed.

Undeterred, Jobs founded a new company, NeXT, in 1985 with \$100 million of his personal assets. Thereafter he dedicated himself to designing revolutionary computer hardware for research and educational purposes. Innovative machines emerged from the company, but marketing and sales proved lackluster. Jobs, wishing to diversify, then purchased a small computer animation company named PIXAR from renowned filmmaker George Lucas in 1986. He immediately realized the potential for computer-generated film effects and poured \$40 million into new technology and programming while entering into a film deal with Walt Disney Productions. In 1996, PIXAR released *Toy Story*, the first completely computer-generated film, to rave reviews, and company stock rebounded accordingly. Within a year, PIXAR's assets were worth more than \$1 billion. Jobs also enjoyed a measure of revenge when Apple bought out his NeXT Company and solicited his return as chief executive officer.

In 1997, Jobs again made headlines when Bill GATES of Microsoft Corporation unexpectedly joined forces with his erstwhile rival Apple Computers. Moreover, Jobs invested \$150 million into the ailing firm in exchange for a nonvoting minority in the company. The alliance between Gates and Jobs, two legendary giants of the computer world, has rendered them a formidable force in terms of both hardware and software development. But Jobs scored an even greater success with his revitalized PIXAR company. Over the past decade five highly successful PIXAR films have yielded more than \$1 billion in profit for both companies, with Disney receiving the lion's share. However, in the spring of 2003, PIXAR made and released the animated film Finding Nemo for Disney, which grossed more than \$300 million. This made it the most successful animated film in history and induced Jobs to reevaluate his relations with Disney CEO Michael Eisner. He demanded a complete overhaul of their working relationship, reversing the arrangement whereby PIXAR received a pittance. Jobs insisted that PIXAR receive the majority of profit from all future releases, whereas Disney's take would be reduced to 10 percent. Failing that, Jobs was willing to offer PIXAR's services to any one of a number of well-financed Hollywood competitors. Despite his growing relationship with the MOTION PICTURE INDUSTRY, Jobs remains indelibly associated with the rise and triumph of the home computer market. "We started out to get a computer in the hands of everybody," he declared, "and we succeeded beyond our wildest dreams."

See also COMPUTER INDUSTRY.

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John C. Fredriksen

Johnson, Hugh Samuel (1882–1942) *army officer, public official, and author* Born on August 5, 1882, in Fort Scott, Kansas, Hugh S. Johnson was the son of Samuel L. Johnson, an attorney and rancher, and Elizabeth Mead Johnson. Educated in Wichita, Kansas, and Alva, Oklahoma, he graduated in 1903 from the U.S. Military Academy and was commissioned a second lieutenant. He then married Helen Leslie and had one son. In 1915, he received his bachelor's degree from the University of California and in 1916 his J.D.

Johnson's army career was significant by allowing him to meet and work with individuals and agencies that helped his career. Between 1903 and 1919, Johnson served as a quartermaster of refugees in the aftermath of the San Francisco earthquake, superintendent of Yosemite National Park, deputy provost marshal under General Enoch Crowder, with the responsibility of enforcing the Selective Service Act, and assistant director under General George Goethals of the Purchase and Supply Bureau. He also worked under Bernard BARUCH of the War Industries Board during World War I. In 1919, Johnson, a brigadier general, retired from the army. He became vice president and assistant general manager, then general counsel, and, in 1925, chair of the board of directors of the Moline Plow Company.

By 1927, Johnson, having already worked with George Peek on the McNary-Haugen programs for farm relief, was again working with Baruch until in 1933 president-elect Franklin D.

Roosevelt called upon Johnson to help finalize NEW DEAL plans for economic recovery. Johnson's contributions to the National Industrial Recovery Act were so important that Roosevelt appointed him the director of the NRA. It was in this capacity that Johnson implemented his ideas on industrial self-government through the codes of fair competition for nearly 480 different American industries. Unfortunately, despite the hopes and euphoria surrounding the NRA and its Blue Eagle, the program began to fail quickly until, in September 1934, Johnson was forced to resign. He remained within the New Deal as director of the WPA in New York only briefly. In 1935, Johnson left public service and began his "Hugh Johnson Says" column for the Scripps-Howard newspaper chain; he gradually came to oppose FDR's later New Deal programs and openly broke with the president in 1940.

Brusque, vituperative, and alcoholic yet brilliant, Johnson ("Old Iron Pants") died of pneumonia in Washington, D.C., on April 15, 1942.

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Michael V. Namorato

junk bonds The term given to bonds of less than investment-grade quality. There are two types of these bonds: those that were initially sold when the issuing company was low rated and those that were originally investment-grade bonds but later were downgraded in quality by the rating agencies.

Bonds of the latter type were previously called "fallen angels." Traditionally in the U.S. capital market, only companies with investment-grade credit ratings were able to borrow on the bond market. Companies with less than investmentgrade ratings were normally forced to borrow from banks at higher interest rates and for shorter periods of time than they would have preferred, often altering their capital investment plans.

The market for original-issue junk bonds, technically high-yield bonds, was developed in the 1970s by Michael Milken at DREXEL BURNHAM LAMBERT. Many of them were issued as originalissue discount bonds, meaning that their coupons were set artificially low so that their yield to maturity would reflect their risk. When the bonds matured, the borrowing company would have to repay the full face amount-an amount above that which was raised originally. Many companies that were excluded from the corporate bond market made use of the junk market, and by the mid-1980s it had become a major corporate bond market sector in its own right. Junk bonds were also widely used in the corporate takeover and merger trend that developed in the mid-1980s.

Junk bonds became popular after the DEPOSI-TORY INSTITUTIONS ACT was passed in 1982, allowing thrift institutions to purchase them in limited amounts, reversing a long-standing prohibition against limited-purpose banking institutions buying corporate securities originally found in the BANKING ACT OF 1933. Their relative lack of liquidity in the secondary market became an issue after the savings and loan crisis in 1988, and the RECESSION in 1990–91 caused some junk bonds to default. But the market recovered in the mid-1990s, and junk bonds have become an accepted form of finance for companies that have not gained investment-grade status.

See also investment banking; Treasury bonds.

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J. Walter Thompson New York advertising agency opened in 1871 by J. Walter Thompson; it made a fortune in the ADVERTISING INDUSTRY.

The agency transformed magazines into eyecatching issues that were underwritten by advertising and reached millions of homes. It began when Thompson took over the Carlton & Smith agency (founded in 1864). Once there, he focused his attention on soliciting business for general magazines. Thompson, more than any other agent, worked up a vast amount of advertising revenue for an array of magazines, such as *Good Housekeeping* (1885), *Vogue* (1892), and *House Beautiful* (1896). In fact, Thompson bought virtually all the magazine space available to advertisers and controlled nearly all the advertising space in American magazines as late as 1898.

As early as the 1890s, the company established branch offices in Boston, Chicago, and London. The agency also began to create advertisements, develop trademarks, and design packages for its clients.

When J. Walter Thompson hired Stanley Resor and his brother to establish a Cincinnati office, they brought Helen Lansdowne along as the sole copywriter, later moving to the New York office. A group headed by Stanley bought out the retiring Thompson in 1916, and the following year Stanley and Helen married. The husband-and-wife team ran the agency together; he managed client services, and she supervised ad creation. The agency's billings more than tripled, from \$10.7 million in 1922 to \$37.5 million by the end of the decade, making it the industry leader in total billings, a position it maintained for the next 50 years.

The agency's president, Stanley Resor, the first major advertising executive with a college background, fostered a scientific approach to advertising. J. Walter Thompson's demographic study, combined with the Curtis Publishing Company's findings, provided a factual base on which future marketing researchers would build. In 1912, Stanley Resor commissioned a study entitled "Population and Its Distribution," which listed demographics of the population by category and state. The agency continued to update the research to describe more precisely the consumer population, to track the growth of wholesale and retail stores in large cities, and so on. In 1915, the company established a research department and hired behavioral psychologist Dr. John B. Watson and other experts in the social sciences who would advance marketing research. These professionals applied motivational studies to advertising, initiated the use of scientific and medical findings as a basis for copy, and established the consumer panel, composed of families whose buying habits were surveyed and passed on to clients.

In the early 20th century, J. Walter Thompson handled many products that were purchased by women. Helen Resor's insight added the feminine point of view. Her words and visuals embraced women's hopes, fears, desires, and dreams regardless of what they did for a living. The powerful style worked in promoting Woodbury's Facial Soap ("A skin you love to touch"), Crisco vegetable shortening, Maxwell House and Yuban coffee, Lux soap, and Cutex nail polish.

During the 1920s, J. Walter Thompson led the ad industry in both innovative copy styles and the variety of services offered to clients. The agency pioneered the dramatic shift from selling goods and services to using well-known psychological appeals to reach customers. The agency's advertisement for products such as Fleischmann's yeast, Odorono deodorant, and Lux soap successfully incorporated fear, sex, and emulation appeals. The company's innovative methods included the sophisticated use of testimonial advertising, such as employing royalty and socialites in Pond's advertisements, and the use of photography in advertisements. The agency also provided the best opportunities for women, with its Women's Copy Group handling the majority of the agencies' soap, food, drugs, and toiletries accounts.

Thompson expanded into the new medium of advertising—radio. At this time, single sponsors underwrote most of the popular shows, while their agencies served as the producers. During the 1930s and 1940s, the Radio Department produced some of the most popular shows on the air, including the *Fleischmann Yeast Hour* with crooner Rudy Vallee, the *Chase and Sanborn Hour*, and the *Kraft Music Hall*. Next, Thompson brought its success in radio to the new medium of television, producing the first variety show, *The Hour Glass*, and first dramatic show, *Kraft Television Theater*. When the networks assumed the programming function in the late 1950s, Thompson continued to help develop *Father Knows Best*, *Naked City*, *Wagon Train*, *Ozzie and Harriet*, *Kraft Music Hall*, *Bat Masterson*, and *Have Gun Will Travel*.

At the same time, the agency dominated the international field. The company had already established itself abroad as the first American agency with offices in Great Britain in 1899 and on the European continent in the 1920s. GEN-ERAL MOTORS took the agency into Latin America in the following decade. By the end of World War II, the agency was operating 15 foreign offices and quickly added another 14.

In 1969, J. Walter Thompson became a publicly held corporation. In 1980 the firm reorganized to form a new HOLDING COMPANY, JWT Group, Inc., with J. Walter Thompson as the largest subsidiary, along with advertising, public relations, and marketing subsidiaries, which Thompson had acquired during the previous decade. During the 1980s, however, global marketers pushed international advertising expenditures to unprecedented levels. The subsequent mega-merger activity amidst agencies signaled the growing importance of putting worldwide capabilities in place to handle global clients. And in 1989, the London-based WPP group acquired both the J. Walter Thompson Company and the Ogilvy Group.

Today the J. Walter Thompson Company continues to be an industry leader, with more than 8,000 employees in 150 cities and 86 countries. In 2004, the company ranked as the fourthlargest global agency and the largest U.S. agency. The company's roster of multinational clients includes Rolex, Kraft, Kellogg's, Ford, Unilever, Pfizer, Reckitt Benckiser, and Schick.

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Juliann Sivulka

K

Kaiser, Henry J. (1882–1967) *businessman and entrepreneur* Kaiser was born in New York in 1882. After holding a number of menial jobs, he moved to Spokane, Washington. He learned the construction business and began to bid on public works projects, first in Canada and then in the United States. He also participated in building the major Cuban highway in 1927 before returning to the United States.

During the early years of the Depression, he bid for work on the proposed Boulder Dam on the Colorado along with a group of other construction companies. It was the largest building project ever proposed until that time. After successfully completing it, his company worked on other large public works projects, including the Bonneville Dam on the Columbia River. The Grand Coulee Dam followed. He also worked on the Shasta Dam in California, not as a contractor but as a supplier of cement. By the late 1930s, he had developed a reputation as an efficient builder who brought projects in under schedule and at great profit to himself.

World War II saw Kaiser enter the shipbuilding business, doing contract work for both the British and American governments. He began building ships for troop and cargo transport and often completed them in as little as one week, breaking all records in the process and acquiring a reputation as one of the war's best-known entrepreneurs. After the war he continued in the steel business, and Kaiser Steel became one of the country's major manufacturers. He also dabbled in automobile production and developed a car named after him, the Kaiser. One of his major investors was Cyrus EATON, but the cars went out of production after several years due to competition from the Big Three automakers. In the 1950s, he turned his attention to land development and helped develop a sizable portion of Waikiki on Oahu, in Hawaii.

At his death in 1967, he was still chairman of Kaiser Industries, an organization that involved steel, home building, and aluminum. Kaiser's lasting legacy is found in the health care organization that evolved out of his own organization, in which it provided health care to his construction workers. The Kaiser Permanente Medical Care Program became one of the earliest and largest of what later became known as prepaid health maintenance organizations, or HMOs.

See also NEW DEAL.



Henry J. Kaiser (LIBRARY OF CONGRESS)

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Kennedy, Joseph Patrick (1888–1969) *financier, U.S. government official, and diplomat* Kennedy was the progenitor of an American political dynasty. Despite poor marks in economics, after graduating from Harvard College in 1912, Kennedy was drawn to a career in banking, serving as a Massachusetts assistant state bank examiner between 1912 and late 1913. In early 1914, Kennedy played a pivotal role in rescuing the Columbia Trust Company, which his father had helped found, from absorption into a larger

concern, and was elected to the bank's presidency at the age of 24. Shortly afterward, he married former Boston mayor John Fitzgerald's eldest daughter, Rose, who would eventually bear him nine children.

With the United States' intervention into the First World War, Kennedy served as assistant general manager of Bethlehem Steel's Fore River Shipyard, south of Boston. Shortly after the armistice Kennedy became office manager of the brokerage of Hayden, Stone and Company, where he developed a particular interest in what were, at the time, new entertainment-related technologies. Unable to interest any buyers in a foundering film production and distribution outfit that he had been commissioned to sell in 1922, Kennedy bought Film Booking Offices of America with a small syndicate of Boston investors in early 1926 and became the company's president.

Between 1926 and 1930, Kennedy spent much of his time in California, overseeing not only his own interests, but also serving as a special business adviser to a number of other studios and production companies. Beginning in December 1927, Kennedy, Radio Corporation of America vice president David SARNOFF, and Keith-Albee-Orpheum vaudeville circuit general manager J. J. Murdock brought about a number of stock transfers that intertwined the holdings and corporate structures of RCA, FBO, and K-A-O. By May 1928, Kennedy, Sarnoff, and Murdock had formed the Radio-Keith-Orpheum Corporation, thereby effectuating the largest merger to date in Hollywood history.

"Untouched," as Kennedy put it, by the Crash of 1929, he divested the bulk of his film holdings and left Hollywood permanently in 1930, returning to the East Coast to resume the stock trading practices for which he was already becoming notorious. He supported Franklin Roosevelt's presidential candidacy in 1932 and assumed the chairmanship of the newly formed Securities and Exchange Commission two years later, despite his reputation on Wall Street. By the time of his resignation in September 1935, the commission's successes in helping to end abusive trading practices and in regulating the formerly autonomous exchanges won Kennedy overwhelming praise both among his administration colleagues and in the political press. He returned to the private sector briefly as a consultant to RCA, William Randolph Hearst, and Paramount Pictures, before assuming his second government posting as chairman of the U.S. Maritime Commission in April 1937.

He resigned his chairmanship after only eight months in order to become the U.S. ambassador to the Court of St. James's. Despite a warm welcome in London, as war approached Kennedy's unwavering advocacy of American neutrality made him unpopular on both sides of the Atlantic and ultimately ended his once cordial relationship with Roosevelt. Returning to the United States in October 1940, Kennedy entered a state of semiretirement. During the war he maintained a number of his earlier business interests, invested extensively in Manhattan real estate, and purchased the Chicago Merchandise Mart. In the late 1940s, he endowed a foundation in memory of his eldest son and began to focus much of his attention on the public careers of his surviving children.

See also New Deal; Securities Exchange Act of 1934.

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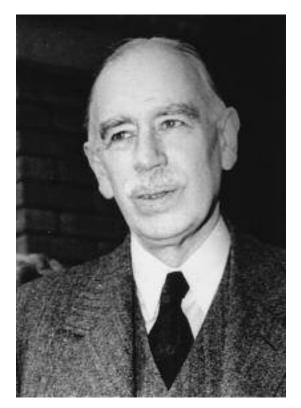
Amanda Smith

Keynes, John Maynard (1883–1946) *British economist, public servant, and writer* Son of a Cambridge logician and political economist, John Maynard Keynes was educated at Eton and King's College, Cambridge. In 1906, he sat for the civil service exam and placed second, receiving one of his lowest scores in economics. He took a position in the India Office and spent much of his spare time writing a dissertation on probability, which he submitted for a fellowship at Cambridge. It was subsequently published as *A Treatise on Probability* (1921). He became a permanent fellow of King's College in 1911 and remained active in the life of the college throughout the rest of his life, combining the roles of lecturer in economics, bursar of King's College, and editor of the *Economic Journal*.

During World War I, Keynes served in the British Treasury and after the war took part in the peace negotiations at Versailles. He resigned in protest over the severity of the reparations being demanded, believing they would lead to economic collapse. He developed his objections in *The Economic Consequences of the Peace* (1919), a best-selling polemic that was translated into many languages and gained him worldwide fame.

Keynes's other books included Indian Currency and Finance (1913), A Tract on Monetary Reform (1923), and A Treatise on Money (1931). The Treatise, in which Keynes began to develop the theory for which he would become famous, received a harsh review by Friedrich Hayek from the London School of Economics. During the 1930s, economists at the LSE and Cambridge vigorously debated the appropriate remedy for prolonged unemployment. LSE economists thought the problem was that wages needed to adjust to correct problems of the labor market. Keynes and other Cambridge economists believed the problem was a deficiency of aggregate demand. The LSE solution was one of laissezfaire: Tolerate unemployment and allow wages to adjust downward. The Keynesian solution was to boost aggregate demand through deficit financed government spending. In an open letter published in the New York Times in 1933, Keynes urged Franklin D. Roosevelt to adopt an expansionary policy for the United States. In The General Theory of Money, Interest and Prices (1936), Keynes attempted to provide theoretical justification for his policy prescription. Keynes's ideas have often been described as a blueprint for the NEW DEAL, but his influence was more indirect. Franklin Roosevelt's advisers were aware of his work, but FDR was reported to have disliked Keynes personally.

Keynes was the chief British representative at Bretton Woods in 1944 where, along with Harry Dexter White, a system of fixed exchange rates was formulated that became known as the BRET-TON WOODS SYSTEM; its fixed parities would remain in place until the early 1970s. Throughout his life, Keynes maintained an interest in the arts and the artistic life. Keynes established and largely financed the Cambridge Arts Theater and was a trustee of the National Gallery. After years



John Maynard Keynes (LIBRARY OF CONGRESS)

of suffering with heart disease, Keynes died at his home in Sussex in 1946.

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Fiona Maclachlan

Kidder Peabody & Co. A private Boston banking firm founded by Henry Kidder, Francis Peabody, and Oliver Peabody in 1865. Previously, the firm had been known as Thayer & Co., founded by John Eliot Thayer in 1824. The firm became one of the better-known private banks and investment banks in the country by the 1890s, performing traditional banking and securities related services for corporate clients.

Kidder Peabody also became an adviser and major shareholder in the Santa Fe Railroad and by the turn of the 20th century became allied with J. P. Morgan & Co. Originally the firm was the banker to what would become the AMERICAN TELEPHONE AND TELEGRAPH CO. but had to delegate some of the business to Morgan. That alliance led to Kidder being named one of the members of the "money trust" by the Pujo Committee examining American banking in 1912.

The firm's long alliance with Morgan also led to its rescue in 1930 after the firm failed. After being reorganized, it again assumed a premier position among investment banks with a stronger presence on Wall Street. It continued to be an ally of Morgan and extended its activities into MERGERS and acquisitions and trading as well. After the Glass-Steagall Act was passed, the firm remained on the top of Wall Street's leading investment banks and was continually ranked among the top 10 underwriters until the 1960s. It also continued a strong presence in mergers and acquisitions and developed its investment advisory services, which had begun in the 1920s.

When investment banks began to expand in the 1960s, the firm fell behind. In the mid-1970s, it acquired the old firm of CLARK DODGE & CO., mostly for its investment advisory services, and merged them with its own. For the next 20 years, Kidder remained a medium-size firm slightly outside the top rung of Wall Street firms.

A lack of capital caused the firm to be sold to the GENERAL ELECTRIC CO. in 1985, and the conglomerate maintained control until 1995, when Kidder was sold to Paine Webber. A scandal in the Treasury bond department caused large losses for the firm and its parent, and GE finally divested itself of the investment banking firm rather than pour more money into it. Paine Webber eventually closed the firm after repercussions from the scandal continued to plague Kidder, and its name disappeared from Wall Street, 170 years after the firm was originally started in Boston. Along with DREXEL BURNHAM LAMBERT, it was one of the few major Wall Street houses to disappear in the 1990s.

See also INVESTMENT BANKING.

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K-Mart A department store chain originally founded in 1899 by Sebastien Sperling Kresge (1867–1966), a tinware salesman, as the S. S. Kresge Co. The original stores were known as "five and dime" stores, selling all merchandise for either 5 or 10 cents. Kresge previously was in a partnership with J. G. McCrory, a prominent

retailer at the time, but quickly set out to open his own stores. Within a decade, he had 85 stores grossing more than \$10 million per year, and he incorporated in 1912. In 1918, the company stock was listed on the NEW YORK STOCK EXCHANGE.

The company remained a "variety" store selling inexpensive items throughout its early history. It opened a chain in Canada in the 1920s and remained successful throughout the pre-World War II years because of its low prices and inexpensive product lines. As a result of his success, Kresge founded the Kresge Foundation in 1924. But by the late 1950s, the store chain was being seriously challenged by other retailers, which were becoming more full-service stores and were moving into the suburbs and into newly constructed shopping malls. In 1962, it introduced a new concept store called K-Mart in Garden City, Michigan. The store was a no-frills discounter of a wide array of clothing and other household items and became extremely successful, leading the company to a record \$483 million in sales the first year of operation.

Within four years, more than 160 K-Mart stores were opened in addition to the 753 Kresge stores in operation, and sales topped the \$1 billion mark. In 1976 alone, the company opened 271 K-Mart stores, the largest amount of retail space ever opened. By 1977, 95 percent of the company's sales were generated by K-Mart, and the company officially changed its name. The phenomenal expansion hit its peak in 1981, when the company opened its 2,000th store. By the late 1980s, the Kresge stores had been sold, and the company no longer had any links to its former founder or name. The company had become the second leading retailer in the country behind SEARS, ROEBUCK.

In the 1990s, the company began an acquisitions program, adding more retailers to its operations. It acquired the Sports Authority, Builders Square, Borders bookstores, and OfficeMax before subsequently selling them off. But the expansion and loss of market share to the leading retail chain, Wal-Mart, put the company under severe financial pressure, and it filed for Chapter 11 BANKRUPTCY protection in 2002. After reorganizing, it emerged from bankruptcy a year later with new management. In 2004, it was announced that K-Mart would merge with Sears, the largest retail merger in history—creating a rival to number-one retailer Wal-Mart.

See also CHAIN STORES.

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Kuhn Loeb & Co. Investment banking firm founded by two German immigrants—Abraham Kuhn and Solomon Loeb—in 1867 in New York. The two were merchants from Cincinnati who had already opened a New York City dry goods store before trying their luck at banking. Kuhn returned to Germany, where he offered a job in his bank to Jacob SCHIFF, who arrived in the United States in 1873. From that time, Schiff became the dominant figure at the firm and rivaled only J. P. Morgan as New York's senior banker.

The firm remained small for the first decade after Schiff arrived but found its fortune in restructuring the UNION PACIFIC RAILROAD after Jay GOULD was no longer involved in its operations. Other significant financings included those for the Southern Pacific Railroad, Pennsylvania Railroad, Royal Dutch Petroleum, and Shell Transport & Trading. In most cases, the firm underwrote the companies' bonds and acquired a reputation as a bond financier.

The firm began to expand its number of partners in the late 1890s, adding Paul Warburg and Otto Kahn, among others. Schiff served as an adviser to Theodore Roosevelt and was opposed to the development of the FEDERAL RESERVE when the idea of a new central bank was first discussed in the years before 1910. After World War I began, out, Kuhn Loeb participated in the large war loans of the day for the European allies, although the firm deliberately refused to participate in the largest loan to date, the Anglo-French loan of 1915. Partners of the firm remained sympathetic to the plight of European Jews during the war and were incorrectly labeled pro-German as a result.

Jacob Schiff died in 1920, and Otto Kahn assumed leadership of the firm. The firm's business remained much the same as it had during the days of Schiff: It underwrote mainly bonds and provided financial advice to its corporate clients. MERGERS and acquisitions became one of its specialties and remained as such for decades. It also acquired something of a flamboyant image because of Kahn's affinity for Hollywood and being seen in public, a diametrical shift from the days of Schiff. But the firm could not survive the postwar years without changing. Being a partnership, its capital base remained very small compared to the larger investment banks dominating Wall Street in the 1970s.

Rather than expand or go public, the firm agreed to be bought by LEHMAN BROTHERS in 1977, and its independence came to an end. As a partnership to the end, Kuhn Loeb's reputation was inextricably linked with the personalities of its senior partners, most notably Schiff and Kahn. In the last two decades of its independence, it remained one of the better-known Wall Street merger firms, acting mostly as adviser.

See also investment banking.

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L

laissez-faire A French term meaning "allow to do," it was transformed into an economic theory stating that business should be allowed to operate with as little government interference as possible. In economics, laissez-faire generally has been taken to mean hands off and to be the direct opposite of mercantilism, which suggested strong government interference in the private sector in the 18th and 19th centuries.

Laissez-faire succeeded mercantilism in the 19th century as the economies of the United States and Europe began to industrialize. Its best known exponents were from the British classical school, led by economist Adam Smith, who maintained that humans are most productive when they are motivated by unfettered economic self-interest, free of outside control. Competition flourishes when government influence is minimal, and a full array of goods and services will follow, subject only to the demands of the market.

The doctrine became very popular in the United States, especially during the period of rapid industrialization in the 19th century. Business developed at a much faster pace than government's ability to keep pace with it, and the term became a synonym for a government's generally lax industrial policy. But even during periods when laissez-faire economics appeared to be working, some protectionist government policies still intervened, such as the TARIFFS imposed against imports.

In the late 19th and early 20th centuries, the policies of progressivism began to attack the lenient attitude of government toward business. The administration of William McKinley was the last in which a hands-off policy toward business was evident-until the 1920s when Republicans controlled the White House and Congress. But stronger antitrust policies that began with the administration of Theodore Roosevelt, the founding of the FEDERAL RESERVE, and the regulations passed during the NEW DEAL all signaled a less permissive atmosphere for business than was the case in the 19th century. Similarly, the founding of many government-sponsored enterprises between the 1930s and the 1970s demonstrated that various administrations were not willing to allow certain sectors of the economy such as residential housing, the financing of higher education, and farm financing to be left totally to the private sector.

After the 1930s, the term was used to describe the lack of government interference in the marketplace rather than a specific economic policy. It is still used today to denote a general hands-off attitude of government toward business.

See also ANTITRUST; DEREGULATION.

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Lamont, Thomas W. (1870–1948) *banker* Born in upstate New York, Lamont's father was a Methodist minister. Thomas was sent to private boarding school at Phillips Exeter Academy and graduated from Harvard in 1892. After graduation, he went to New York City and became a newspaperman at the *New York Tribune*, where he rose to become assistant city editor.

Not satisfied with journalism, Lamont invested in a food processing company, but it ran into financial difficulties in 1898. He then reorganized it with his brother-in-law Charles Corliss, and the new firm became known as Lamont, Corliss & Company. As a result of the reorganization, Lamont came to the attention of many New York bankers, one of whom was Henry Davison, who invited him to work for the newly formed Bankers Trust Co. in 1903. In 1909, he moved to a senior post at the First National Bank of New York. After serving as the bank's secretary and treasurer, he was lured away by J. P. Morgan with an offer to become a partner in Morgan's bank in 1911. After becoming Morgan's youngest partner, he remained with the bank for the rest of his career.

After arranging large loans for Britain and France during World War I, Lamont was chosen to represent the U.S. Treasury at the Paris Peace Conference in 1918. He subsequently worked on German war reparations and became a supporter of the League of Nations. In the same year, he also purchased a controlling interest in the *New York Evening Post*. He played a central role in the terms and conditions of the peace negotiations as well as the reparations placed on Germany after the war. He also was sent to Japan as a financial delegate in the 1920s to discuss Japan's role in Manchuria and its role in international financial affairs. The period was notable for financial diplomacy especially, led mainly by J. P. Morgan Jr. and his partners.

Lamont was involved in most of the other major international financial transactions and international diplomatic events of the 1920s, including the Dawes plan, named after Charles DAWES, and the plan to stabilize the French franc. At the time of the stock market crash of 1929, he helped organize a market stabilization plan while at J. P. Morgan & Company, but the plan failed despite the efforts of senior bankers. In 1931, he helped organize the Bank for International Settlements.

Lamont became chairman of J. P. Morgan & Co. after the death of J. P. Morgan Jr. in 1943. The bank went public in 1940, and Lamont became the major shareholder. After 1943, his role in actively managing the bank was limited. During his lifetime, he was a major benefactor to many charities and to Harvard College and Phillips Exeter as well. He is best remembered as a major figure in American banking in the 20th century who provided the Morgan bank with leadership during a time of transition.

See also Morgan, John Pierpont; Morgan, John Pierpont, Jr.

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Land, Edwin H. (1909–1991) physicist, inventor, and manufacturer Born in Bridgeport, Connecticut, Land studied at Harvard, where he became interested in the physics of polarized light. After leaving college without a degree, he developed a polarizing material that was inexpensive and easy to manufacture. From an early age, Land was preoccupied with the idea of polarized light, and he opened a laboratory in his home while still a college student. In 1929, he applied for a patent for a polarizer that resembled a sheet of glass. In 1932, he announced at a Harvard conference that he had developed a complete solution for polarizing light.

Building on this success, he opened the Land-Wheelwright Laboratories in collaboration with George Wheelwright in Boston and began selling his products to the Eastman Kodak Company. In 1937, he and Wheelwright founded the Polaroid Corporation, which began producing polarized products for civilian and military use. When World War II broke out, the company's sales soared as it began selling rifle sights, filters, periscope filters, and goggles to the military. After the war, the company's sales plunged, and Land began seeking new uses for his inventions.

In 1943, he conceived the idea of a camera whose pictures could be developed within 60 seconds. The first Polaroid camera produced sepiatone photographs quickly after being taken. In 1950, black and white pictures were available, and in 1963, the camera was adapted to produce color pictures. As a result, the company became one of the best-known American success stories of the immediate post–World War II period.

The Polaroid camera underwent several generations of development. In the early 1970s, the SX-70 model was able to produce a fully finished, or laminated, photograph within a minute of being taken. Land went on to collect more than 500 patents during his lifetime before retiring from the company in 1980. He was active in the 3-D movie process that was developed to great fanfare in the early 1950s. One of his later ideas, that of instant movies, proved a failure and never



Edwin H. Land (LIBRARY OF CONGRESS)

saw the light of day. During his retirement, he devoted his time to the Rowland Institute of Science, an organization he founded in 1960.

Although Land never graduated from college, he later became a professor at the Massachusetts Institute of Technology and also lectured at Harvard. He was inducted into the National Inventors Hall of Fame in 1977. The Polaroid Corporation became one of Wall Street's favorite stocks in the 1960s and was one of the 50 most popular among investors because of its cutting edge technology. Despite the introduction of new models, the company began to lose market share and fell out of favor on Wall Street. Developments in digital photography put the company under further pressure, and it filed for Chapter 11 bankruptcy protection in 2001.

See also EASTMAN, GEORGE.

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Lazard Freres An INVESTMENT BANKING company founded in New Orleans in 1848 by Alexandre, Lazare, and Simon Lazard, originally as a dry goods store. The three had emigrated from France in that year but a year later were forced to move the business to San Francisco because of a citywide fire in New Orleans. The gold rush had just begun in California, and the business soon began trading gold. Four years later, they opened a branch in Paris, now firmly established in the gold business.

By the end of the Civil War, Lazard was a fullfledged international bank specializing in gold trading. A London branch was also established, and in 1880, a New York office was opened by Alexandre Weill; it became known as Lazard Freres. The New York office was only one of the branches of the bank; it specialized in gold trading and underwriting of some securities issues but remained a small operation until World War II. During the war, Andre Meyer arrived in New York after working in the firm's Paris office. Meyer already had a substantial background in finance, although he was not from an old family, as were the Weills. He took control of the office. After the war Lazard Freres emerged as a specialist in MERGERS and acquisitions as well as maintaining its business in underwriting.

The firm benefited from the postwar merger boom in the United States. Meyer and a younger partner, Felix Rohatyn, aligned themselves with Harold GENEEN at the ITT Corporation, and Lazard became ITT's major merger banker. The firm helped the corporation with many of its major acquisitions as it built itself into a conglomerate and also served other companies. Much of the firm's success in the 1960s and 1970s was built around the relationship with ITT. Meyer died in 1979, and Lazard remained primarily a merger specialist but was also a partnership through the late 1990s, when most other investment banks had gone public.

In the late 1990s, the firm began to suffer a loss of rank and prestige on Wall Street because of its small size and limited capital base. It was reorganized by Bruce Wasserstein, a Wall Street merger specialist who became the senior partner of the firm in 2001. The firm remained private, being the last of the traditional Wall Street private partnerships choosing not to sell shares to the public. It finally went public in 2005.

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Lee, Ivy L. (1877–1934) *public relations expert* Lee is generally considered the father of modern public and corporate relations. Born in Georgia, Lee attended Emory University and graduated from Princeton in 1898. After doing postgraduate work at Harvard Law School he dropped out when his money ran out. He then became a newspaperman at the *New York Times* and the *New York World*, specializing in business and finance while studying English at Columbia, before opening his own public relations firm.

Along with George Parker, he opened the public relations firm of Parker & Lee in 1904. He then worked on assignment from the Democratic National Committee as a publicist and writer. Lee provided the creative side of the business, while Parker provided the connections and clients. Recognizing a market for corporate public relations in the era of the MUCKRAKERS, Lee began providing the public with the business and industry side of business and social issues as a way of countering the attacks of writers in the press and in books. His method was to provide facts rather than advertising, in the hope that newspaper and journal editors would print both sides of a financial or business story. In 1906, he joined the staff of the Pennsylvania Railroad as a full-time executive in charge of the company's public relations, which were not in the best of shape. He continued to work for the railroad until 1914.

In 1915, Lee began working for John D. Rockefeller Sr. after the "Ludlow Massacre" in Colorado. The assignment proved successful, and the Rockefellers, like the Pennsylvania Railroad before them, adopted a new, more straightforward public relations policy than in the past. In 1916, Lee opened a new firm. After World War I, his reorganized firm took on many diverse assignments. He worked during the 1920s for greater acceptance of the Soviet Union, believing that a free flow of ideas and greater international understanding of Russia would lead to the demise of communism. He wrote several books on the Soviet Union and on the use of statistics. Throughout this period, he worked for many of the most visible financiers and the largest companies in the country.

During the early 1930s, his firm worked for several Wall Street investment houses that were being investigated at the Pecora hearings in 1933 about the causes of the stock market crash of 1929. A year later, work he had done on an assignment for a German company controlled by the Nazis led to his being investigated by the House Un-American Activities Committee. He died of a brain tumor in 1934 at age 57.

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Lehman Brothers An INVESTMENT BANKING house founded by Henry Lehman in Montgomery, Alabama, in 1845 as a dry goods merchandiser. Lehman was born in Germany in 1821 and immigrated to Alabama, where he established his general merchandise store. Lehman died in 1854, and the store passed to his two brothers. Emanuel Lehman opened an office in New York City in 1858, trading in cotton. Another brother, Mayer, had close ties with the Confederate government in Richmond, and the company prospered before the Civil War supplying the Confederate Army. They became so prosperous trading commodities that they were able to loan the state of Alabama \$100,000 after the war.

In 1868, the New York City office continued to prosper, but the firm remained primarily a commodities trading firm until the 1890s. It was a member of many of the futures exchanges in New York, including the New York Cotton Exchange and Coffee Exchange. It was also a member of the NEW YORK STOCK EXCHANGE, having joined in 1887. The firm began turning its attention toward investment banking when Philip Lehman entered the firm in 1882. Born and educated in New York City, he became a partner five years later.

In the 1890s, Lehman Brothers began establishing banks in New York, the best-known of which was the Trust Company of America, founded in 1899. After the turn of the century, the firm began a rapid entry into the investment banking business. It underwrote stocks of newly emerging companies in growing industries, notably retailing. Before World War I, it joined with GOLDMAN SACHS in underwriting many new issues, the best known of which was for SEARS, ROEBUCK & CO. in 1906.

The first nonfamily member of the firm was not admitted to a partnership until 1924. Most of the partners were members of the Lehman family. The best-known outside of banking circles was Herbert Lehman, who became a partner in 1908 and retired in 1928. Subsequently he was elected governor of New York and a U.S. senator from New York.

In the first quarter of the century, Lehman underwrote new stock issues for companies such as the Underwood Corp., the Studebaker Corp., and the F. W. Woolworth Corp. After the Glass-Steagall Act was passed in 1933, Lehman Brothers became purely an investment banking firm and remained a partnership in the post–World War II years. From 1928, the firm was run by Robert "Bobbie" Lehman, the son of Philip Lehman, who was responsible for shaping the firm for the remainder of the 20th century.

In the 1970s, Peter G. Peterson became chairman of the firm. He helped reorganize it after several years of poor performance and was succeeded by Lewis Glucksman. In 1977, the firm acquired KUHN LOEB & CO., and in 1984, merger talks were held with Shearson American Express. Lehman Brothers was acquired by Shearson, and the company changed its name to Shearson Lehman American Express, becoming the second-largest securities house on Wall Street. In the mid-1990s, AMERICAN EXPRESS began to restructure itself, and Lehman Brothers was spun off as a public company, assuming its original name. It remains one of Wall Street's best-known and oldest investment banking firms.

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Levittown A suburban town on Long Island, New York, that was the first purpose-built suburb in the United States. The town was built by Levitt & Sons, a family-run firm founded in 1929 that first conceived the idea in 1947. The firm was headed by William J. Levitt, who got into the real estate and building business when he sold a home for his brother. The success of the small transaction encouraged them, and Levitt & Sons was formed.

The firm first attempted a large-scale housing development in Norfolk, Virginia, in 1945, when it built 1,600 small houses. The marketing for the homes was unsuccessful during the war. The company did not make a profit for its efforts, but it did not abandon the concept. William Levitt realized that the millions of returning servicemen discharged after the war would need housing. Using knowledge acquired from other small developments built during the war, the idea of Levittown was born.

After purchasing a 1,000-acre farm located midway between New York City and the Long Island towns where major defense contractors were located, the company proceeded to build more than 17,000 ranch-style homes on the site. Each unit averaged about 750 square feet and had amenities built in that were not often used in mass housing, such as built-in storage units, appliances, and kitchens located in the front of the house rather than the rear. The homes sold for \$7,990 each, considerably less than competitors' homes. But they still made a profit for the company because of the quantity built.

Levittown marketed its homes to whites only and lured city dwellers from Brooklyn and Queens. The community contributed to the urban flight that characterized the 1950s and 1960s and was a major factor in the rapid suburbanization of Long Island. It also indirectly applied pressure on New York banking laws, which until that time prohibited New York City banks from crossing county lines. Many banks lobbied for changes in the laws so that they could follow the exodus.

In 1967, Levitt & Sons was sold for \$92 million to conglomerate ITT, which viewed Levitt's communities as a potential customer for many of its diverse products. The suburban concept was imitated many times around the country as builders adopted the marketing concept of building many units at smaller profit margins than on larger houses. For future generations, the name Levittown became a metaphor for the advantages and disadvantages of suburban living in America and was also the model for hundreds of similar projects around the country that capitalized on the post–World War II demand for new housing.

See also CONGLOMERATES.



Aerial view of Levittown, 1954 (LIBRARY OF CONGRESS)

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Lewis, John L. (1880–1969) *labor leader* Born in Iowa to Welsh immigrant parents, Lewis became a miner while still in his teens. In his late 20s, he began serving in the UNITED MINE WORK-ERS OF AMERICA (UMWA) and became acting president of the union in 1919. Also, in 1911 he became an organizer for the AMERICAN FEDERA-TION OF LABOR (AFL). He was elected president of the UMWA in 1920, holding the job until he retired in 1960. In his 40 years as head of the union, he often clashed with other unions and embarked on long strikes.

His bitterest clash with other unions occurred when he split with the American Federation of Labor and formed the Committee for Industrial Organization, or CIO, in 1935. Unions that joined Lewis were expelled from the AFL, stirring great animosity within the union movement. His new efforts were successful, however, because by the late 1930s the CIO had more members than the



John L. Lewis (LIBRARY OF CONGRESS)

AFL. In 1938, the CIO changed its name to the Congress of Industrial Organizations and began organizing unions in the heavy manufacturing, mass-production industries.

Originally a Republican, Lewis became a supporter of Franklin Roosevelt and endorsed him in 1932 and 1936. Lewis decided to support Wendell Willkie for president in 1940 and threatened to resign from the CIO if the president stood again and won reelection. Lewis then made good on his promise and resigned as president of the CIO after Roosevelt won the election; two years later the UMWA withdrew from the CIO.

During World War II, the public became increasingly disillusioned with the miners because of many strikes called during wartime. Most were successful, however, in winning increased wages. In 1946, immediately after the war, the UMWA again joined the CIO but broke away the following year. Congress responded to the uneasy labor situation by passing the TAFT-HARTLEY ACT in 1947.

A coal strike in 1948 during the Truman administration led to a crisis in industrial relations and finally led to a moderation in Lewis's tactics. Lewis also helped create the UMWA Welfare and Retirement Fund in conjunction with the federal government, and it was signed into law during the Truman administration. The fund provided health care to coal workers. He retired from the union in 1960, administering the fund until his death in 1969.

See also GOMPERS, SAMUEL; MEANY, GEORGE.

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Livingston, Robert R. (1746–1813) *diplomat* Robert Livingston was born in New York City on November 27, 1746, the scion of an influential colonial family with roots dating to the 17th century. Raised in an aristocratic environment, Livingston was well educated privately and graduated from Kings College (now Columbia University) in 1765. He was admitted to the bar three years later and commenced a lucrative business in concert with his partner, John Jay. At that time, the first rumblings of revolution were manifested against such British policies as the Stamp Act. Livingston urged caution, but once hostilities finally commenced in 1775 he reluctantly endorsed independence as a necessary evil. That year, Livingston attended the Second Continental Congress as a New York delegate, where he was appointed to serve with the committee drafting the Declaration of Independence. Returning to New York, he subsequently took an active role in drafting the New York constitution of 1777 and was rewarded with an appointment as chancellor of the Court of Chancellory. Livingston resumed his seat in Congress two years later, and after independence he functioned as secretary for foreign affairs. In 1788 he attended the constitutional convention in Philadelphia as a delegate, and the following year Livingston administered the oath of office to the new president, George Washington, in the temporary capital of New York City.

Though conservative by nature and nominally a Federalist, Livingston felt increasingly at odds with the faction headed by Alexander HAMILTON and its promotion of the Jay Treaty, which he felt sold out to Great Britain. In concert with Thomas Jefferson's newly emerging Democratic Republican Party, Livingston was strongly disposed to support the French Revolution. This made him a pariah in conservative circles, but in 1801 the new president, Jefferson, appointed him minister to France. It was in this capacity that Livingston made indelible contributions to the United States by successfully negotiating the purchase of the Louisiana Territory from First Consul Napoleon Bonaparte in 1803. This virtually doubled the size of the young republic and, by dint of acquiring New Orleans, facilitated internal trade via the Mississippi River. It proved one of the greatest diplomatic coups in history and a crucial step in the economic viability of the young nation. Livingston remained in Paris two more years before returning home to his estate at Clermont, New York, to engage in scientific farming. He was especially interested in the breeding of Merino sheep and penned several noted tracts on that subject and on agricultural progress in general.

Livingston's reputation as a leading economic figure in American history dates to 1797, when he became actively involved in steam navigation. The nascent technology seemed promising but had proved untenable after many failed experiments at building a viable steamship. It was not until 1802 that he agreed to underwrite noted inventor Robert FULTON in a similar endeavor. Many years of trial and error lapsed before the steamship Clermont finally made its historic passage up the Hudson River in 1807. This voyage ushered in the age of steam navigation in America, along with the rise of monopolies to control its employment. Livingston never obtained the national celebrity of Fulton, but his extensive backing proved instrumental to their mutual success. He then used his political leverage to acquire a monopoly for shipping on both the Hudson and Mississippi Rivers. But despite the promise of profit, the limitations of the new steam technology remained legion and failed to produce the windfall anticipated, although the practice of states granting steamship monopolies was vanquished by the U.S. Supreme Court in 1824. By the time Livingston died at his estate at Clermont on February 26, 1813, his varied, farranging, and multifaceted career in politics, diplomacy, and science had proved of considerable importance to the young republic. He also provided an undeniable impetus to the commercial applications of steam technology, which successfully matured a few decades after his passing.

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John C. Fredriksen

Long-Term Capital Management A giant hedge fund in Greenwich, Connecticut, the nearcollapse of which in September 1998 shook Wall Street and drew public attention to the role of hedge funds in the marketplace. The fund was established in 1994 by John W. Meriwether, a bond trader at SALOMON BROTHERS who had hired a team of mathematicians and economists from academia to give his unit an edge in the fierce competition for arbitrage opportunities.

When Meriwether left Salomon Brothers in 1994 after a trader he supervised was caught manipulating bids on TREASURY BONDS, most of his intensely loyal traders followed him to Long-Term Capital. He also recruited, as partners, Robert C. Merton and Myron S. Scholes, who later were awarded the 1997 Nobel Memorial Prize in economic science, and David W. Mullins, a former vice chairman of the Federal Reserve Board. As a group, the fund's partners believed passionately in rational, efficient markets, and their trading strategies reflected those beliefs.

The celebrity-studded fund, whose investors included top banks and institutions from around the world, was enormously successful at first. Trading largely with borrowed money, the fund produced returns, net of its own fees, of 43 percent in 1995 and 41 percent in 1996. But in 1997, as arbitrage opportunities faded and Asian currency devaluations roiled markets, it earned just 17 percent after its own fees. As that year ended, the fund's still-optimistic partners decided to return roughly \$2.3 billion to their outside investors, paring the fund's capital to about \$4.7 billion, from roughly \$7 billion at its peak.

It was an ill-timed decision. The fund's core strategy was to bet that volatile security prices in markets around the world would gradually become more stable. But in 1998 global markets grew ever more treacherous. By August, when Russia defaulted on its debt, risk-averse investors were buying only the most liquid Treasury bonds, driving down the prices of virtually everything else. Meriwether's capital, which totaled \$3.7 billion at mid-August, was simply melting away. By mid-September, the fund was on the brink of collapse. Since it owed money to almost every major bank on Wall Street, its dire condition drew the attention of the Federal Reserve Bank, which feared that the fund's failure would trigger a marketwide panic. On September 23, 1998, after long negotiating sessions at the Federal Reserve Bank of New York, a consortium of 14 American and European investment firms agreed to inject \$3.6 billion into the fund, in exchange for most of the partners' equity. By that point, every dollar invested in the fund had shrunk to 23 cents, net of fees.

The rescue, which drew widespread public criticism, kept the fund afloat for another year, but its returns were meager. The stock and bond markets became very unsettled during the months following the collapse, and GOLDMAN SACHS, one of the fund's trading partners, had to postpone its initial public offering as a result. By early 2000, the consortium had retrieved its capital, and the fund was essentially liquidated. By then, Meriwether and many of his partners were once again managing other people's money from their offices in Greenwich.

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Lorillard & Company, P[ierre]. One of the first American tobacco producers, the company was founded by Pierre Lorillard (1742–76). Born in France, Lorillard immigrated to the United States and established an operation for curing tobacco on Chatham Street in New York City in 1760. Tobacco had been an important and sought-after crop since the time of Columbus and attracted many Europeans because of its popularity. Lorillard sold pipe tobacco and snuff from the New York location and soon prospered because Americans were fond of his various tobacco blends, all using Virginia tobacco as their base.

After his untimely death during the Revolutionary War, the business was carried on by his sons Peter and George. They soon began to advertise their product in New York newspapers, featuring an Indian smoking a pipe. The ads became the basis for the cigar store Indian that would later stand outside many tobacconist shops around the country. In 1792, the manufacturing operation was moved from lower Manhattan to the Bronx, and mail-order sales were begun in the early 1830s. Lorillard diversified its tobacco products and included chewing in addition to smoking tobacco. The Beech-Nut brand of chewing tobacco in particular became extremely popular, and its advertising was found on many barns and stores around rural America. The name Lorillard was one of the first to become identified with the powers of marketing.

The Lorillards also employed incentives for consumers to use their products, including mailin coupons for clothing and household items. They also began producing cigarettes in addition to pipe tobacco. In the early 1900s, the company became part of the "tobacco trust," better known as the AMERICAN TOBACCO CO. headed by James B. DUKE. After the breakup of the company ordered by the Supreme Court in 1911—one of the classic ANTITRUST cases—the company reverted to being an independent as P. Lorillard & Co.

The Lorillard family became well known as socialites and developers of real estate. Pierre

Lorillard IV helped develop Newport, Rhode Island, into a resort for the rich and also helped turn his estate outside New York into Tuxedo Park, a sporting and residential club catering to the wealthy.

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lotteries Games of chance in which individuals are sold tickets, giving them the opportunity to win a drawing of cash or some other prize. Lotteries originated in Italy in the 16th century and spread to England and other parts of Europe. A lottery affecting America was conducted as early as 1612 in London for the benefit of the Jamestown settlement in Virginia. During the colonial period, lotteries became the first organized method of raising money for such public purposes as the colonial army.

Before the banking system developed on a regional level, lotteries proved to be the only effective way of raising large sums of money for varied causes. They also proved useful when borrowing by institutions was not considered ethical or practical in many parts of the country. As a result, selling lottery tickets to large numbers of people was the predecessor to INVESTMENT BANK-ING on the East Coast.

The popularity of lotteries quickly spread in the 18th century. They were established to raise money for a host of public and private projects before independence and multiplied after the Constitution was ratified. After independence, colleges such as Harvard, Yale, and Princeton used them to raise funds. Proceeds were also used to build canals, TURNPIKES, and such public works projects as the Washington Monument. Some of the early lottery agents, such as Simon and Moses Allen of New York State, used the lottery ticket sales business to eventually enter the banking business.

Lotteries proliferated after the Civil War as many southern states sought to raise funds during Reconstruction. The best known was the Louisiana State Lottery, begun in 1868. It soon expanded to selling its tickets nationwide. It also developed a reputation as being somewhat corrupt and drew many attacks from the press and the public. Many other lotteries prospered at the same time, but many eventually were shut down because of public protests about state governments supporting gambling. In 1899, Congress passed a law prohibiting the use of the public mail for distributing lottery tickets, putting an end to Louisiana selling its tickets nationwide. The lottery continued to distribute tickets privately, using courier services, until Congress passed prohibitions against this as well. An appeal was launched, and the case reached the Supreme Court. In 1903, the Court upheld the law in the case Champion v. Ames.

In the 1960s and 1970s, lotteries were instituted in New Hampshire, New York, and New Jersey and quickly became popular in many states. Originally used to raise money when capital markets were not developed, lotteries later became an additional source of raising funds for state government projects that did not rely upon public sector borrowing.

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lumber industry From the time of the first European settlements in the early 1600s, the lumber industry has been vital to the growth of

the nation. Lumbering requires three basic components for sustained, long-term success: the availability of woodlands, the development of a market for forest products, and a means by which timber can be efficiently harvested and marketed. Through the 1930s, the history of the American lumber industry was largely one of lumbermen harvesting all the desirable timber in an area and then quickly moving on to the next area—all the while trying to keep costs to a minimum. This usually meant clear-cutting the land, moving lumber to market quickly and cheaply, and then selling or abandoning the land.

The ever-growing demand for more wood pushed lumbermen to continually improve harvesting and delivery methods. The technological improvements in saws and transportation developed to increase the output of the woods, in turn guaranteed a continual search for new timber supplies. Until the late 1800s, the ready availability of more woodland led many to believe the timber supply to be unlimited. But in the 1910s and 1920s, dwindling timber stocks and excessive production caused lumbermen to reassess how they did business, leading in some instances to cooperative efforts between private industry and government. With its tentative embrace of sustained-yield management and regeneration by the 1940s, the lumber industry signaled its willingness to adapt in order to assure future timber supplies.

The Northeast, comprised of New England plus New York, Pennsylvania, New Jersey, Maryland, and Delaware, was the center of America's early lumber industry. Lumbermen had to meet not only domestic demands, but also early industrial needs. Iron furnaces, which required huge quantities of wood charcoal to smelt ore, on average consumed 20,000 acres of forest over about a dozen years. Furnace operators found themselves competing with urban households for fuel wood. Besides wood for home construction, furnishings, and tools, it took between 10 and 20 acres of forest to supply the fuel burned by one home fireplace annually. By the 1780s, competition between iron furnaces and home consumption in urban areas had drawn farmers into the lumber supply trade. Farmers clearing land up to 100 miles away could profitably deliver lumber to urban markets, despite the expense and difficulties of transporting to market.

Regional and overseas trade developed soon after settlement. The first supply of New England white pine, used mostly for masts, reached England in 1634, and trade was well established within 20 years. Blessed with vast stands of highly coveted white pine, and good rivers and ports, Maine became the leading lumber producer in the years following the American Revolution. It sent white pine to Boston and other eastern port cities and competed directly with Canada's New Brunswick in exporting to the British colonies in the Caribbean. The fierce competition led to a brief armed standoff in 1839 between New Brunswick and Maine lumbermen in what became known as the Aroostook War. War was narrowly avoided, but the dispute has colored lumber trade relations with Canada, historically the largest exporter of lumber to the United States, ever since.

By 1820, though Maine outpaced all others in lumber production, its days as leader were already numbered. As settlers moved into western New York and Ohio, they turned to cheaper local supplies instead of importing lumber from back east. New York eclipsed Maine as the leading lumber producer by 1839, and Pennsylvania soon replaced New York as the lumber industry followed settlers westward. The Northeast led the nation in lumber production until 1879, when the lake states region overtook them.

As the lumber industry migrated west from the Northeast toward the Great Lakes in the mid-1800s, lumbermen also harvested timber in the central states along the way. The central states (Illinois, Indiana, Ohio, West Virginia, and Missouri) did not experience the spectacular rise and subsequent decline of production of the Northeast or the lake states because they lacked the large volume of valued softwood timber in those regions. From the mid-1800s until 1916, when the South surpassed it, the central states were the most productive hardwood region in the country (often around 90 percent of the region's production was in hardwoods).

Though the region contributed a small portion to the total lumber production for the nation, the central states have always been important to the transport and distribution of lumber. The upper Mississippi River and the Illinois-Michigan Canal, completed in 1847, provided the "highways" to move the rafts of logs and lumber and transformed the small town of Chicago into a booming trade town. The canal allowed Chicago wholesalers to sell Michigan and Canadian lumber to buyers in the prairie region for 50 percent less than eastern lumber. By 1856, Chicago had replaced Albany, New York, as the nation's leading wholesale lumber market.

As settlers pushed out onto the Great Plains, demand for wood tied the economies of the lake states and prairie regions together. The lake states region, consisting of Michigan, Wisconsin, and Minnesota, also possessed white pine and, like New England, had an extensive waterway network by which to move timber. But the era of large-scale lumbering in the region was relatively brief. As the harvesting of the lake states forests accelerated, production hit its peak years in the 1870s and 1880s. Between 1869 and 1889, lumber production jumped from 3.6 billion board feet (one board foot is equal to one foot square by one inch thick) to nearly 10 billion board feet before starting to decline. It bottomed out in 1932 at 289 million board feet. It has since recovered, and in 2002, the three states produced nearly 1.6 billion board feet, or 3 percent of the national total.

It was in the lake states region that the buying and selling of land became integral to the lumber business. Starting in the 1860s, Frederick WEYER-HAEUSER, Orrin H. Ingram, and other lumbermen made their fortunes by buying up forests, cutting the timber, and supplying it to the prairie farmers. Then they would sell the cutover land to newly arriving farmers before having to pay taxes on it. Lumbermen then moved on to the largely untouched forests of the South and the Pacific Northwest. In some cases, an entire companyowned logging camp—buildings and all—would be placed on railroad cars and moved to the next location.

Before large-scale lumbering got underway in the South in the 1870s and 1880s, the southern lumber industry mostly consisted of supplying live oak trees for shipbuilding and the production of naval stores. In fact, from the 1830s until the outbreak of the Civil War, naval stores (masts, turpentine, pitch tar, resin) had become almost as big as the COTTON INDUSTRY. In areas too poor for cotton farming, settlers often worked in the lumber and naval stores industries.

But the depletion of white pine stands in the Northeast and lake states led northern lumbermen



Repair work on an enormous cut-off saw at a lumber mill (FOREST HISTORICAL SOCIETY)

to embrace southern yellow pine. Between 1890 and 1920, lumber production in the South rose from 1.6 billion board feet in 1880 to 15.4 billion board feet in 1920, peaking in 1912. The South was producing 37 percent of all the lumber of the United States during that time, and output continued to rise over the remainder of the century. In 2002, the region produced 21.58 billion board feet, or 46 percent of the nation's total output.

Federal laws such as the Weeks Act (1911) and the Clark-McNary Act (1924), which encouraged fire protection and scientific forest management on state and private lands, helped lay the foundation for the revitalization of the southern lumber industry. The development of a pulp industry based on southern pines during the 1930s provided the monetary incentive for private landowners and the timber industry to undertake forest management. The influx of wood-based industries to the region and the increasing value for pines led many lumbermen to embrace forest renewal and management practices on a widespread basis. Pine plantations for pulp production became big business and brought much-desired industry to the region by 1940. The dominant source of pulpwood since the 1940s, the South increased its share of production to more than three-quarters of the country's pulpwood in 1993. Within 40 years of implementing the Weeks Act, the amount of annual growth in the southern forest outpaced timber removal, though it should be noted that abandoned farmland reverting to forestland contributed to some of this recovery. Southern forests were not only recovering but also providing a model for reforestation efforts around the country.

In the 1880s, the lumber industry turned its attention not only to the South, but also to the Rocky Mountains and the Pacific coast states of Washington, Oregon, and California. Because of the arid land and difficult terrain, the lumber industry largely by-passed the Rocky Mountain states of Idaho, Montana, Wyoming, Utah, Nevada, Colorado, Arizona, and New Mexico as it moved to the more productive forests of the Northwest. Production in the Rockies peaked in 1925, dropped during the Great Depression (as it did nationally), and rose again in the postwar construction boom. The lumber industry remains an important industry in Montana and Idaho, which together produced 6 percent of the nation's lumber in 2002.

When the continental railroads reached the West Coast in 1869, the land rush began on the Pacific coast. With the high cost of shipping timber back east by rail, it was initially more economical to sell the wood to regional markets or ship it overseas to South America and Asia. But once the Great Northern Railroad sharply slashed its freight rates in 1893, it became affordable to ship lumber back east. When production in the lake states region began to decline sharply soon thereafter, shipping lumber over 1,000 miles by rail finally became profitable for northwestern lumbermen. Although timber production rapidly increased, not until 1900 did a western state appear among the top 10 producers. By 1910, Washington and Oregon ranked first and third respectively among all states in production. Since 1940, Oregon, Washington, and California have consistently been among the top three producers. In 2002, they combined to produce 30 percent of all U.S. lumber.

Casting an eye toward the future, even before lumber production had started declining in the lake states, Frederick Weyerhaeuser and other lumbermen began buying forestland in the Pacific Northwest region. At one point his company held 1.9 million acres of land in the Northwest. The creation of federal forest reserves in the 1890s and early 1900s reduced available acreage and drove up prices, eventually leaving timber ownership concentrated in the hands of a few large companies.

With the continuing availability of more land until the 1920s and 1930s, it made little economic sense for lumber companies to hold cutover land and pay taxes on land of no value to them. Instead, companies either sold the land to settlers or let the government take it back instead of paying delinquent taxes. The 1920s, with no new lands to purchase, marked the end of the frontier phase of lumbering. Lumber companies began investigating and even undertaking sustainedyield management (regulating the annual amount of timber cut so it corresponded to the amount grown annually) and selective cutting of timber as a way to regenerate forests by the early 1930s. Even though tax laws made it more costly to replant than to buy mature timberlands, the Weyerhaeuser Timber Company adopted policies of selective cutting and sustained yield and created one of the first industrial tree farms in 1941.

By regenerating the forest, major lumber companies cleared the way for a younger and more vigorous forest with an annual growth rate that would far exceed that of the original forest. In contrast, small local firms and independent lumbermen in the region hastily cut their timber to make a quick profit. The resulting overproduction drove down prices and forced many of these lumber companies out of business by the late 1920s. With most of the easily accessible timber harvested, only large timber companies could afford the machinery to open up and develop the interior regions.

The enormous size of the logs initially presented problems for sawmill operators in the Pacific Northwest. Consequently, many of the innovations in the lumber industry came out of that region. Steam-driven circular saws brought west from the Great Lakes and the South enabled the lumberjacks to cut more timber and at faster speeds, but they could not easily handle the mammoth logs. The introduction in the 1870s of double and even triple saws replaced circular saws, which could not cut more than half their diameter. A decade later the band saw replaced these earlier saws; its one continuous loop of blade could cut through an entire log.

Saw blade technology had to adapt because of technological advances in the woods. A pioneer working by himself and using a single-bitted axe could expect to clear 12 acres a year. Lumberjacks started using the long-handled, double-bitted axe widely after 1878. They combined that with the crosscut saw in the 1880s, dropping by nearly four-fifths the time it took to cut down a tree. The introduction of the gasoline-powered chainsaw in 1947 further sped up the process, and that was supplemented by machines such as fellers and harvesters that can clear several truckloads of timber per day.

To move logs to the mills, lumbermen began replacing oxen with the steam donkey engine in the mid-1880s. The engine used steel cables to drag, or skid, fallen timber and allowed lumbermen to remove larger logs at a faster rate. As technology permitted, ever-larger machines replaced those engines. The massive and complex water flume systems constructed to send lumber down water slides from upper elevations to the mills below were first replaced by RAIL-ROADS and then, after the 1920s, by logging trucks. Truck logging had its greatest impact in Oregon because it opened up areas in the Cascade Mountains that could not economically be tapped by railroad logging. Areas untouched before World War II became accessible and economically feasible after the war because of warsurplus trucks. The use of trucks allowed most sawmills to remain at permanent sites, further lowering costs, and largely helped bring to an end the migratory nature of lumbering.

During the Great Depression, the bottom fell out of the national lumber market. Overproduction drove prices down and touched off a cycle of declining output and prices. William Greeley, David T. Mason, and George S. Long, all of whom had been instrumental in introducing scientific forest management in the Pacific Northwest, pushed for greater cooperation between private industry and the government in an attempt to equalize production and consumption. Concerned about the continual economic problem faced by lumber communities, Mason, a private forester and former U.S. Forest Service employee, argued that private companies should be able to combine public timberlands with adjacent private holdings to develop better management plans. Doing so would stabilize supply and demand. Mason's new definition of sustained yield became the cornerstone of the Sustained-Yield Forest Management Act (1944) and assisted several lumber towns in the West. The stability this provided made labor union organizing easier during the immediate and prosperous postwar period; later, mechanization and automation of all aspects of the production process, along with industry consolidation, brought worker layoffs and weakened the unions.

Under pressure from lumber companies and politicians not to impede economic prosperity after the war, the U.S. Forest Service continually raised the harvest limit in national forests over the next three decades. In the 1970s, the Forest Service argued that advancements in areas such as logging machinery and regeneration would allow it to intensively manage certain parts of a forest and produce higher amounts of timber through clear-cutting, while leaving other parts of the forest for recreational use. Continued controversy over clear-cutting led the federal government in the late 1980s and early 1990s to remove large areas of federally owned land in the West (the Rocky Mountain and Pacific coast states combined) from harvest. Many western mills dependent on federal timber were forced to reduce production dramatically or to close. The proportion of lumber produced from the West slowly fell to just under half by 1999 as a result of declining levels of timber from public lands and increasing levels of production in the South.

In 1990, the South became the nation's largest lumber producing region, accounting for 36 percent of all softwood lumber and 78 percent of all hardwoods. Of the region's 215 million forest acres, 89 percent is privately owned, which in part gives private industry the ability to increase lumber production. Total lumber production in the North (the northeast, central, and lake states combined) remained fairly steady from 1965 through the early 1990s but more than doubled to 10.2 billion board feet by 1999, nearly all of it in hardwood lumber production. This was largely the result of better forestry practices and more intensive use of remaining timber.

The drop in domestic production did not mean a reduction in consumption. The United States remains not only the largest producer but also the largest consumer of lumber in the world. To meet demand, lumber imports to the United States from all countries totaled 19.9 billion board feet in 1999 (93 percent of it from Canada), an all-time high. New nonresidential construction accounted for about 7 percent of lumber consumption, manufacturing for 12 percent, shipping (pallets, containers, and packing materials) for 10 percent, and 11 percent for all other uses. Overall, about 60 percent of lumber consumed in 1999 was used in housing construction.

The manufacturing of lumber and wood products has fallen from the fourth-ranked overall industry in 1900 in terms of dollar value to a ranking of 13th, within just the manufacturing sector, in 2000. The forest products industry employs approximately 1.7 million people in forest and paper production, or 1.1 percent of the U.S. workforce. Although lumber is no longer the dominant industry it once was, the lumber industry remains one of the nation's most vital and important industries, due in large part to the industry's willingness to adapt to changing economic and environmental conditions.

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Jamie Lewis

M

Macy, Rowland H. (1822–1877) *businessman and retailer* Born in Nantucket, Massachusetts, to a seafaring family, Macy made several attempts to open a dry goods store but failed on each of them. After failures in Massachusetts, he went to California during the gold rush and opened a successful operation. He eventually returned to Massachusetts with a small nest egg of \$3,000, opened another operation in Boston, but again failed to make it successful.

Leaving Massachusetts, he made his way to New York City and opened a dry goods store on Sixth Avenue near 14th Street in 1857. His firstday sales amounted to \$12, and his store quickly became a success. Two years later, he spent \$2,800 on advertising and generated more than \$85,000 in yearly sales in its first full year. He used a simple formula of spending more on advertising than his competitors while also using cash for both buying and selling rather than using credit. Capitalizing on his success, Macy's store became one of the best known in New York City by expanding its offerings from simple dry goods to a full range of consumer products.

After the Civil War, Macy continued to introduce marketing devices designed to attract and keep customers. In 1870, he employed the first in-store Santa Claus, designed to attract families at Christmas. Continued success led to the opening of the flagship store at Herald Square in New York in 1902. By the turn of the century, it was a full-fledged department store. The store expanded beyond dry goods and now carried a wide array of consumer products under one roof.

Macy did not live to witness the success or expansion of his stores. He died in Paris at age 55, and the store was taken over by Charles B. Webster. Webster invited the Strauss retailing family to purchase part of the store 10 years later, and by the 1890s, when Webster sold them his remaining share, they gained control of Macy's.

One of Macy's buyers, William Titon, invented the first tea bag in 1912. By 1924, during the heyday of department and CHAIN STORES, the Herald Square store was the world's largest department store and held its first Thanksgiving Day Parade, a tradition that continues today. But unlike other retailers, Macys did not participate in the expansion boom of the 1920s. The store began to expand to suburban shopping malls only after World War II, when it became a chain.



Rowland H. Macy (LIBRARY OF CONGRESS)

After a series of acquisitions and management problems, it filed for Chapter 11 bankruptcy protection in 1992. It was acquired by Federated Department Stores after emerging from its reorganization in 1994 and, in the name of greater efficiency, began to shed some stores it had opened or acquired.

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Malcolm Baldrige National Quality Award

Named after former secretary of commerce Malcolm Baldrige, the award is actually four awards given annually to American companies to recognize their achievements. The fields in which the awards are given are manufacturing, service, small business, and education and health care. The awards were established by Congress in 1987 to recognize American businesses. They were initiated to emphasize quality, which Baldrige felt was essential for American companies if they were to maintain their edge and fight off foreign competition. In the 1970s and 1980s, American companies developed a reputation for poor quality and shoddy products, and the awards were a method of emphasizing quality in a more global business environment.

Each company winning an award must meet specific criteria for excellence, including leadership, customer and market focus, strategic planning, process management, business results, and information and analysis. Companies winning awards since 1987 were Dana Corp., AT&T Consumer Communications Services, Cadillac Motor Division, Xerox Corp., Ames Rubber Corp., IBM, and the Ritz Carlton Hotel Co., among others. The IBM Corporation used the award to challenge itself to turn around the company in the late 1980s, once again becoming known for producing quality products.

Malcolm Baldrige (1922–87) was secretary of commerce under Ronald Reagan from 1981 until his accidental death in 1987. Before entering government service, he was chief executive officer of Scovill, Inc., formerly a brass mill that he transformed into a diversified manufacturer of consumer and industrial goods. The award was named after him posthumously in recognition of his championship of quality in both manufacturing and the service industries.

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managerial capitalism When professional managers run companies; characteristic of the period of American business development when

family members yielded control of their companies to professionals. The term helps distinguish the early period of American business, leading to the Civil War, with the period that followed, when businesses began to be run by professional managers trained in various specialty disciplines.

This period coincides with the widespread emergence of stock companies, when many companies sold stock for the first time in order to expand. In the 1840s and 1850s, manufacturing and RAILROADS (especially railroads) began to grow exponentially, requiring managers with more than one set of skills. After the Civil War, as the railroads continued to expand westward, the need for professional managers became more pronounced as the organizations grew larger and more complex. Quite often, business organizations would still be run by family members, although they were increasingly staffed by professional managers, hired from the outside.

After the turn of the 20th century, as the need for managers became more recognized, many business school programs were instituted to provide graduate, and later undergraduate, training for this new managerial class. The Harvard Graduate School of Business was the first graduate program in the country instituted for this purpose.

In the 20th century, the trend became more clear as fewer and fewer companies remained in family or founders' hands. The rise of the modern CORPORATION after World War I was an excellent example. The size and complexity of DuPont and GENERAL MOTORS, the latter headed by Alfred SLOAN, showed that the 20th-century corporation had become too large to be ruled from the top and now required skilled and trained managers at various stages and levels of organization.

The success of larger business enterprises managed by professionally trained managers became the cornerstone of American business in the 20th century. In many cases, this success can be seen in the MERGERS and acquisitions trend that characterized several decades of the 20th century and the rise of the conglomerate organization in the 1950s and 1960s. In addition, many business disciplines created "managerial" tracks in the post–World War II years, and such disciplines as managerial accounting, finance, economics, and information sciences now exist and are designed to train potential managers in decision making and cooperative planning.

See also DUPONT DE NEMOURS & CO., E. I.; HARVARD BUSINESS SCHOOL; TAYLOR, FREDERICK WINSLOW.

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mass production The process of producing a large amount of manufactured goods by standardizing parts and production techniques. By doing so, the producer is able to lower the cost of production and therefore lower the cost of the product to the consumer.

The method began with the manufacture of muskets for the U.S. Army around 1800. Inventor Eli Whitney had contracted with the government to produce muskets but was unable to meet his production schedule because the parts he used were not standard. He demonstrated to the army that if he were able to employ machine tool techniques, he would be able to produce a standard, efficient musket rather than the handmade variety, which had been the only method used until that time. When he began producing muskets with standard parts, the process was born. Workers were often taught only one part of a system so that they could produce their own specialized part of the process quickly and efficiently.

When standard parts and mass production began to be used widely, the factory system came into general use. Factories had been used previously to produce textiles, and the principles were the same, although the process was more simple and produced only a simple good. Even relatively simply manufactures would become mass produced after the Civil War. Items of clothing, such as shoes, were mass produced in the first two decades after the war ended, leaving hand production to be more of a higher priced specialty art that defined its products as those of artisans rather than factory workers.

I. M. Singer began employing these techniques to produce sewing machines in the 19th century. In 1865, his company produced about 3,000 machines per year, but within 10 years production multiplied to more than 250,000. But mass production is generally considered to have begun with automobile manufacturing in the 20th century. Mass production was successfully employed by Henry FORD in Detroit. Ford employed the assembly, or production, line when producing his Model T automobiles, and the number of cars produced multiplied exponentially between 1915 and 1925. Unlike other assembly lines, Ford's moved, meaning that workers could remain stationary while the cars passed before them for finishing. As the number increased, the price began to decline, producing economies of scale for Ford and other manufacturers. It was the introduction of the assembly line that brought the idea of mass production into the modern industrial age. Ford's methods relied upon simple styling and models, which did not change every year, allowing the process to proceed without interruption. Ford remarked that his customers could have their choice of color as long as they liked black. It was the only color he produced. The Model T was succeeded by the Model A, whose price also fell as a continuing result of mass production.

In 1918, the American National Standards Institute was founded in order to set standards for manufacturing and to study methods of production around the country. Both world wars also helped the process develop further, since standard grades were needed for military armaments. In the post–World War II period, many new products became standardized, and separate industries developed widely accepted methods of producing their goods. More recently, the assembly line has been using robotic machines rather than people in an effort to reduce error in the process and speed production.

See also WHITNEY, ELI.

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McCormick, Cyrus (1809–1884) *inventor and businessman* McCormick produced the first successful mechanical reaper, which revolutionized agriculture in the 19th century. He was born on the family farm in Virginia and tinkered with mechanical reaping devices from an early age, learning from his father, who was an inventor of farm equipment. He produced his first in 1831 and received a patent for it in 1834 after discovering that a similar device had been invented by Obed Hussey. He later purchased an iron works with his father, but they lost substantial amounts of money during the Panic of 1837. The reaper developed slowly as a result.

The mechanical development of the device and its sales were initially slow. McCormick sold only two of his machines in their first year of production (1840) and in 1843 sold 29. But after a trip to the Midwest, McCormick realized that his device was more suited to the wide plains of the breadbasket states than it was to the rougher, hilly terrain of Virginia, even though he had invented a machine that could be used on sloped ground. By 1848, he had relocated his business to Chicago and started producing improved reapers. His factory was one of the first examples of assembly line production, and it came into existence as his patent for the machine was running out. By 1856, the factory produced more than 16,000 reapers and related devices, and his invention was considered the best on the market.

McCormick also employed advertising to sell his product. He purchased a newspaper called the Farmer's Advance in which he extolled the virtues of his machine. The paper had a circulation of more than 300,000. His machines sold for \$120 each and came with one of the first money-back guarantees. By the time the Civil War ended, his machine was the most popular in the country and had made him a rich man. By 1880, profits exceeded \$1.2 million a year. He also tried his hand at politics and ran unsuccessfully for Congress in 1864. But McCormick's invention had a profound effect upon the economy in the post-Civil War period. Before the reaper, farming was much more labor intensive, requiring many more men to harvest wheat and other grains. His invention helped free labor from dull agricultural work at a time when labor itself was in short supply, especially during and after the carnage of the war.

Before the Civil War, McCormick was a strong defender of SLAVERY, although he opposed secession. He used some of his wealth to purchase the *Chicago Tribune* so that he could make his views known, but they proved extremely unpopular in the city. After his death, his company was run by his son, Cyrus H. McCormick Jr. In 1902, the company merged with a major competitor, the Deering Co., to form the INTERNATIONAL HAR-VESTER COMPANY. The banker to the consolidation was J. P. Morgan & Company. The new company continued to be run by McCormick, who owned almost 50 percent of the stock.

See also DEERE, JOHN.

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McCulloch v. Maryland A landmark ruling by the Supreme Court of the United States that established lines of demarcation between the power of the states and that of the federal government. The case involved a suit brought against a branch of the BANK OF THE UNITED STATES, located in Baltimore. Two issues were at stake. First was the matter of Congress's ability to incorporate this second national bank, while the other involved the right of a state to tax an instrument of the federal government.

The Second Bank of the United States was chartered in 1816. In 1818, Maryland passed a tax on all banks operating in the state that were not chartered by the state legislature. James McCulloch, its chief cashier, refused to pay the tax, and the case went to the courts, where Maryland won; the bank appealed to the U.S. Supreme Court. Chief Justice John Marshall, delivering the unanimous decision of the Court, overturned the ruling of the lower court and ruled in the bank's favor. The bank was a legitimate instrument of the United States and therefore had a right to exist, despite strong attacks by advocates of states' rights. Following upon the bank's legitimacy, the Court also ruled that Maryland's right to tax was subordinate to the Constitution. which gives the federal government precedence over the laws of states. As a result, the state could not tax an instrument of the United States because it had no authority over it.

One important result of the decision was the notion of tax immunities between the states and the federal government. Following the *McCulloch* decision, interest on municipal bonds would be treated as exempt from federal income taxation, while interest on TREASURY BONDS would be treated as exempt from state income taxation. It should be noted that this did not become a practical issue until the Sixteenth Amendment to the Constitution was passed.

The tax interpretation used today came after a series of other decisions in the 19th and 20th centuries that reiterated the idea that the federal government and the states were generally immune to each other's taxes—based upon *McCulloch*. As interpreted today, it allows municipalities to borrow money and pay interest free of federal tax to investors as long as certain criteria of the U.S. Treasury are met.

See also BIDDLE, NICHOLAS; INCOME TAX.

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McFadden Act Passed by Congress in 1927, the McFadden Act prevented interstate banking by commercial banks for 67 years, until the INTERSTATE BRANCHING ACT was passed in 1994. In the interim, banks tried a variety of strategies to expand into other states but with very limited success.

The act was a response to the desire of many states to keep larger banks out of their local markets. During the 1920s, many small banks failed, especially in agrarian and rural states. An average of two per day were failing when the law was passed. Many state banking authorities feared that the failing banks' markets would be taken over by out-of-state banks and so pressed for protective legislation. Restrictions against operating a bank within a state were always regulated by the host state's banking laws. According to the McFadden Act, banks were prohibited from opening de novo (new) branches across state lines. This would effectively prevent national banks from branching into states that were not their home base of operations.

The McFadden Act was cosponsored by Representative Louis McFadden (1876–1936) of Pennsylvania and Senator George Pepper of Pennsylvania. The original resolution did not contain any specific references to prohibiting bank expansion. Instead, the original intent was to allow nationally chartered banks, registered with the comptroller of the currency, the same sort of privileges within the various states that were usually reserved for state banks only. However, the act became the cornerstone of the fragmented banking system in the United States that lasted for more than 60 years.

The act also authorized the comptroller of the currency to allow commercial banks to begin underwriting equity securities. Although banks began to do so, the provision did not contribute to the Crash of 1929 because the banks did not have enough time to underwrite large numbers of securities before the crash occurred. Once the BANKING ACT OF 1933 was passed, this power was effectively rescinded, and COMMERCIAL BANKING was separated from INVESTMENT BANKING.

The prohibition against branch banking was lifted in 1994, when Congress passed the Interstate Branching Act, allowing bank holding companies to establish themselves in more than one state. Despite the fact that bankers lobbied for years to have the act removed, it proved remarkably resilient and defined COMMERCIAL BANKING for almost seven decades.

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Meany, George (1894–1980) *labor leader* Born in New York City, Meany became an apprentice plumber at age 16 before becoming involved in labor unions. He first was active in the United Association of Plumbers and Steam Fitters and became a business agent for his union local in 1922. He was elected vice president of the New York State Federation of Labor in 1932 and then its president from 1934 to 1939. Meany also served as secretary-treasurer of the AMERICAN FEDERATION OF LABOR (AFL) from 1940 to 1952. In 1952, he became president upon the death of William Green. In 1955, he became president of the AFL when it merged with the Congress of Industrial Organizations (CIO). He served as president of the combined organization until he retired in 1979.

A dispute with another labor leader, Walter REUTHER, led to the United Auto Workers leaving the union in 1967. Meany was a key figure in expelling the Teamsters Union, led by Jimmy Hoffa, from the AFL-CIO in 1957. He was also strongly opposed to communist influences in American labor and supported American military involvement in Vietnam. He took strong political stances, some of which helped affect the outcome of elections.

Meany led the traditionally Democratic union to a neutral political position after 1972, refusing to support either of the major candidates for president in that year. As a result, Richard Nixon won the election, although Meany later accused him of being sympathetic to big business at the expense of labor. When Nixon's political troubles began with Watergate, Meany openly called for his resignation, reversing some earlier support. He also had a falling out with Jimmy Carter, who he originally supported, refusing to support Carter's economic policies. Strongly dogmatic and individualistic, Meany is considered one of the major figures in labor union history.

See also GOMPERS, SAMUEL; LEWIS, JOHN L.

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raphy. New York: Simon & Schuster, 1981.

meat packing industry Prior to 1830, the meat trade was a highly decentralized business,

drawing together individual farmers who produced the livestock, drovers who transported the animals to population centers, and butchermerchants who processed the meat and made it available to consumers. In rural areas (where most Americans lived), meat was locally produced outside of market relationships, as farmers harvested their livestock for home use and sold selected cured products to local stores.

Beginning in the 1820s, entrepreneurs discovered that, whenever possible, it was cheaper to move the slaughterhouses and meat processing facilities to the animals than to ship live animals to major population centers. So long as the meat could be kept from spoiling and transported economically, large-scale production facilities near livestock sources permitted economies of scale in meat production. Growth of internal transportation, principally roads, canals, and steamboat shipping on inland and coastal waterways, allowed nodal points to emerge for packing cured meat, preeminently pork.

Its advantageous geographic location helped Cincinnati become America's leading antebellum pork processing center. Perched on the banks of the Ohio River in rich farming country, Cincinnati was a favorite destination for farmers eager to take advantage of its superior outlets to southern and eastern markets. Annual production levels exceeded 100,000 hogs in the 1830s and reached 400,000 on the eve of the Civil War. Production was seasonal, with operations commencing once the weather became cold enough to chill the slaughtered meat, and ending in the spring once the rivers became sufficiently clear of ice to ship out the finished product.

Cincinnati's pork packers were businessmen who rarely soiled their hands by actually cutting meat. Rather than functioning in a daily market gauging sales through personal interactions with customers, Cincinnati's meat men gambled on long-term demand for pork products in distant ports and cities, anticipating that pigs purchased in November would be sold as bacon, ham, and lard six months later. They were more merchant than industrialist, better attuned to the vagaries of credit and demand for commodities than the mechanics of turning live animals into meat.

By the late 1850s, Chicago was challenging Cincinnati as the nation's leading pork packing center. The expansion of the nation's rail network explains much of this change, along with the continued westward movement of agriculture. As railroad track mileage grew to 9,000 in 1850 and 31,000 by 1860, canals and rivers became less desirable means for transporting meat. RAILROADS had two principal virtues in comparison to water transport: Trunk routes could convey food to eastern markets on a yearround basis, and feeder lines could enter the countryside and bring livestock from landlocked farms directly to central markets. Located astride this rail network, Chicago took full advantage of its transportation advantage and passed Cincinnati as the nation's leading meatpacking center during the Civil War. By 1870, Chicago produced \$19 million of cured pork products, twice as much as Cincinnati.

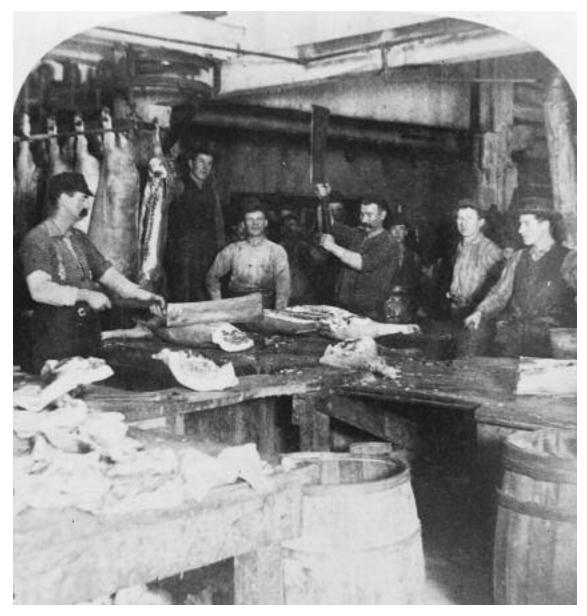
Cincinnati and Chicago, along with other smaller meatpacking centers, depended on pork for their major product prior to 1880. American consumers preferred their pork cured and their beef fresh; in an era before reliable refrigeration, only cured products could be processed and then distributed from centralized packing facilities. Beef production remained a local business well into the 1880s, as the only way to provide fresh supplies was for cattle to be slaughtered near to where it was consumed.

The emerging large meat packing firms, especially those led by Gustavus Swift and Philip Armour, rose to dominance by exploiting new technology in the beef trade. Expansion of the rail network opened the Great Plains to the commercial livestock business by connecting eastern urban areas with midwestern packing centers. Refrigeration, both of the packinghouses and railroad cars, allowed firms to operate yearround and sell to customers far removed from where the animals were slaughtered. Swift was the first meat packing firm to use refrigerated railroad cars to convey meat processed in midwestern plants to eastern population centers. Armour and other companies quickly followed Swift's lead. Backward integration, in the form of ownership of central stockyards, assured the large midwestern plants of a reliable supply of livestock, while forward integration, with the creation of wholesale meat outlets (known as "branch houses"), gave them entry into thousands of American communities.

The large meat packing companies were true national concerns with thousands of employees by the early 20th century. Trained livestock buyers scouted for quality livestock in the central stockyards of cities such as Chicago, Kansas City, Omaha, and Sioux City, aided by companyemployed "cowboys" who directed the cows, pigs, and sheep through the sprawling stockyards. Thousands of packinghouse employees turned the animals into meat, watched closely by platoons of supervisory employees. In the branch houses spread all over the nation, skilled butchers processed the carcass beef and pork into cuts suitable for butcher shops and restaurants. Hundreds of clerical employees tracked perturbations in livestock prices, took orders, monitored production, and tried to be the eyes and ears of the plant superintendents and company executives who managed their far-flung enterprise.

The meatpacking oligopoly was firmly established by World War I. In 1916, Armour, Cudahy, Morris, Swift, and Wilson killed 94.4 percent of the cattle processed in the 12 cities that produced 81 percent of the nation's beef. These five firms also controlled 81 percent of the hog slaughter in those centers. The structure of meatpacking changed little between World War I and the NEW DEAL; the Big Four firms (Armour acquired Morris in 1923) accounted for 78 percent of the total value of meat products sold in 1937.

The seeming stranglehold of the Big Four lasted for a half century. By the 1960s, however, their era was over; in 1962 the old-line firms con-



Hog slaughtering and pork packing in Cincinnati, Ohio, 1873 (LIBRARY OF CONGRESS)

trolled only 38.1 percent of the meat products sold in America. Hundreds of new firms sprang up in the 1950s and 1960s and took advantage of new and more efficient methods of production and distribution to take chunks of the market away from the old dominant companies.

The collapse of the Big Four's branch house system facilitated the entry of new firms. Two

interrelated developments rendered the branch houses obsolete. First, large supermarket chains proliferated after World War II. These national food retail companies bought meat in large amounts from packing firms, processed it at central warehouses, and then distributed it to local stores. As the importance of independent local retailers waned, the branch houses lost their central role in most urban centers. Second, the enormous expansion of the highway network after 1945 eliminated the locational advantage of the plants built in the rail hubs, and allowed newer, rural facilities away from rail lines to ship their meat to supermarket warehouses for lower distribution costs. Federal grading of meat helped these independent packers to compete on an equal footing with the old companies in their sales to supermarket CHAIN STORES.

Concomitant with the decline of the branch houses was an enormous increase in meat jobbers, known as "breakers" and "boners." Used primarily by the new independent beef packers, these jobbers took beef quarters from slaughterhouses and further processed the meat in preparation for resale to retail outlets. As their names imply, these wholesalers "broke" the meat down from quarters into basic subprimal cuts such as ribs, loins, and rounds, "boned" them, and then shipped to supermarket distribution centers. Retailers used the wholesalers because they provided more flexibility in the choice of cuts offered to the consumer; independent packers used wholesalers because these new companies needed to do no more than simply kill and minimally process their product, reducing initial capital investment and labor costs.

Declining concentration was a transitional phase before a new oligopoly took control of the meatpacking industry. Astute packers such as Iowa Beef Processors (IBP) founder Currier Holman and Missouri Beef Packers president Gene Frye saw an opportunity to dominate the beef trade by attaching "boning and breaking" operations to their slaughterhouses that would assume the tasks of beef wholesalers. This innovation quickly became known as boxed beef because of the containers in which the meat was shipped.

Boxed beef reduced costs in two ways. Meatpacking companies saved money because they no longer paid to ship unusable bones and meat scraps. Savings in transportation expenses allowed them to undercut prices of firms that shipped beef in carcass form and to increase their margin on each pound of beef. Retailers saved money because boxed beef eliminated the skilled and high-paid butchers who had fabricated the carcasses.

With this cost advantage, boxed beef became the new method for controlling the distribution of beef, much as the branch houses had served the Big Four at the turn of the century. In less than two decades boxed beef grew from a supplementary source of supply to the preeminent method of marketing beef. Sales of boxed beef more than tripled between 1971 and 1979 to 4.8 million pounds, and accounted for one-half of all federal beef slaughter at the end of the decade. Boxed beef constituted only 20 percent of the retail market in 1972; by 1989 boxed beef's national market share exceeded 80 percent. A survey of leading supermarkets revealed that beef shipped in the form of cattle quarters-the old method of transporting beef-accounted for only 4 percent of their receipts in 1986.

Boxed beef was a particularly important source of dominance for a few large firms that mastered this technique of production and distribution. The smaller independent concerns of the 1950s and 1960s rapidly lost ground to the new industry giants in the 1970s as boxed beef flooded the market. The leading four firms accounted for 60 percent of boxed beef sales in 1979 and 82 percent in 1987. IBP alone produced 40 percent of the nation's boxed beef in the late 1970s. Forward integration into boxed beef emulated the techniques of the old Big Four at the turn of the century; and it was equally effective as a method of dominating the industry, albeit under altered circumstances. Dominance in beef allowed the large companies to assert control over hog slaughter in the 1980s. Pork is sold in processed form far more than beef, and consumer preference for "brand" products protected Oscar Mayer, Hormel, and other pork processors from new competition. Nonetheless, aggressive entry into pork slaughtering by the large packers prompted the older porkbased firms to concentrate on the processing of meat and to abandon their killing operations. By 1990, the pork industry had bifurcated into slaughtering and processing sectors, each dominated by a handful of firms, albeit different ones.

By 1990, a new dominant set of firms had emerged. The new "Big Three" of IBP, Excell (a subsidiary of Cargill), and ConAgra were almost as powerful as Armour, Cudahy, Swift, and Wilson in their heyday. By 1989 the Big Three slaughtered almost 70 percent of the nation's steers and heifers and 35 percent of its hogs. These impressive figures understate their power over the distribution of meat in the United States. In 1990, these three companies produced more than 75 percent of the nation's boxed beef, the form in which most supermarkets receive meat.

The contrast between meatpacking in 1955 and 1990 is striking. In the old stockyard districts of Chicago, Kansas City, and Sioux City, several plants slaughtering a variety of livestock each employed several thousand workers and were located in close proximity to each other. By the 1990s, most meat production was from dispersed plants specializing in either beef, pork, or lamb, usually employing less than 1,000 workers, and widely scattered through the midwestern countryside. Yet much seemed familiar. A small group of firms controlled the industry, drawing on animal supplies from the hinterlands to supply a nation of city dwellers. And technology remained the key to moving large amounts of supplies from farm to refrigerator for the hungry American public.

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Roger Horowitz

mergers The process of combining companies by friendly or hostile means. The term refers to both a discrete activity at many Wall Street investment banks specializing in advising on such deals, as well as the generic types of mergers that can result. The process is tied closely to antitrust and antimonopoly activities as well.

Since the Civil War, there have been several acknowledged merger periods—the 1890s and 1900s, the 1920s, the 1950s and 1960s, and the mid-1980s to the 2000s. In all cases, small companies were purchased by larger ones and consolidated into their operations. In the latest period, small companies have bid on larger ones as well. The consolidation trend has often led to close scrutiny by antitrust regulators when violations of the SHERMAN ACT or the CLAYTON ACT were alleged. Each period has had its own distinct characteristics setting it apart from the others.

The period of the 1890s and the 1900s was the period of trust formation, whereby large companies, assembled as trusts, purchased the stock of other similar companies, forming enormous agricultural and industrial organizations. It began in the aftermath of a Supreme Court ruling, *United States v. E.C. Knight Co.* in 1895, favorable to trust formation and ended with decisions ordering the breakup of both the Standard Oil Co. and the AMERICAN TOBACCO CO. in 1911. The second period, in the 1920s, began with the Harding administration and ended with the stock market crash in 1929. It was characterized by consolidation in the UTILITIES industry, retailing, and CHAIN STORES, among others. The third period, in the 1950s and 1960s, witnessed the growth of the CONGLOMERATES. These forms of industrial organization became known as the third type of merger, along with horizontal and vertical mergers. Horizontal mergers occur between two companies in the same sort of business, while vertical mergers occur between companies in the same supply chain. In the 1980s and 1990s, the merger trend was very broad, especially in the wake of DEREGULATION of many industries previously separated, including utilities, banks and financial service institutions, airlines, retailers, and producers of capital equipment and machinery.

In the late 1960s, outside the bounds of the four broad periods, the hostile takeover bid was first employed. This occurs when a company makes an unwanted bid for another, setting off a chain of events that may lead to bids and counter-bids from others also interested in the target company. With the advent of the hostile takeover, bids have also become larger over the years and have become tied to new issues in the stock and bond market since financing for such large transactions can become very complicated. Because of this new twist, Congress passed the Williams Act in 1968, requiring potential buyers to register with the SEC once they had accumulated 5 percent or more of a company's stock. Also appearing in the wake of the hostile takeover bid were defense measures employed by companies designed to fend off unwanted suitors, including poison pill defenses and other measures colloquially known as shark repellents.

Greenmail also appeared during the 1980s. Often, a potential bidder would acquire a block of a company's stock with the apparent intent of taking control, but with the actual aim of being bought out at a higher price by the company's directors. When the company complied, the process became known as greenmail.

Another popular technique used in mergers and acquisitions is the leveraged buyout—a technique developed in the 1970s and designed to buy the existing stock of a company and make it a private company. Leveraged buyouts, or LBOs, became popular during the merger trend that began in the 1980s. By borrowing large sums of money, potential buyers could bid for the existing stock of a company. Often, the borrowing was a combination of bank loans and JUNK BONDS. Usually, the plan was to restructure the company and sell off some of its nonessential assets in order to repay the debt. The result would be a more efficient, productive company.

The best-known LBO of the 1980s was the buyout of RJR/Nabisco by Kohlberg, Kravis, Roberts, a specialized buyout firm that was one of the first to employ the concept successfully. Borrowing almost \$23 billion through a variety of sources, the small boutique firm bought the company and took it private, making it both the largest merger and largest buyout to date. Another type of leveraged buyout is referred to as the management buyout, a deal in which the management of a company decides to buy its outstanding stock, converting it to a private company. The buyout may be done to fend off a hostile bidder or to raise a company's stock price if management believes that its policies can better be executed without shareholders. The funds used to purchase the stock are usually borrowed from the junk bond market or banks and then repaid after the company is restructured. Because of the borrowing factor, this type of buyout differs from a leveraged buyout only by the fact that the buyers are insiders of the company rather than someone from the outside.

See also INVESTMENT BANKING.

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Merrill, Charles (1885–1956) *stock broker and businessman* Merrill was founder and chief executive officer of Merrill Lynch & Co., the first of the financial retailers that came to dominate Wall Street in the latter part of the 20th century. His firm started as a retail-oriented brokerage and rose to become the largest securities house in the country.

Merrill was born in Florida in 1885. After studying briefly at Amherst and the University of Michigan, he went to New York to find employment on Wall Street at the small firm of George H. Burr & Co. He opened Charles H. Merrill & Co. in 1914, specializing in underwriting stocks of small companies and selling to retail clients. His major competition at the time came from such firms as E. F. Hutton. He also hired a friend, Edmond Lynch, who became a partner shortly thereafter. Their original business catered to small investors and was concentrated mainly on stock brokerage, but they did engage in small underwritings, many for emerging retailers such as Kresge.

In the 1920s, the two also became involved with the silent movie industry, becoming owners of the Pathé Frères Cinema. They later sold their interest to Joseph P. KENNEDY and Cecil B. DeMille; it was eventually transformed into RKO Pictures. By the late 1920s, Merrill was losing interest in the securities business; immediately after the Crash of 1929, he effectively withdrew from the industry, transferring his operations to E. A. Pierce & Co. For the remainder of the 1930s, he busied himself with his private holdings, one of which was a controlling interest in Safeway Stores.

Merrill returned to the firm he founded when Pierce ran into financial difficulties. In 1940, the old firm was resurrected with the Pierce and Merrill names and returned to Wall Street. A year later, the firm merged with Fenner & Beane to become Merrill Lynch Pierce Fenner & Beane. In the early 1950s, Beane was dropped and Smith was added to the corporate name becoming Merrill Lynch, Pierce, Fenner, and Smith. Charles Merrill died in 1956, just before his firm expanded to become a major Wall Street investment bank.

By the late 1960s, Merrill Lynch vied with older, more established Wall Street firms for the leadership in underwriting and sales. The firm went public in 1971 and then became listed on the NEW YORK STOCK EXCHANGE, the first exchange member to be listed on the exchange itself. By the 1990s, the firm had become the largest securities dealer in the country in terms of capital and underwriting activities in addition to its traditional stock brokering activities. By the late 1990s, it also led Wall Street in many other specialized financial services such as MERGERS and swap finance.

See also INVESTMENT BANKING.

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Meyer, Eugene (1875–1959) *financier and newspaperman* Born in Los Angeles, Meyer interrupted his studies at the University of California in order to follow his family to the East Coast after his father became a partner at LAZARD FRERES in New York. After graduating from Yale, his father offered him \$600 to stop smoking, which he accepted. He invested the money, accumulated around \$50,000, and purchased a seat on the NEW YORK STOCK EXCHANGE, beginning his career on Wall Street.

Meyer became an aggressive investor during the Panic of 1901 and accumulated many stocks at very cheap prices. When World War I began, his net worth was estimated at \$50 to \$60 million. He was a major investor in the Allied Chemical Corp. and the automobile industries. In 1918, Woodrow Wilson appointed him director of the War Finance Corp., where he gained invaluable experience in farm financing, among other specialties. Calvin Coolidge made use of that experience by appointing him to the Federal Farm Loan Board, and in 1930 Herbert Hoover named him to the Federal Reserve Board. His nomination was vigorously opposed by Representative Louis T. McFadden of Pennsylvania, author of the McFAD-DEN ACT. but he was confirmed nevertheless.

Ideological differences with Franklin Roosevelt's administration forced him to retire from public service. In 1933, he purchased the *Washington Post* with the intent of turning it into a major national newspaper. After a shaky start, the newspaper succeeded and became nationally recognized. He also purchased the *Washington Times Herald* and a radio station.

Meyer returned to public life in 1946, when Harry Truman appointed him the first president of the World Bank (International Bank for Reconstruction and Development), which had just been created at Bretton Woods, New Hampshire, along with the International Monetary Fund. After helping organize the institution, he resigned and became chairman of the Washington Post company. He died in Florida in 1959. A daughter, Katherine Meyer Graham, eventually succeeded him at the newspaper.

See also FEDERAL RESERVE; NEWSPAPER INDUSTRY.

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military-industrial complex The term given to the close alliance between the military and defense contractors during the 1950s and 1960s under which preferential contracts were given by the military through the Defense Department for weapons, ordnance, and aircraft. The term was first used by President Eisenhower upon leaving office in 1961, when he described the tight relationship that had developed between the two sectors. "We must guard against the acquisition of unwarranted influence, whether sought or unsought, by the military-industrial complex," he stated in his farewell speech from office.

The origins of the military-industrial complex can be traced to World War II, when the general mobilization brought many companies into direct contact with the government. Many began producing tanks and other armaments for the government on a large scale. During the 1950s and 1960s, the Department of Defense continued the tradition in peacetime when it awarded many military contracts to aerospace and industrial companies to produce all sorts of military weaponry, aircraft, and vehicles. In the United States, the government does not produce its own ordnance and weapons as do some other countries, so the reliance on private contractors was necessary.

As a result of the tensions created by the cold war and the influence of the military, many CON-GLOMERATES won valuable defense-related contracts that contributed to the rising prices of their stocks in the 1960s. Although they were highly diversified companies, many conglomerates relied heavily upon defense contracts, awarded to their manufacturing and aerospace divisions, to produce a substantial portion of their revenues. Often, they hired senior military officials away from the armed services to serve as consultants and executives, giving rise to the close relationship between the sectors and prompting further criticism by those opposed to such close collaboration between the military and private industry.

The term has fallen out of favor in recent years, although it is still used to describe the rela-

tions of armaments producers and of administrations that spend a large amount of the federal budget on defense.

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mining industry Although basic geology dictated that the mining industry would not play a leading role in the early economic and political life of the United States, many early colonists came to the eastern shores of North America with hopes of finding vast gold and silver mines like those exploited by the Spanish in South and Central America. Leaders of the London-based Virginia Company directed that a crew of 20 men with six pickaxes begin searching for minerals within a week of their arrival in Virginia in 1607. Yet the colonists soon discovered that the mountains of gold and silver they had expected to find were not readily evident anywhere along the banks of the Chesapeake. Captain John Smith wrote of his disappointment that the mineral wealth of the immediate region looked rather unpromising, though he remained optimistic that further exploration would likely reveal "mines very rich of diverse natures."

John Smith was eventually proven correct. The North American continent did hold many rich mines, not only of gold and silver, but also of copper, lead, iron, and other metals. Unfortunately for Smith and the colonists, the fabulous gold and silver mines were thousands of miles from Virginia in what would eventually become the American West. Although disappointed by the absence of precious metals, early American colonists did find and exploit less valuable minerals, quickly developing small and widely scattered deposits of bog iron ore to make nails and basic tools. But mining bog iron was no path to easy riches. The American colonies would undoubtedly have developed in a strikingly different manner if geology had layered with gold the rivers of Virginia instead of California. As it was, the absence of precious mineral deposits in eastern North America ensured that neither the colonies nor the subsequent early American republic were much concerned with the mining industry. As late as the 1780s an aging Benjamin Franklin could accurately proclaim, "Gold and silver are not the produce of North America, which has no mines."

By the time of the Revolutionary War, the small American mining industry primarily exploited modest eastern deposits of copper, tin, and iron. Typically owned and operated by individuals or small partnerships, these early mining enterprises paid a royalty, or percentage of their production, to the government, a system that was a hold-over from colonial days. Shortly after the American Revolution, the Continental Congress voted to increase the royalty from a fifth to a third in hopes of speeding the repayment of a large war debt. However, the policy was not reenacted after the dissolution of the Continental Congress, in part because during the next few decades there was little reason to think much income would be gained from the meager eastern mineral deposits.

The course of the American mining industry began to change after the 1803 Louisiana Purchase, when the U.S government became the new owner of lead and zinc mines in the upper Mississippi Valley. These mines had already proved fairly valuable to the French and Spanish, and in the light of growing tensions with Great Britain, which would later lead to war, President Jefferson was eager to secure a steady supply of lead for bullets. To that end, Jefferson successfully pushed Congress to adopt the Lead Leasing Act of 1807, establishing a system whereby the government leased the mines to private operators in exchange for a percentage of the lead. Although the leasing system was plagued by corruption and inefficiency, it did succeed in encouraging a significant early mining rush into the upper Mississippi Valley, where miners could develop the surface veins of lead with relatively little capital and simple technology. By mid-century lead mining in the area had become a significant part of the regional and national economy, yet the industry remained largely decentralized and technologically primitive—particularly in comparison to many European mining operations of the time.

An exception to this primitive early state of the American mining industry occurred in the development of eastern coal mining during the 19th century. The American coal industry's exploitation of the huge coalfields of Pennsylvania, West Virginia, and other states grew steadily during the first half of the 19th century in concert with the demands of early industrialization. Well before the Civil War, coal mining operations in towns such as St. Clair, Pennsylvania, had developed into large operations using sophisticated technologies, similar in size and scope to European mines. Mining machinery inventors abounded in the Pennsylvania coalfields, busily making improvements in pumping machinery, rock drills, ventilation, and a host of other areas where deep coal mining raised obstacles. Yet few of these mechanically minded miners and businessmen had any formal technical education. Rather, much like the civil engineers trained on great public works projects such as the ERIE CANAL, early coal mining engineers and managers learned their trade on the job through informal apprenticeships with practicing engineers.

While the coal mining industry flourished, hard rock mining remained underdeveloped during much of the first half of the 19th century. Yet, as further acquisition of western lands created a nation stretching from "sea to shining sea," the conditions were ripe for a major reorientation of the American mining industry. If geology had been stingy in providing precious mineral deposits to the eastern half of the nation, the opposite proved true in the West. The ink had scarcely dried on the 1848 agreement making Spanish California part of the United States when a millwright discovered placer gold deposits near Sacramento, California. By summer, some 5,000 miners were working in the gulches and streams of the western Sierra Nevada; by year's end they had washed out nearly \$10 million worth of gold from the gravel stream beds—and the California gold rush had only just begun.

Most of the so-called 49ers who arrived in the next few years mined alluvial gold fields located on federal land, pursuing gold that had, over many centuries, been slowly eroded from rocky deposits in the mountains and been carried by water downstream to settle out in river beds and flood plains. The miners had no clear legal right to take gold from federal lands, yet neither did the law explicitly prohibit it. The government simply had no formal policy for selling, leasing, or even monitoring public mineral lands. For the first two years of the gold rush the new territory was administered by the U.S. Army, which essentially allowed the miners free run of the federal lands-in part because the mining was a boon to the development of western trade. By 1849, the busy mines in California had already produced almost 2 million ounces of pure gold worth somewhere in the area of \$40 million-a stunning amount of wealth in an era when the entire federal budget for the same year was slightly more than \$45 million.

For a brief time, the California gold fields offered a genuine, if exceedingly slim, chance for any American to strike it rich, if only they could find the cash to somehow get to the West Coast and purchase a few basic tools and supplies. To an even greater extent than with the earlier lead mining rush on the upper Mississippi, the California gold deposits could be mined with simple tools and little capital, and the federal government's inertia in developing a coherent policy for managing the gold fields meant that miners could essentially take whatever they found for free. Still, the vast majority of the early 49ers found little or no gold, while those who arrived in subsequent years discovered that most of the best claims had been taken. Further, as the richest and most easily mined deposits gave out, mines run by individuals increasingly gave way to mining companies with the capital needed to pursue large-scale operations. By consolidating many claims into one operation, these companies could use water cannons and giant dredges to profitably break up large placer deposits and remove the gold. While highly profitable, such techniques created wide-scale environmental damage and angered downstream farmers whose fertile lands were flooded with silt from the mines. Hard-fought court battles eventually led to severe restrictions on hydraulic mining in California, constituting some of the earliest significant environmental REGULATION of the American mining industry.

As downstream placer deposits gave out, prospectors moved up the rivers and into the Sierra Nevada and beyond in search of the "mother lode," the ultimate source of the gold encased deep within the Rocky Mountains to the east. By the 1860s, intrepid prospectors had found hundreds of new deposits, two of which were large enough to ignite their own mining rushes: the Colorado gold fields and the famous Comstock Lode silver mines in Nevada. As had been the case with the early placer mines, a lone miner or modestly financed partnership could profitably develop some of the richest and most easily accessible hard-rock mines. But as miners followed the veins of gold or silver deeper down into the earth, the costs rose exponentially. To profitably develop the gigantic silver deposit at the Comstock Lode, for example, required a complex system of mine timbering, massive hoisting machinery, and expensive concentrating and smelting operations. As a result, ownership and management were once again increasingly consolidated into the hands of a small number of large mining companies, many now capitalized by a growing group of mining financiers based in Boston, Philadelphia, and San Francisco.

In 1866, some 17 years after the California gold rush began, Congress finally began to create a coherent federal mining policy. By this point

the mining industries in California, Colorado, and Nevada had become powerful big businesses, and mine operators and promoters with tremendous fortunes effectively used their economic clout to influence legislators. The result was the 1866 lode-mining law, which essentially legalized the previous informal policy of free access, no royalty payments, and cheap out-right sale of public mineral lands. Several years later, Congress combined the 1866 law with several others to form the famous-and still operational-1872 Mining Law, which preserved the earlier laws' basic principles while also increasing the size of claims to facilitate large-scale mining. Under the "free and open" access principle, any citizen was guaranteed the right to begin mining on federal land without needing to notify the government. Miners who wished to buy their claim had to file with the government, but submitting a so-called patent claim was not in any sense a request for permission to mine. Permission had already been granted. As a result, the government essentially abandoned its power to manage and control public mineral lands, retaining for the U.S. Department of the Interior, the administrator of the mineral lands, the power to grant title to the land when a miner (or more likely, a mining company) proved he had done \$500 of work, filed the proper papers, and paid the small patenting fee.

Thanks in part to the extraordinary giveaway of public mineral wealth legalized by the 1872 law, the development of western hard rock mining grew at an astonishing rate. Although some opportunities continued to exist for small independent miners, increasingly the mining industry was dominated by technologically sophisticated and highly capitalized lode mining companies that were eager to move beyond the rapid boom and bust pattern of early mining rushes and develop long-term profits. An emphasis on efficiency, planning, and prudent management began to replace the previous "get rich quick" spirit of mining. In 1879, Congress recognized the growing economic importance of this evolving mining industry and its technical needs by creating the U.S. Geological Survey, which began to provide the geological maps and expertise critical to large-scale mining. During the same period, the mining industry increasingly depended on the services of formally educated mining engineers, many being graduates of the leading European schools of mining. Yet as the American demand for mining engineers outstripped supply, the industry and the profession worked to improve domestic educational opportunities. Already prominent institutions such as Columbia University and MIT began offering degrees in mining engineering, and a number of state and privately funded colleges such as the Colorado School of Mines sprang up soon after. Schools such as Columbia and MIT also took the lead in providing their students with considerable training in business management and economics, a recognition that many engineers often ended up in managerial positions with the large mining companies. By the early 20th century, the quality of mining engineering education in the United States equaled or surpassed that of the Europeans, laying the foundation for the industry's subsequent technological progress.

As a result of these developments, the American mining industry underwent dramatic changes in the late 19th and early 20th centuries. For much of the half century following the 1849 California gold rush, the industry had grown by fits and starts. Cycles of boom and bust dominated as mining companies discovered fabulously rich deposits of gold and silver and developed the famous mining districts of the West, many of which became equally famous ghost towns not long afterward. The Comstock Lode, Cripple Creek, Leadville, Virginia City, Bannack, and a host of other names chart the erratic rise and fall of western hard-rock metal mining. Old-fashioned gold rushes continued to occur-most notably the Klondike rush of the late 19th century-but gradually the dominance of silver and gold began to yield to industrial metals such as copper, zinc, and lead. In 1849, the first year of

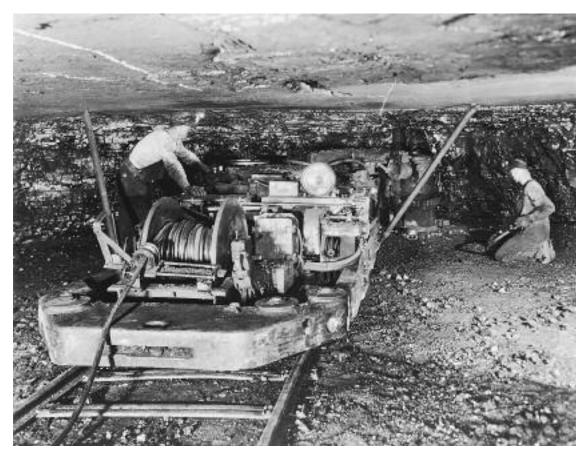
the California gold rush, the United States produced 1,935 ounces of gold and only about 800 tons of copper. However, 40 years later American gold production had declined to 1,589 ounces, while copper production had shot up to almost 130,000 tons. Large, well-capitalized corporations dedicated to developing industrial ores (often mixed with small amounts of gold and silver that helped fatten profit margins) began to dominate. Americans valued silver and gold for bullion and for use in jewelry, tableware, and other luxury items. But the copper, lead, and zinc from western mines (as well as the important iron and coal output from other regions) were the raw stuff of American industrialization, the material basis of the emerging modern society of electric power networks, RAILROADS, and steam engines.

The rapid growth of the mining industry and its signal importance to the developing industrial and consumer economy of the early 20th century led Congress to create an agency dedicated to mineral extraction, the U.S. Bureau of Mines. Established in 1910, the Bureau of Mines (BOM) was initially designed only to increase the safety and efficiency of the coal industry. Yet the agenda of the BOM soon expanded. As western hard-rock miners of copper, zinc, and other critical industrial metals began to face difficult new challenges from low-grade ores and ever-deeper and larger mines, the BOM increasingly came to their aid, offering expert advice and creating technological advances through research and development. The agency set up regional research stations in California, Utah, Arizona, and Montana, where the BOM staff worked in concert with major mining companies to solve technical problems. The BOM also collected and disseminated detailed economic statistics on the mining industry in hopes of improving long-term planning and management. Technically and economically, the BOM played a critical role in aiding the development of the large-scale modern mining operations of the 20th century.

This development of modern large-scale mines—a "mass extraction" equivalent to the

better known MASS PRODUCTION—was first and most fully realized by the copper mining companies of the American West. Early in the 20th century the engineers and managers of the Utah Copper Company began development of what would later become the massive Bingham openpit mine near Salt Lake City, Utah. Faced with a rising demand for copper for national electrification, paired with the approaching exhaustion of the richer high-grade copper mines in Michigan and Montana, Utah Copper created a new "factory system" for mining that combined steam shovels, railroads, and a massive concentration of machinery into a seamless technological system so efficient that it could profitably mine ore that had previously been dismissed as worthless. The Bingham mine was also unique in that it required financiers to provide an unheard-of amount of capital years before significant amounts of profitable ore would be mined. Fortunately for Utah Copper and its investors, the Bingham mine quickly became one of the most successful copper mines in the world, providing large amounts of inexpensive copper just as the American demand began to soar.

While certain precedents can be found with the open-pit operations of the Minnesota Iron Range or the deep-level mines of the Idaho Silver



Men and machinery in a mine (LIBRARY OF CONGRESS)

Valley, in its massive capitalization, stunning efficiency, and technological sophistication, the Bingham open-pit copper mine was arguably the first truly modern mining operation of the 20th century. The mining industry quickly adopted these basic principles for use in many other types of mining. By mid-century, the hard-rock mining companies used large-scale open-pit operations wherever geological conditions allowed, and by 1963, some 90 percent of all the metal produced in the United States (including the precious metals) originated in open pits. Further, where conditions necessitated deep underground mining, mining engineers developed block-caving technology that allowed efficiencies of scale and speed approaching those afforded by surface operations. These highly capitalized large-scale mines were critical to meeting the huge increases in metal consumption during World War II, as well as providing the material basis for the postwar explosion in American consumption of such metal-intensive products as automobiles, refrigerators, and new homes. Simply stated, the mining industry's open-pit operations made possible the much-vaunted "American Way of Life" of the postwar years.

The ability of mass extraction mining to profitably mine extraordinarily low-grade ores has allowed the mining industry to extend the life of many hard-rock operations for decades beyond earlier forecasts. Operations continued into the 21st century, for example, at the Bingham pit mine, where the ore now contains only .5 of 1 percent copper. However, beginning in the 1970s many mining companies shut down or scaled back operations at western hard-rock mines in Montana, Idaho, and Arizona, leaving state governments with daunting challenges as they struggled to recover from the sudden loss of thousands of jobs and millions in tax payments. In part, this decline simply reflected the exhaustion of profitably exploitable reserves-improvements in efficiency could not extend the lives of declining mines forever. Equally important, however, was the increasing internationalization of

American mining companies, which found that their overseas mines could be developed more profitably—in part because foreign environmental standards were often lower than those in the United States. Indeed, in the decades before the passage of federal clean air and water laws in the 1960s and 1970s, the American mining industry had created vast environmental problems. Some of the most efficient and productive hard-rock mining districts of the West, such as those at Butte, Montana, and the Silver Valley of Idaho, were designated for federally funded clean-up under the Superfund program.

In a final irony, nearly a century after the American mining industry shifted its emphasis from precious minerals to copper and other industrial metals, gold mining has once again become a mainstay of western mining. During a period of high gold prices during 1980s and 1990s, American and international mining companies rushed to develop open-pit, cyanide heap-leaching gold mines all around the western United States. Even the richest of these deposits average only about .20 ounces of gold per ton of rock, or slightly more than one sixmillionth of 1 percent. In the average open-pit gold mine the operator thus mines almost three tons of ore to produce enough gold to make one small wedding band-and the remainder of the ore is transformed into huge volumes of hazardous waste.

Thus, in the first decade of the 21st century, one of the most daunting problems facing the American—and now international—mining industry is an environmental one. For almost a century, steady improvements in the efficiency and size of American mining operations provided the raw material for industrialization and the modern consumer society. Now the global appetite for many of the same minerals threatens to dwarf even the enormous American consumption. A key question facing the 21st-century mining industry will be whether it can create a more environmentally sustainable system for supplying the raw materials of industrial civilization.

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Timothy J. LeCain

Morgan, John Pierpont (1837–1913) *banker* The most powerful banker of his generation and the second head of the banking house that became known as J. P. Morgan & Co. Pierpont, as he was known, was born in 1837, the son of Junius Spencer Morgan. He spent a year studying at the University of Göttingen before entering the banking business in the United States.

Morgan started in 1857 with the firm of Duncan, Sherman in New York, beginning a career that would eventually bring different firms together as the House of Morgan. He also became a partner in Drexel & Co., a well-established Philadelphia banking firm headed by Anthony DREXEL, and the new Drexel Morgan & Co. became the American agent for J. S. Morgan & Co. of London, his father's firm. Morgan inherited his father's banking business upon Junius Spencer's death in 1890 and expanded it into the most powerful issuer of new securities on Wall Street.

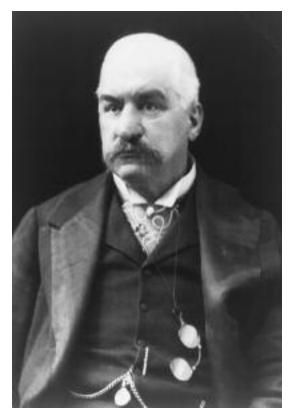
Pierpont was accused during the Civil War of profiteering at the expense of the Union when he bought a consignment of rifles and resold them to the army at a much higher price. After that incident, he was much more controlled in his dealings and became more conservative in his business practices, following the example of his father. He became a notable banker in his own right, participating in many financings for RAIL-ROADS and industrial companies in the 1870s and 1880s. In 1871, after his father arranged a merger with Drexel & Co. of Philadelphia, an established investment bank, the combined firm represented Junius Morgan's interests in the United States as well as doing a substantial business of its own underwriting new securities of many railroads and U.S. Treasury issues as well.

Morgan's interest in railroads led many in Congress to believe that he was devising a plan to consolidate many railroads under one roof in 1887. Although the plan failed because many of the other railroad executives, including Jay GOULD, could not agree on a unified plan, Congress nevertheless passed the Interstate Commerce Act, the first legislation attempting to control the railroads while also establishing the INTERSTATE COMMERCE COMMISSION, the first U.S. governmental agency devoted to REGULATION of an industry.

By 1890, the Morgan banking interests were the most powerful in the country and also among the most respected in Great Britain. Junius Morgan died in 1890 while vacationing in Italy. A reorganization of the partnership followed, and J. P. Morgan & Co. emerged in 1894 as the most powerful member of the firm. Pierpont was contemplating retirement when a financial crisis erupted in the United States that persuaded him to remain active in the bank.

The financial crisis on Wall Street in 1893–94 was precipitated by a steady loss of the U.S. Treasury's gold reserves. Morgan and other bankers, including August Belmont, assembled in Washington and advised the government on how to restore the supply and end the crisis. The operation proved successful, although the bankers were criticized for adding to their own fees while the government was helpless to intervene. But Morgan had attained fame for saving the country, and his reputation grew considerably.

In 1901, he further enhanced his reputation by buying Carnegie Steel from Andrew CARNEGIE for almost \$500 million, making the transaction the largest in history. The United States Steel Corporation was born as a result. Other Morganorchestrated deals during that general period included the formation of GENERAL ELECTRIC from Thomas Edison's previous small company, and AMERICAN TELEPHONE & TELEGRAPH. Morgan also created the INTERNATIONAL HARVESTER COMPANY by merging the McCormick reaper company with several others. All of these consolidations were established companies purchased by Morgan and consolidated into even larger companies during the period of intense merger and acquisition activity that occurred before the First World War.



John Pierpont Morgan (LIBRARY OF CONGRESS)

During the Panic of 1907, Morgan again came to the aid of the New York banks, the stock exchange, and the nation itself by helping to provide funds to stabilize the markets, ensuring that the panic would end quickly. He also used the occasion to strengthen U.S. STEEL by buying ore fields from John D. Rockefeller in order to provide the company with the commodities necessary to operate cheaply. Despite the assistance provided, Morgan and his banking allies came under close scrutiny during the congressional hearings in 1912 known as the Pujo Committee hearings.

J. P. Morgan & Company had become the acknowledged leader of the "money trust," a group of New York banks accused by Progressives of controlling the nation's credit and access to the securities markets. He and others were called to testify about the activities of the putative money trust. It was the first time that anyone from a banking family had appeared publicly before a congressional hearing, and Morgan defended his banking empire by admitting to none of the accusations or even acknowledging some of the criticisms of banking practices in general.

Also at issue at the time was Morgan's interest in insurance companies. Morgan and his various partners sat on the boards of many banks and trust companies and in the 1900s began showing an interest in life insurance, mainly because of the large amount of captive funds held by the life insurers. The bank bought an interest in Equitable Life, a company with large reserves that had been the target of a New York investigation several years before, examined by the Armstrong Committee.

The Pujo hearings ended inconclusively, and Morgan traveled to Europe for a vacation shortly afterward. He died several months later, in 1913, just as the new FEDERAL RESERVE came into existence. He was succeeded at the bank by his son, John Pierpont Morgan Jr., better known as Jack. In addition to his banking and industrial interests, Morgan was also known for his extensive art collection, reputed to be the best in the country and most of which he housed at his New York City mansion. See also Belmont, August; Morgan, John Pierpont, Jr.; Morgan, Junius Spencer.

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Morgan, John Pierpont, Jr. (1867–1943) *banker* The son of John Pierpont Morgan, he was born in Irvington, New York, and attended St. Paul's School before attending Harvard. "Jack," as he was known, graduated from Harvard in 1889. After an apprenticeship period at the family bank, he was sent to J. S. Morgan & Company in London in 1893 to learn banking before returning to the United States in 1901. He assumed a partnership at J. P. Morgan & Company in New York and then took the reins of power at the family bank after his father's death in 1913. Under his guidance, J. P. Morgan & Co. continued to assert its preeminence as Wall Street's best-known private bank.

The bank maintained its influence in industry and on Wall Street. During World War I, J. P. Morgan & Co. became the major financier to the Allies, the main procurement agent for Great Britain and France, and helped arrange large war loans for the Allies in 1915. As the country's bestknown banker, Jack Morgan was also the target of extremists. He survived an assassination attempt at his home in 1915. Between 1917 and 1926, the bank arranged almost \$12 billion in international bonds for the major European governments and Canada. He and several partners also served on an international committee that sought to reorganize German war reparations in 1922, a year before the Dawes Plan.

In 1920, one of Pierpont Morgan's most famous companies, the U.S. STEEL CORP., was found not to be a monopoly operating against the public interest. It had been sued almost a decade before for being a monopoly, but the Supreme Court found in its favor. During the 1920s, J. P. Morgan & Co. organized several large holding companies that consolidated different UTILITIES. Jack Morgan was the main witness in the Senate hearings originally called in 1932-33 to investigate the causes of the stock market crash and its consequences. When the BANKING ACT OF 1933 was passed, Morgan and his partners opted to remain a commercial bank and divested themselves of their securities operations. MORGAN STANLEY & CO. was formed by former partners of the bank and continued to act as an investment banker to the many Morgan-formed companies and for the bank's other established clients. At the same time, relations with Drexel & Co., established in 1871, were effectively severed, and the banks went their separate ways.

Another part of the Morgan empire was dismembered in 1935, when Congress passed the PUBLIC UTILITY HOLDING COMPANY ACT, limiting the expansion of utility holding companies and putting them under the supervision of the Securities and Exchange Commission. J. P. Morgan & Co. had been instrumental in forming the United Corporation, a giant utility HOLDING COMPANY with electric power production capacity in many states. As a result of the legislation, investment bankers were effectively precluded from the management of the holding companies.

Morgan and his partners again found themselves the subjects of a Senate inquiry in 1936, when they were called before the Nye Committee investigating bankers' behavior during World War I. Since the activities being investigated were more than 20 years old, the committee could not establish a link between bankers and war profiteering, and the hearings ended without much fanfare. J. P. Morgan & Co. finally went public in 1940, ending the bank's history as a partnership. Jack Morgan died in 1943, ending family control of the bank.

See also investment banking; Morgan, John Pierpont.

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Morgan, Junius Spencer (1813–1890) *banker* Morgan was the founder of the banking firm that came to be known as the House of Morgan. He was the father of John Pierpont Morgan and the grandfather of John Pierpont Morgan Jr., better known as Jack. He was born in Massachusetts in 1813, the son of Joseph Morgan, a successful businessman and one of the founders of the Aetna Insurance Company. He was apprenticed to a Boston businessman when he was 16, and his father bought him a partnership in a New York private bank that became known as Morgan Ketcham & Co.

Morgan did not remain in banking but moved to Hartford, where he began a successful career in the dry goods business with Howe, Mather & Co. He remained in Connecticut for 15 years, until a trip to London brought him into contact with George Peabody, an expatriate American banker who was looking for an appropriate partner with whom to share the responsibilities of his banking business. Peabody had no heirs to whom he could entrust his firm and needed to find someone who could succeed him.

Morgan accepted a partnership offer in the London banking house of George Peabody in 1854, which retained its name until Peabody retired in 1859. The name of the firm then was changed to J. S. Morgan & Co., and the business remained in London. Despite its American origins, the firm was one of London's better known merchant banking houses and participated in several rescue operations organized by the Bank of England to bail out other London bankers, including the London office of Brown Brothers. In 1857, it was the recipient of bailout funds provided by the Bank of England and Brown Brothers as a result of the Panic of 1857 in the United States.

Junius's son, John Pierpont Morgan, entered the banking business in 1857 with the firm of Duncan, Sherman in New York, beginning a career that would eventually bring the different firms together as the House of Morgan. At the suggestion of Junius, he became a partner with Anthony DREXEL in the Philadlephia banking house of Drexel & Co., which then changed its name to Drexel Morgan & Co. The firm became one of the best known on Wall Street and served both domestic and international interests as an agent of the London bank.

When Junius Morgan died in 1890, the bank passed to John Pierpont Morgan. The name was changed to J. P. Morgan & Co. Of the three Morgans in the banking family, Junius was the most conservative and set the tone for the policies his bank would pursue for three generations, until it went public in 1940.

See also Brown Brothers Harriman; Morgan, John Pierpont; Morgan, John Pierpont, Jr.

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Morgan Stanley & Co. An investment bank created in 1934 by J. P. Morgan & Co. after the Glass-Steagall Act (BANKING ACT OF 1933) was passed. Underwriting of securities was spun off to the newly created partnership headed by Henry S. Morgan, a son of J. P. Morgan Jr., and Harold Stanley, both partners of J. P. Morgan & Co. Morgan's former investment banking clients passed to the new partnership, since the 1933 legislation forbade commercial banks from underwriting corporate securities and J. P. Morgan & Co. had decided to be solely a commercial bank after the law was passed.

Morgan Stanley became the premier investment bank on Wall Street in the 1930s and maintained its position into the latter part of the 20th century. In the late 1940s, the Justice Department filed suit against Morgan and 16 other investment banks in *United States v. Henry S. Morgan et al.*, charging the investment banks with violations of the antitrust laws. The case was dismissed in the early 1950s, when the presiding judge ruled that the government's case had not been proven.

Over the years, Morgan Stanley was the primary investment banker to many large U.S. corporations, including AT&T, GENERAL MOTORS, and IBM. In the 1960s, its power was challenged by other Wall Street securities dealers such as GOLDMAN SACHS and SALOMON BROTHERS because the firm remained a traditional underwriter and was slow or neglectful in adapting to newer trends in the investment banking business, such as sales and trading of securities. Despite the omission, the firm always maintained a presence in the top 10 rankings of underwriting and mergers and acquisition advisers. It began to develop as a full-service investment bank in the 1970s, when it finally added institutional securities sales to its services, followed by investment management and brokerage.

In 1997, the firm merged with Dean Witter & Co. to form Morgan Stanley Dean Witter, although the name reverted to Morgan Stanley in 2001. Through the merger it became more of a full-service financial firm after the expansion during the bull market of the 1990s, while earlier it had been content to be a deal maker primarily in securities underwriting and mergers and acquisitions. After the merger, it added a large retail sales distribution network by acquiring all the Dean Witter branches and brokers.

In 2003, it was one of 10 Wall Street firms involved in a large settlement with federal and state regulators over investment banking practices during the 1990s bull market. It paid a multimillion-dollar fine without admitting guilt.

See also American Telephone & Telegraph Co.; International Business Machines.

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Morris, Robert (1734–1806) *businessman and financier* Born in Liverpool, England, Morris came to the American colonies while still an infant, and his family settled in Oxford, Maryland, on Chesapeake Bay. He later moved to Philadelphia and, after attending school for only a short time, joined a firm of shipping merchants. In 1754, he was made a partner of the firm at age 20. He was responsible for exporting American commodities and importing British manufactured goods. Becoming very successful, he became one of Philadelphia's best-known businessmen.

In 1765, he joined a committee to resist the Stamp Act. At the beginning of the Revolutionary War, he was elected to the Continental Congress and served on a secret committee charged with finding ways to raise money to fight the war. Between 1775 and 1777, Morris's firm made more than \$800,000 in profit by supplying the army with goods needed to fight the war. He came under considerable criticism for his efforts.

Representing Pennsylvania, Morris was one of the signers of the Declaration of Independence after initially opposing it. During the Revolution, he served as superintendent of finance. After the Continental currency collapsed in 1780, Morris's leadership in finance became crucial to the success of the colonies. Since the Continental Congress did not possess the ability to tax, Morris needed to devise a system of raising money under extremely limited circumstances. He developed a system called "specifics," whereby states that could not afford to contribute money to the war effort could otherwise contribute food, cloth, or any other sort of commodity that could be used by the Continental army. Following upon that success, he began to float public loans and raised \$63 million to support the army. Still short of funds, he then turned to borrowing from foreign countries and again was successful,

borrowing \$7.8 million from France, Holland, and Spain.

After assuming the superintendent of finance job, Morris urged that a bank be established to handle government finances. In 1782, the Bank of North America was established with capital of \$10 million. The capital came mostly from private hands, although the government did subscribe to \$200,000. The government became its first borrower.

Morris was also a land speculator and used the North American Land Company as a vehicle for buying and selling millions of acres of land, mainly in New York State. He became overextended and lost most of his holdings, landing in debtor's prison between 1798 and 1801. He was released when a federal bankruptcy law was passed. He died five years later, bankrupt and supported by his wife at the time of his death.

Morris is also remembered as being a prolific correspondent. Hundreds of letters that he wrote to many contemporaries in the preindependence era and during the Revolutionary War form a valuable picture of the period.

See also DUER, WILLIAM; HAMILTON, ALEXANDER.

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Morse, Samuel F. B. (1791–1872) *inventor and artist* Born in Charlestown, Massachusetts, Morse graduated from Yale in 1810 and went to London to study art a year later. He returned to the United States in 1815, hoping to pursue a career as an artist specializing in historical painting. In order to earn a living, he turned to portraiture and became quite successful, painting portraits of President James Monroe and Eli Whitney, among others. In 1826, Morse and others founded the National Academy of Design, and he became its first president. He later was appointed professor of art at the University of the City of New York (today New York University). He also became involved with a native political movement opposing immigration, Roman Catholicism, and the abolitionist movement. But his earlier studies at Yale would lead to his greatest success as an inventor rather than an artist.

Morse had studied the new phenomenon of electricity while in college and in the late 1820s again began studying the medium, this time exploring the possibility of transmitting data through electricity. He began experimenting with the TELEGRAPH in 1836 with a university colleague, Leonard Gale. They improved upon a design by another academic, Joseph Henry of Princeton University, and introduced the electromagnetic telegraph in 1837. He obtained a patent for the invention in 1840 and two years later received a congressional grant to build a line between Washington and Baltimore. In 1844, he demonstrated the device successfully by tapping out the message "What hath God wrought" over the wire.

After a series of legal suits over the origin of the system, Morse finally enjoyed success, and the telegraph became the standard electrical communications device. It became the first international means for the electrical transmission of messages and information when Cyrus FIELD finally succeeded in laying a transatlantic cable between North America and Britain in 1858.

Morse also developed the Morse Code, the standard system of dots and dashes used to send messages over the telegraph. The device and the code revolutionized communications prior to the invention of the telephone by Alexander Graham BELL and helped modernize the stock exchanges, enabling them to become more national in their coverage and price reporting than had been the case to date. Although Morse is remembered chiefly for his inventions, he also ranks as a substantial American artist of his period.

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motion picture industry The motion picture industry is the crown jewel of the multibilliondollar entertainment business. Although its annual box-office take of approximately \$13 billion is easily surpassed by the revenues of the U.S. TELEVISION INDUSTRY, the film business is perhaps more important both for its cultural impact and for its position as a springboard for other products. For example, the Sunday evening news regularly reports the weekend box-office totals of new film releases. The annual Oscar ceremony is a global media event second only to the Super Bowl in sports. A film's box-office take is still the most reliable indicator of its value in the home video and broadcast markets. And each year, films serve as the pegs on which to hang thousands of toys, T-shirts, posters, paperbacks, comic books, soundtrack albums, and video games. In most instances, this tie-in merchandise would have little or no value to consumers without the release of a film to support it.

Early film technology had its roots in existing apparatuses used in scientific investigation and in forms of visual amusement. Most historians point to the serial photography experiments of Eadweard Muybridge and Etienne-Jules Marey as important precursors to the first motion picture cameras and projectors. Moreover, while the invention of movies was spurred by the ongoing development of technology for still photography, many other forms of visual entertainment, such as zoetropes, magic lanterns, stereopticons, phantasmagoria shows, and illustrated lectures, had a lasting and dynamic influence on the shape taken by the early film business.

Working in the Edison laboratory, W. K. L. Dickson became the foremost American inventor of early film technology. Although prototypes of the basic equipment were developed throughout the early 1890s, the commercial film industry proper might be said to have begun with the first public demonstration of Thomas EDISON's kinetoscope in 1893 and the Holland Brothers' opening of the first kinetoscope parlor about a year later. Motion picture projectors were developed in France, England, Germany, and the United States starting in 1895, the same year that the Lumiere brothers' cinématographe-the first commercially successful projector-debuted at the Grand Café in Paris. Edison's company entered the field of film projection in 1896 with the Vitascope, a machine that simply refined aspects of Thomas Armat and Francis Jenkins's phantoscope, which had been publicly demonstrated a few months earlier.

Many of the first film programs were seen in vaudeville houses. Early exhibitors often organized several short films into a larger grouping that was varied in terms of genre and subject. Traveling showmen, such as Lyman Howe, also played an important role in bringing film to the public by operating as part of carnivals, circuses, scientific expositions, and the illustrated lecture circuit. Nickelodeons-storefront theaters specializing in motion pictures-became the dominant sites for film exhibition by 1905. The typical nickelodeon seated between 100 and 200 people and offered anywhere from 10 to 60 shows each day. With an admission price of 5 to 10 cents, the average nickelodeon earned several hundred dollars per day in box-office receipts.

Early film production was highly entrepreneurial, with equipment manufacturers and traveling showmen serving as the most important producers. Not surprisingly, Edison's company led the field, followed by Vitagraph, Selig, and Lubin. By 1903, Edison's chief rival was Biograph,



Thomas Edison (right) and George Eastman with motion picture camera, ca. 1925 (LIBRARY OF CONGRESS)

a company founded by his former employee W. K. L. Dickson. The two companies engaged in a series of copyright and patent disputes throughout the 1900s that eventually ended with the formation of the Motion Picture Patents Company in 1908. The MPPC was established as a patent pool, but the effects of its formation were more far reaching as it established royalty rates, licensing arrangements, and guidelines for distribution and exhibition. In principle, the MPPC tried to limit the production and distribution of motion pictures to Edison, Biograph, and eight other licensees collectively known as "the Trust." Although initially successful, the MPPC foundered due its failure to invest in film exhibition and its resistance to the feature films being produced or imported by independent companies. Already on the decline, the coup de grace for the MPPC came in 1915 with the resolution of a government antitrust suit against the company. While its existence was brief, the MPPC established the contours of the industry's oligopoly structure and stabilized the business through the use of copyrighted technology as a major barrier to entry.

During the 1910s, the film industry shifted its main production base from New York to Holly-

wood, then a relatively small town made up of retired midwesterners. Hollywood offered a warm climate year round and a varied topography that was especially suited to the production of westerns, the preeminent genre of the period. With the ascendance of the studio system in the next decade, Hollywood became virtually synonymous with a particular style and mode of production in American filmmaking.

The rise of the studio system was aided by the emergence of two parallel trends: the development of the continuity script and the movie star. Often credited to director Thomas Ince, the continuity script functioned as a written template for motion picture production that enabled directors and producers to efficiently plan a film's budget and manage its shooting schedule. Similarly, the movie star's emergence as a cultural phenomenon in the mid-1910s proved to be a major economic boon to the industry, although film companies had been advertising particular performers as early as 1909. As something that drew audiences to particular films, stars helped to stabilize demand for motion pictures and served as a form of product differentiation that afforded certain companies an edge over their competitors.

In 1919, Paramount embarked on an aggressive program of theater acquisition, becoming the industry's first vertically integrated company and encouraging several others to follow suit. The studios' ownership of theaters proved to be a key to their domination of the industry from 1920 to 1950. While the studios owned less than 20 percent of the total number of theaters in the United States, they owned the vast majority of first-run theaters and consequently received more than 70 percent of all film rentals. These studio-owned theaters were protected by a complicated run-zone-clearance system that categorized theaters for all cities and towns in the United States. After a film had completed its first run, a clearance period of one to four weeks would pass before it entered a second-run house located within the same geographic zone. After the second run, a comparable clearance would

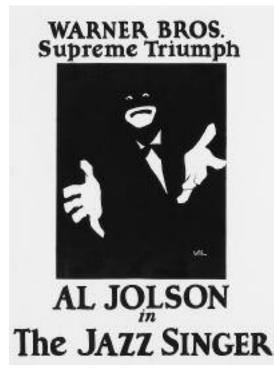
ensue before the third run, and so on. This system maximized profits for the studios by encouraging consumers to pay top dollar to see the films in their first-run houses rather than wait for subsequent runs in nonaffiliated theaters. It also created a barrier to entry for independent producers, who were limited to showing their films in nonaffiliated theaters.

In addition to their investments in exhibition, the major studios also benefited from their highly rationalized system of production. With a well-established corporate hierarchy organized around the specialization and division of labor, the studios were structured around individual production units that were serviced by specific departments devoted to make-up, costume, set design, music, sound, editing, film processing, and even food preparation. Because of this complex division of labor, the studios were often described as "dream factories," and their productions compared to that of the assembly line.

During the 1920s, both the Warner Bros. and RKO used their investment in sound technologies to become major players in the industry's oligopoly structure. Following an aggressive program of expansion, Warners' innovation in sound was virtually assured success both because of the initial popularity of The Jazz Singer (1927) and because of Warners' licensing agreements with other studios. RKO, on the other hand, was founded in 1928 as a result of RCA's failed attempt to make its Photophone sound equipment the industry standard. Having lost out to Warner Bros., RCA pursued the European market and created its own vertically integrated corporation as a way of amortizing the costs of Photophone's research and development. With its ties to RCA, RKO was part of America's largest entertainment empire, with links to radio, music publishing, and recorded music enterprises.

By 1930, the eight majors consisted of the Big Five—Paramount, Fox, MGM, Warner Bros., and RKO—and the Little Three—Universal, Columbia, and United Artists. The former were all vertically integrated companies, while the latter functioned just as producers and distributors. The onset of the Great Depression threatened the industry's fortunes as many studios went into receivership. The industry rapidly recovered, however, partly due to the favorable treatment it received from the NATIONAL RECOVERY ADMINIS-TRATION. The ironically titled "Code of Fair Competition for the Motion Picture Industry" was enacted in November of 1933. Through it, the industry received government sanction for several collusive trade practices, including admission price discrimination; the use of runs, zones, and clearances; and block booking, a practice that tied the sale of a particularly attractive upcoming release to one or more other titles much less in demand.

While the Depression posed one set of problems, a more serious threat to the industry emerged in the proliferation of state and local



Poster for The Jazz Singer (LIBRARY OF CONGRESS)

censorship boards as well as pressure groups concerned about the regulation of film content. Fearing government intervention, the industry adopted the Motion Picture Production Code, a set of policies that established guidelines and prohibited certain types of objectionable representations. Initially established in 1930, the Production Code Administration was strengthened and reorganized in 1934. Although many filmmakers found ways of getting around its proscriptions, the Code banned profanity as well as explicit representations of sex and violence.

During World War II, Hollywood actively participated in the war effort through its work with the Office of War Information. Many filmmakers made documentaries and propaganda shorts about the war, while others produced combat and "homefront" features that celebrated the values and fighting spirit of America and its Allies. After the war, however, Hollywood became an important target of government investigation and regulation. The House Un-American Activities Committee (HUAC) conducted hearings on communist influence in the motion picture business during the late 1940s and early 1950s. The hearings resulted in the blacklisting of more than 200 people due to past political affiliations. A government ANTITRUST suit posed more serious legal problems. The suit began in 1938 but was not decided until December of 1946. The resulting decree radically altered the industry by prohibiting several collusive trade practices, such as block booking, the fixing of admission prices, and the maintenance of clearance periods between a film's various runs. More importantly, after an appeal by the eight majors, the Supreme Court also ordered the divorce of the studios' theater circuits.

Facing serious changes in industry structure, declining box-office revenues, suburbanization, and competition from television, the studios retrenched in the 1950s by shrinking their production schedules and selling off their backlots. By restricting their supply, the studios hoped to increase consumer demand. The 1950s were also a period of enormous technological ferment as the industry tried to draw people back to theaters with films that, in Cole Porter's words, featured "Technicolor, CinemaScope, and Stereophonic Sound." Even 3-D and Smell-O-Vision enjoyed brief moments in the sun as novelties, although they had little lasting impact on the business as a whole.

Over time, the industry developed several strategies intended to spread its financial risks. For one thing, studios increasingly focused on distribution, ceding much of the actual labor of production to independent companies. In a typical deal, the majors offered financing and distribution to independent producers in exchange for a distribution fee and approval over the film's budget, script, director, and cast. For their part, independent producers were given more freedom and the opportunity for profit participation, but only after all of the negative production costs had been recouped. Besides the shift toward deals with independent producers, the studios also attempted to spread their risk through strategies of horizontal integration. Throughout the 1950s, the majors sought to diversify their holdings by acquiring or starting up record subsidiaries, music publishing houses, radio stations, and television production companies. For film companies, such diversification spread the risk by using other divisions' revenues to offset periods of weak performance at the box office.

During the 1960s and 1970s, many of the majors were swallowed up by larger CONGLOMER-ATES. Transamerica's ownership of United Artists, Gulf & Western's control over Paramount, and Coca-Cola's later proprietorship of Columbia Pictures were symptomatic of this shift toward conglomerate structures. The 1960s also saw the dissolution of the Production Code Administration. In 1968, only two years after it was revised, the Production Code was replaced by a rating system, which introduced the now familiar designations of "G," "PG," "R," "X," and later "PG-13" and "NC-17."

Since the 1970s, the production and marketing of blockbusters has become a focal point for the

industry. Following in the footsteps of such films as *Jaws* (1975), *Star Wars* (1977), and *Batman* (1989), these blockbusters tend to be expensive, special effects–laden spectacles that strive for almost immediate payoffs at the box office. With extremely wide release patterns, these films are typically released during peak seasons (summer and Christmas) and depend heavily on huge opening weekends and foreign grosses for their success. Nowadays, it is not uncommon to see an "event film" playing on at least three or four different screens at the local multiplex.

The era of the elephantine conglomerate is also over, with most film distributors operating as part of smaller but still diversified media corporations. When compared with the first emergence of the studio system in the 1920s, many of the players are the same (Fox, Paramount, Warner Bros., Columbia, Universal), but they now function as parts of a larger media oligopoly comprised of companies such as News Corporation, Viacom, Sony, Vivendi, AOL/Time Warner, and Disney/ABC. During the 1980s and 1990s, film companies sought to benefit from their place within media conglomerates by exploiting "synergies" in the cross-marketing of products across a number of different divisions. With strong ties between film producers and distributors, television networks, cable channels, Internet providers, book publishers, video distributors, and music companies, a single successful project could, in theory, drive activities in several different divisions of the corporation.

Still, while the oligopoly structure of the industry remains intact, it has bifurcated into two interrelated tiers of companies. While the majors constitute one tier, the other is made up of boutique distributors, such as Miramax, Fox Searchlight, and Sony Pictures Classics, that have parent corporations among the majors but operate with independent management and marketing teams. Specializing in smaller, more "cutting edge" fare, these companies serve an important niche market, and the films they distribute serve both as a training ground for new talent and as a site of artistic innovation. Much of the industry's prestige is bound up with these "indie" films since they sometimes garner great word of mouth, rave reviews, and many year-end critics' awards.

With their glamor and global reach, movies are America's most important cultural export. Yet many film critics and scholars are wary of the ramifications associated with a more globalized media culture. With its almost total domination of film markets around the world, the economic power of Hollywood is a chief cause of concern. It is ironic that an industry so invested in dramatizing the tales of underdogs plays Goliath to hundreds of Davids around the globe, small industries making a handful of films each year and struggling to show them within their own markets. In this situation, the losers surely are global media consumers, who must seek out other outlets for their indigenous cultures' cinematic heritage and traditions.

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Jeff Smith

muckrakers The term given to journalists and writers of the 19th and early 20th centuries who attempted to expose the shortcomings and foibles of big business. The term was originally used by Theodore Roosevelt, who borrowed it from English poet John Bunyan.

The muckraking tradition is as old as American politics but grew significantly after the Civil War. It is usually understood as a response to the rapid expansion of the railways and of industrialization that transformed the United States into an industrial society. Later, it became identified with the Progressives, who advocated better working conditions, corporate accountability, and political activism. The muckrakers generally came from the ranks of liberal journalists and essayists, many of whom established significant reputations on the basis of their exposes.

The first significant piece of muckraking was published in 1871, when Charles Francis Adams and Henry Adams published *The History of Erie and Other Essays*, outlining the foibles of Jay GOULD and Jim FISK at the ERIE RAILROAD and Gould's attempted gold corner in 1869. The book came at a time when railroad regulation had become a popular public issue and helped contribute to Gould's notorious reputation.

Muckrakers generally were considered hostile to big business, but their tone and purposes varied. The essays and books that followed the development of such industries as John D. Rockefeller's Standard Oil Co., described in painstaking detail by Ida Tarbell in History of the Standard Oil Company (1904), tended to be straightforward corporate histories that showed the techniques and methods employed by industrialists in building their empires. Others were more general, such as William Demarest Lloyd's Wealth and Commonwealth, a combination of a discourse on society's ills and a general diatribe against the evils of big business. Still others, such as Gustavus Myers's A History of the Great American Fortunes, showed in great detail how the great industrialists accumulated their fortunes while flaunting public convention. One of the last of this genre, Matthew Josephson's *The Robber Barons*, was published in 1934. Other notable writers included Lincoln Steffens and Edwin Markham.

Not all muckraking literature was nonfiction. Upton Sinclair's *The Jungle* exposed poor sanitary and working conditions, while Frank Norris's *The Octopus* described the inadequacies of large industrial companies. Sinclair Lewis's *Babbitt* painted an avaricious picture of businessmen in general, while Norris's *The Pit* depicted commodity traders in Chicago in a less-than-sympathetic light. However, when taken as a whole, muckraking literature was a powerful force that captured the public imagination for almost 70 years before evolving into a more formally investigative journalism.

See also ROBBER BARONS.

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multinational corporation A business enterprise having substantial operations in several countries. Rather than simply sell its goods or services from home, acting purely as an exporter, multinationals set up manufacturing and distribution facilities in other countries in order to have greater access to the foreign market. Multinationals accomplish this by making a direct investment in other countries, representing an outflow of capital from their home country into long-term investments abroad.

Traditionally, companies have sought foreign facilities in order to seek new overseas markets, find commodities unavailable at home, find less expensive labor, or seek foreign expertise unavailable in their domestic market. By seeking to invest directly in a foreign country or countries, companies choosing this route often find themselves exposed to a host of challenges and problems not found at home, including a wide range of political, socioeconomic, and trade problems.

Companies became multinational slowly, beginning in the 19th century when some developed a technological superiority for their products and discovered a substantial foreign demand for them. One of the first American companies to develop overseas operations was the SINGER SEWING CO., which established manufacturing facilities in Scotland in the 19th century. Most of the current American multinationals date from the late 1940s, after World War II, when companies moved their operations abroad. Since then, many of the Fortune 500 companies have become multinational in one form or other, with the largest manufacturers such as GENERAL MOTORS and Ford leading the way. Later they were joined by service-oriented companies such as Citigroup and the BANK OF AMERICA. Many CONGLOMERATES have also become multinational by purchasing overseas subsidiaries or making substantial direct FOREIGN INVESTMENTS.

In the 21st century, the term *multinational enterprise* has become more widely used. The term implies a broad range of activities and also includes multinationals that may not necessarily be corporate, such as international government agencies. The term *enterprise* also suggests that the relationships between the parent companies and their overseas operations may be changing as well, with joint ventures, shared facilities, and minority investment becoming more and more popular as foreign direct investment becomes broader and more capital intensive.

Multinationals, and especially those from the United States, have been subject to widespread criticism as being meddlers in other countries' monetary and foreign policies and having an undue political influence in many developing countries. Labor unions have contended that moving operations offshore increases unemployment at home, a criticism that particularly was heard when the NAFTA was passed. Other complaints about the activities of multinationals have included their ability to avoid INCOME TAX through such techniques as transfer pricing and their ability to exploit cheap labor or resources and then divest in the host country quickly afterward.

Despite the criticisms, multinationals have led the way toward more uniformity in the world economy and led the march toward globalization while bearing the brunt of criticism from those opposed to the trend.

See also CORPORATIONS; FOREIGN INVESTMENT.

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mutual funds An investment vehicle developed in the United States beginning in the 1920s. The idea was borrowed from the London financial market, where unit trusts had been packaged and sold for a number of years. In a traditional mutual fund, investors buy shares in an investment company, which invests in a wide array of stocks or other financial instruments.

The packager of the mutual fund diversifies the holdings of the company, and the individual's investment is thus diversified in the same manner. For the share price of the fund, the small investor is able to mitigate risk for a relatively small investment—something impossible to do otherwise. When mutual funds were first packaged and sold in the 1920s, originally as unit trusts, many were not fully diversified but invested in other mutual funds or companies in which the manager had a special interest. When the 1929 crash occurred, many became almost worthless after originally commanding a high share price. As a result, they became the subject of a congressional investigation in 1933 looking into the causes of the crash and the behavior of brokers and investment bankers.

As a result of the investigation, Congress passed the Investment Advisors Act in 1940, requiring investment companies selling funds to the public to follow the guidelines for public offerings outlined in the SECURITIES ACT OF 1933. The funds' rate of growth remained relatively slow until the 1950s, when they began to pick up during the bull market of the 1950s and 1960s. Their next and greatest period of growth occurred in the 1980s and 1990s, after Congress passed legislation creating self-directed retirement plans and allowing greater portability among the plans.

By the end of the 1990s, there were more mutual funds in existence (approximately 8,000) than there were common stocks listed on the stock exchanges. As a result, the funds' behavior in the stock market had a great effect upon individual stock prices and the market indexes as well. After the bear market of 2001, a major scandal erupted in the industry when it was discovered that many mutual funds were allowing other institutional investors to use their facilities for trading after the markets were officially closed, in clear violation of rules established for their own behavior.

A more recent phenomenon has been the growth of a related fund, the hedge fund. Reserved for wealthy and institutional investors, hedge funds are not yet required to be registered with the SEC. As a result, many of their activities and portfolio compositions are not made public. Many of the hedge funds use the facilities of mutual fund companies to trade their own portfolios. Although their investment strategies can be markedly different from those of a traditional mutual fund, the two are related conceptually and have similar appeals although to different investors.

See also STOCK MARKETS.

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ENCYCLOPEDIA OF American Business History

Volume II

CHARLES R. GEISST



Encyclopedia of American Business History

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N

Nader, Ralph (1934–) consumer advocate and political candidate Ralph Nader was born in Winsted, Connecticut, on February 27, 1934, a son of Lebanese immigrants. An exceptional student, he graduated from Princeton University with honors in 1955 and acquired his law degree from Harvard Law School three years later. Nader then commenced a successful practice in Hartford, specializing in automobile accidents, and also taught at the University of Hartford. In the course of litigation, Nader became convinced that traffic accidents were due more to faulty engineering than human error. He carefully collected statistics and published his findings in numerous magazine articles. By 1964, this activity brought him to the attention of the U.S. Department of Labor, which appointed him to a landmark study of auto safety in America. The following year he published his famous tome, Unsafe at Any Speed, which excoriated the automobile industry for shoddy safety concerns. In retaliation, Nader's personal life fell under scrutiny by private detectives hired by General Motors president James M. Roche. When the truth emerged, Roche publicly recanted, and Nader became an instant consumer celebrity. He

subsequently expanded his inquiries to mines, oil and gas pipelines, and environmental practices, with a view toward tarring corporate America as indifferent to public safety. No mere radical, Nader was thorough and precise in collecting data, and exacting in his presentations. In 1967, his revealing investigation of the MEAT PACKING INDUSTRY resulted in the new Wholesome Meat Act of that year.

The thrust of Nader's evolving political thesis was that American business was too obsessed with profit to give consumer safety more than lip service. In time he extended similar accusations against the government as a silent and willing partner in these transgressions. His message resonated strongly with the public, and legislators were pressured to invoke new and stricter health and safety laws. Throughout the decade of the 1970s, Nader expanded his litany of complaints and his host of public supporters to investigate pesticides, food additives, color televisions, and X-ray machines. With few exceptions his endeavors resulted in a bevy of new laws to protect the average citizen. In time he acquired considerable renown and controversy as the nation's

most outspoken consumer advocate and a relentless proponent of corporate accountability. He also surrounded himself with a new generation of consumer activists, Nader's Raiders, to keep the pressure upon elected officials. But having failed to stop the NORTH AMERICAN FREE TRADE AGREEMENT of 1993, which he felt imperiled both American jobs and consumer safety, Nader decided to take his crusade to the next level by entering politics.

While closely allied to progressive causes, Nader was no friend to the Democratic Party, and he accused it of having sold out to corporate interests, like the Republicans. To that end he received the Green Party's nomination for the presidency in 1996; he won considerable public



Ralph Nader (GETTY IMAGES)

sympathy but only 700,000 votes. In fact, neither major party ever took him as a serious contender. However, circumstances subsequently forced Nader into the headlines during the 2000 presidential election between Democratic vice president Al Gore and Republican challenger George W. Bush. When polls predicted an extremely close race, Democrats pleaded with Nader to withdraw his candidacy in competitive states lest he siphon off badly needed votes from Gore. Nader defiantly and unapologetically refused, declaring that the two parties were so close philosophically it did not matter which side won-consumers were sure to lose. In November 2000, the Green Party amassed 2.6 percent of votes cast. However, this included a tally of more than 90,000 votes at Gore's expense in Florida, enough to tip the balance to the Republicans and assure Bush's victory. Nader, formerly the darling of left-wing causes, was now publically lambasted as a spoiler. But the former consumer crusader shrugged off such complaints and continued railing against the government's alleged capitulation to corporate America. His legacy as an advocate is secure, but his future with the Green Party-still roiled over its indirect role in Bush's election-remains less certain. "You have to keep up the pressure, even if you lose," Nader declared. "The essence of the citizen's movement is persistence."

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John C. Fredriksen

National Association of Securities Dealers

(NASD) A professional trade group of securities dealers, originally organized during the NEW DEAL. It is a self-regulating body that oversees the

activities of the over-the-counter bond markets and also conducts the NASDAQ stock market, short for National Association of Securities Dealers Automated Quotations system.

The predecessor of the NASD originally was formed in 1933 as a response to the New Deal's call for professional associations to be formed in order to fight the Depression. The securities industry responded quickly to the idea that trade groups could help pull their economic muscle together and fight the economic slowdown, an idea originally charged to the NATIONAL RECOVERY ADMINISTRATION, an agency created by the National Industrial Recovery Act. Even after the NIRA was declared unconstitutional by the Supreme Court in 1935, the investment banking industry favored the idea of a national trade group that would oversee what at the time was known as the over-the-counter, or unlisted, securities market-the place where stocks not listed on one of the exchanges traded. Since the National Industrial Recovery Act encouraged trade group associations, the Investment Bankers' Conference organized itself as a competitor of the older Investment Bankers' Association.

Congress obliged by passing the Maloney Act in 1937, which created the NASD. Introduced by Senator Francis T. Maloney, a Democrat from Connecticut, the act was an amendment to the Securities Act of 1934, allowing securities dealers to form national groups to better regulate themselves and arrange codes of conduct and trading. The Maloney Act provided for organization and basic trading rules to apply to the vast membership of what became the NASD. More than 6,000 brokers and securities houses joined, and the organization was originally responsible for overseeing trading in more than 3,000 securities. The group remained self-regulating but was still only a trade group as opposed to the Securities and Exchange Commission, which had the power of law behind it.

The NASD expanded its authority and reputation considerably by organizing the over-thecounter market into the NASDAQ in 1972.The market was computerized, with dealers linked through a central computer over which they could enter quotations and trade securities among themselves and with the public. Once operating well, the new market drew many new listings to the NASDAQ marketplace since more efficient trading of stocks could be ensured.

In 1998, the NASDAQ announced a merger with the AMERICAN STOCK EXCHANGE in order to compete for business with the NEW YORK STOCK EXCHANGE. NASDAQ's trading system of using market makers linked by computer is in direct competition with that of the NYSE, which still employs the specialist system for selling securities on the exchange floor.

The market suffered when 30 member firms were fined more than \$1 billion in 1997 for manipulating prices and maintaining spreads between bid and offer prices favorable to market makers, not customers. As a result, the market announced that it was shifting to quoting prices in decimals rather than fractions in an attempt to provide cleaner prices for the public. The market shared in the success of the market rise in the later 1990s. It rose dramatically during the 1990s, and its major index rose to over 5,000 before falling 80 percent when the overall market bubble burst in 2000–01.

See also STOCK MARKETS.

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National Bank Act (1864) Legislation passed during the Civil War designed to provide some structure to U.S. banking and currency. The law created a national currency for the country, making it more difficult for state banks to issue their own money, as had been the case in the 19th century. National banks were created that became note issuers, replacing the state banks. The law was, in fact, a currency act, although it did create a new class of bank.

The act also created the office of comptroller of the currency, which became responsible for overseeing banks that registered with it, allowing them to use the name *national bank*. The banks had capital requirements and other regulations that they had to observe in order to meet the new designation. The new national banks took over the function of issuing currency under the auspices of the comptroller. They were also required to hold one-third of their assets in TREASURY BONDS, which had to be deposited with the comptroller, who in turn issued national banknotes, using the bonds as collateral.

The act helped the United States consolidate a sloppy currency situation and helped reduce fraud in the old payments system. In the past, when the state banks issued money, a great deal of fraud occurred, and many merchant banks made a specialty of helping customers detect counterfeit notes. Detecting bogus BANKNOTES was an art prior to the Civil War. After 1864, the situation improved dramatically since the note issuance process now was more uniform and had a central regulator for the first time.

But the act fell far short of developing a central bank for the United States because there was still no lender of last resort in the country. The actual supply of money could become less than what was needed, especially if the economy required a dose of extra money and credit. This would be referred to as inelasticity in the money supply, and it became a political issue before World War I.

Between 1865 and 1913, the major New York banks usually decided among themselves the proper course of remedial action to be taken when the stock market collapsed or a large bank failed. But for all the shortcomings, the comptroller of the currency remained the only regulator of banking until the FEDERAL RESERVE was created in 1913.

See also GREENBACKS; MCFADDEN ACT.

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National Labor Relations Act (NLRA) A major, revolutionary labor act passed during the NEW DEAL and signed into law by President Roosevelt in 1935. The NLRA's major sponsor was Senator Robert F. Wagner of New York. The law, also known as the Wagner Act, was predicated on the principle that in an industrial democracy workers must be allowed to organize and bargain collectively with management through their own representatives. In the year following its passage, the act became known as the Magna Carta of organized labor.

The major difference between the atmosphere the act created and that which preceded it was significant. Labor and management were now to bargain with each other in an atmosphere in which the fundamental rights of labor were recognized. Although organized labor already was well developed in the United States, employers often disciplined and blacklisted union members, causing a great deal of industrial strife in the early 1930s. In order to offset these problems and discourage even more problems in the future, the act was passed during the New Deal.

The NLRA guaranteed workers the right to join unions without fear of reprisal or dismissal. The National Labor Relations Board (NLRB) was created to ensure that the provisions of the act were carried out. It has three members who are charged with interpreting the act. The NLRB is an independent judicial administrative agency that has the power to enforce its own rulings. After the TAFT-HARTLEY ACT was passed in 1947, the NLRB was overshadowed to an extent, limiting its ability to interpret the Wagner Act.

The law nevertheless gave employees the right to organize, to engage in strikes when nec-

essary, and to bargain collectively. Employees were also given the right to participate in the negotiation of their wages, working conditions, and number of hours worked per week. After the act was passed, many of the large industries became unionized and recognized the collective needs and demands of their workforces. Successful campaigns were launched in the automobile, steel, electrical, manufacturing, and rubber industries to sign workers up in unions. As a result, by 1945 union membership reached 35 percent of the workforce.

The Wagner Act was similar in tone to the National Industrial Recovery Act of 1933, which later was declared unconstitutional. However, the constitutionality of the Wagner Act was upheld in 1937, and it has become the cornerstone of labor relations in the United States along with the Taft-Hartley Act.

See also Lewis, John L.; Meany, George; National Recovery Administration.

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National Negro Business League (NNBL) A professional and political organization that was first convened in 1900 at the Tuskegee Institute by Booker T. Washington (1856–1915). Next to Washington's educational endeavors and role as an African-American political boss, the NNBL was arguably the most important contribution the Tuskegee principal made toward institutional and organizational self-help activities in the black community.

From the NNBL's inaugural meeting of more than 300 aspiring and established African-American business men and women, the organization,

during Washington's lifetime, held annual gatherings in northern and southern American cities to allow black entrepreneurs to network and share success stories. About 3,000 like-minded black capitalists attended the 1915 anniversary Boston gathering, representing 600 chapters from 36 American states and West Africa. On this occasion, the NNBL claimed major success in stimulating black capitalism in America as it cited the growth in African-American businesses from 1900 to 1915: banks from two to 51; drugstores, 250 to 697; mortuaries, 450 to 1,000; wholesale companies, 149 to 240; and retail outlets, 10,000 to 25,000. The NNBL, moreover, spawned many other significant business entities and commercial associations such as the National Bankers Association, the National Association of Negro Insurance Companies, the National Association of Funeral Directors, and the National Association of Real Estate Dealers, all of which met in tandem with annual NNBL meetings.

Booker T. Washington and his followers continued to sustain the organization, despite using it for political purposes and relying on both Andrew CARNEGIE and Julius Rosenwald for support in order to keep the NNBL afloat. With Washington's death, the next 85 years were difficult ones for the NNBL as internecine leadership struggles for control of the organization extended into the 1920s; hard times came during the Great Depression; and the NNBL never quite consummated the revivalism begun in the 1950s under the leadership of Ohio businessman Horace Sudduth, Tennessee physician Dr. James E. Walker, and North Carolina insurance magnate C. C. Spaulding. A brief moment of optimism came in the 1960s as the organization changed its name to the National Business League and, from its headquarters in Washington, D.C., under the leadership of businessman Berkeley Graham Burrell, developed a "Project Outreach" to provide management and technical assistance to African Americans and other minority business firms and companies. Burrell received support from the Nixon administration, the Department of Commerce's Office of Minority Business Enterprise, and the Office of Economic Opportunity.

The NNBL was unable to hold its centennial anniversary at the turn of the 21st century. One member explained the developmental problem as one of having "politicians trying to run a business organization." The remnants of this once important African-American business organization are evident today in many southern cities, and the NNBL is now quartered in New Orleans, Louisiana.

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National Recovery Administration (NRA) A federal agency created by the National Industrial Recovery Act of 1933 (NIRA). The agency was designed to combat the intense and destructive competition between American businesses and replace it with a consensual self-government of business and industry. The agency was modeled on the War Industries Board (WIB), an agency operating during World War I that had a similar mission.

The NRA was headed by General Hugh JOHN-SON, formerly a member of the War Industries Board. The NRA had as its symbol a blue eagle, and that became the nickname for the agency. The eagle decal was displayed on many business windows and became an unofficial symbol of the country's efforts to emerge from the Great Depression. Detractors referred to it as the "Roosevelt buzzard." As part of the NRA program, the Roosevelt administration suspended the antitrust laws for two years and authorized industry to form government-recognized trade organizations that would reduce internecine competition, devise codes of competition, and dictate fair labor practices. More than 500 codes were drawn up, although many were not adhered to. One positive by-product of the codes was the elimination of child labor.

Another organization, created by the securities industry under the guidelines, was known originally as the Investment Bankers Conference and today survives as the NATIONAL ASSOCIATION OF SECURITIES DEALERS after being formally established by the Maloney Act in 1937. The basic assumption made by the NRA was that competition between companies was actually hindering economic recovery during the Depression rather than helping, and antitrust laws were put in a state of suspension so that the new, larger trade organizations were not accused of breaking the laws. The suspension of the antitrust laws suggested to some that the NEW DEAL was attacking the basic structure of American business.

In May 1935, the NIRA was declared unconstitutional by the Supreme Court and with it the NRA as well. In the case of *Schecter Poultry Corporation v. United States*, the Supreme Court ruled that congressional authority had been usurped to the executive branch and that the law was unconstitutional as a result. Even severe economic conditions did not warrant the transfer of power to the presidency. The NRA was not reorganized and passed out of existence the same year. Although generally considered a failure, the NRA experience provided a foundation for other reforms and better-designed regulatory agencies during the years that followed.

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New Deal The name given to the first administration of Franklin D. Roosevelt, covering the period 1933–37. The term was used to suggest that legislation and social programs would be enacted to address the needs of working and middle-class citizens, not just those in upperincome brackets. It was first used in Roosevelt's nomination acceptance speech before the Democratic National Convention in 1932. Social and economic legislation was passed, especially before 1936, encompassing a wide spectrum of programs ranging from securities legislation to social security programs.

During the first 100 days of Roosevelt's administration, the White House proposed and Congress passed sweeping legislation concerning the financial markets and banks. The objective was to pass legislation that would end the Depression and help stimulate the economy while proscribing practices, especially in the securities business, that many believed were responsible for the economic slowdown. Among this legislation were the SECURITIES ACT OF 1933, the BANKING ACT OF 1933, the Agricultural Adjustment Act, and the National Industrial Recovery Act, all passed by June of 1933. The SECURITIES EXCHANGE ACT was passed in 1934, regulating stock exchanges for the first time. After the first round of legislation was complete, the second 100 days began, and Congress passed the National Labor Relations Act and the Social Security Act and created the WORKS PROGRESS ADMINISTRATION. All were designed to either regulate sectors of the economy or create jobs for the unemployed.

The legislation also created a myriad of new government agencies, all known by their initials. They ranged from the AAA (Agricultural Adjustment Agency) to the WPA (Works Progress Administration). They become known as the "alphabet agencies," and some eventually were dismantled. Others, like the Social Security Administration, became permanent. Others would follow, such as the FEDERAL NATIONAL MORTGAGE ASSOCIATION in 1938, during Roosevelt's second administration.

A serious blow was dealt to the New Deal when the National Industrial Recovery Act, passed in June 1933, was declared unconstitutional by the Supreme Court in 1935. The agency it created, the NATIONAL RECOVERY ADMINISTRA-TION (NRA), had been instituted to develop a code of fair practice for various businesses, which were voluntarily participating in the program. The companies participating in the process were writing codes of conduct for their respective businesses, including specific standards of quality, working hours, minimum wages, and price floors for goods they produced. When it was declared unconstitutional it was generally assumed that the NRA was benefiting business and that many businesses were in favor of it.

The AAA was declared unconstitutional in 1936, joining the NRA. After the Supreme Court packing controversy in 1937, only a few significant pieces of legislation were passed, including the Housing Act of 1937 and the Fair Labor Standards Act in 1938. Reform slowed when it became apparent that the Depression was continuing, especially when a severe RECESSION occurred in 1937.

While not successful in ending the Depression, the New Deal nevertheless provided a great deal of social legislation that became part of the bedrock of society, especially Social Security. Much of this legislation, when combined, is referred to as the "safety net" erected to prevent economic institutions and society in general from crashing again. It also helped establish a firmer hand of government in public affairs than had been the case previously, leading to more REGULATION in general. Much of the apparatus established by the New Deal became useful as World War II approached, and many government agencies began to direct their attention toward the war effort, especially the Reconstruction Finance Corporation, actually founded in 1932, that helped many companies finance and build facilities to aid the war effort.

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newspaper industry Over the course of three centuries, the newspaper industry has served two disparate—and sometimes conflicting—roles: It has been a bulwark of American democracy and grown into the \$55 billion industry that it is today. The tension between these two roles has given rise to a key question that has dominated newspaper publishing since the colonial era: How can the industry balance its civic responsibilities as a quasi-public institution in a democracy with the profit-making motives of a business enterprise?

Since the days of the Massachusetts Bay colony, the nascent newspaper business was at the center of the struggle over the political and religious character of the colonies. Benjamin Harris, who had established a bookstore and coffeehouse in Boston, printed the first colonial newspaper, *Publick Occurrences both Forreign and Domestick*, in 1690. The paper, which was not licensed by the colonial authorities, was shut down after just one issue. Two items in particular had annoyed the authorities: one of them a reference to a sexual scandal in the French royal family, the other involving mistreatment of prisoners by Indian allies. Like *Publick Occurrences*, many of the earliest "newspapers" were little more than newsletters published by proprietors of coffeehouses and pubs, which became centers of political debate and eventually dissent—in colonial America.

The second colonial newspaper was published by John Campbell, the postmaster of Boston. Campbell, who launched Boston News-Letter in 1704, began a colonial tradition whereby the postmaster also served as publisher. The colonial post office was a center of news, with first access to European newspapers-much as it would be in small-town America for years to come. The postmaster enjoyed "francking privileges" and could send his newsletters throughout the colonies free of charge. He was also "a safe" choice as a publisher, since he owed his job to the colonial authorities. Moreover, the colonial government often awarded printing jobs to newspapers. Thus, Campbell submitted his paper, which was available only through subscription sales, for "precensorship" to the authorities.

By the 1720s, there were three competing newspapers in Boston. The best of these papers, *The New England Courant*, was published by James Franklin, whose brother Benjamin Franklin was an apprentice printer and the author of satirical essays under the pseudonym "Silence Dogood." The *Courant* was launched during a period of growing dissent—focused on religious, rather than political, freedom. James was jailed in 1722 for publishing a series of attacks on the government, which was led by Increase Mather and his son Cotton, leaving the publication of the paper to his teenage brother Benjamin. Silence Dogood wrote "an eloquent plea for freedom of the press."

The Franklins successfully resisted repeated efforts by the Mathers, themselves religious publishers, to censor their paper, thus effectively ending censorship in Massachusetts. Benjamin Franklin later bought the *Pennsylvania Gazette*.

By the 1720s, newspapers were being published in several major colonial cities, including Philadelphia and New York. It was in New York City that another major battle in the war for a free press was fought. In 1733, opponents of Governor William Cosby, one of the most corrupt administrators in the colonies, launched the New York Weekly Journal. When the paper attacked the local authorities and demanded a more representative government in New York, Cosby asked a grand jury to indict the Journal's editor, John Peter Zenger. Though the grand jury refused, Cosby had Zenger arrested and jailed. When Zenger came to trial in 1735, he was defended by Andrew Hamilton, a famous Philadelphia lawyer, who admitted that Zenger had published articles critical of the government-a crime under colonial law. But Hamilton argued that to be found guilty "the words themselves must be libelous-that is, false, scandalous, and seditious-or else we are not guilty." In an eloquent speech, Hamilton asserted the right for "the liberty-both of exposing and opposing arbitrary power . . . by speaking and writing truth."

The jury, which was composed of ordinary citizens, returned a verdict of not guilty. Although truth was not accepted as a defense in seditious libel cases until after the passage of the Sedition Act of 1798, Zenger's vindication demonstrated that the "average colonialist" was opposed to authoritarian government.

Eventually, the British authorities gave up trying to license newspapers, and by 1750, there were 14 weeklies in the six most populous colonies. Colonial papers, weeklies generally, were accepting advertising and had grown sufficiently in circulation to enrich a few publishers.

Colonial newspapers were radicalized by the Stamp Act of 1765, which imposed a tax on paper, a burden that fell particularly hard on newspaper publishers. While such taxes had long been levied on English papers, in the colonies the tax sparked calls of "taxation without representation." Although the Stamp Act was repealed a year later, by then most newspapers were committed to revolution. Newspapers were highly partisan during the prerevolutionary and postrevolutionary period and were generally more interested in commentary than in news. Isaiah Thomas, who became one of postrevolutionary America's greatest publishers, founded the *Massachusetts Spy* in an attempt to create one of the few moderate, non-partisan publications. Eventually, even the *Spy* went underground and became anti-British.

In the years after the Revolution, newspapers remained an important forum of debate, with most papers representing either a Federalist or a Republican point of view. The *Federalist Papers*, for example, were first published in newspapers. Another major debate between the Republicans and the Federalists centered on guarantees of individual rights, including freedom of the press, which the Republicans supported and the Federalists found "impracticable." Out of this struggle grew the Bill of Rights and the First Amendment, which states: "Congress shall make no law. . . . abridging the freedom of speech or of the press."

Freedom of the press—and its precise definition—has been debated since the passage of the Bill of Rights. On a number of different occasions, especially the passage of the Sedition Act in 1798 during the administration of Theodore Roosevelt, the government has sought to rein in the freedom of the press. The press also, especially in wartime, often has exercised self-censorship. Significantly, the concept of press freedom predated by decades the notions of "fairness" and "responsibility" that became canons of journalistic ethics only in the 20th century.

Until the late 18th century, most newspapers were read primarily by the educated elite; these early papers sold for as much as eight cents or for an annual subscription fee that was out of the reach of many ordinary Americans. The partisan press reached its peak during the presidency of Andrew Jackson, who was known for actively manipulating the press and rewarding sympathetic journalists and editors by giving them political appointments.

Ironically, by the early 19th century, the newspaper industry began to serve as a force of democratization. Though the industry was centered in Philadelphia and New York, by 1820 there were more than 500 newspapers in the United States; of these 24 were dailies. And the 1830s also saw the rise of the penny press and a more independent cadre of newspaper publishers. In 1833, Benjamin Day began publishing the New York Sun, the first daily paper that was designed to appeal to the urban working class. The Sun was sustained more by circulation and advertising than by political patronage. It also emphasized human interest stories, rather than the political and economic stories that had been the mainstay of earlier papers. Day introduced formatting changes such as large type and wider column widths to make the paper more legible. Most importantly, from a marketing perspective, Day sold his paper for just a penny.

Other papers, especially in New York City, followed the *Sun*'s example. James Gordon Bennett's *New York Herald* was another journalistic path breaker. For one thing, the *Herald* combined the sensationalism of the *Sun* with the political and commercial coverage of more traditional papers. Bennett also became the first publisher to announce his paper's independence from political affiliations and his determination to "record facts, on every public and proper subject, stripped of verbiage and coloring . . ." After the development of the TELEGRAPH in 1844, the *Herald* became the first newspaper to use that technology to gather reports from other cities. By 1860, the *Herald* was selling 60,000 papers daily.

Bennett's *Herald*, as well as two other New York papers, Horace Greeley's *New York Tribune* and Henry J. Raymond's *New York Times*, were all institutions run by strong-willed and eccentric men who established the American newspaper as a capitalist, moneymaking business. Greeley's *Tribune* employed a large editorial staff with correspondents in six American cities, as well as Europe and Latin America. Greeley's paper mounted a slew of editorial campaigns, including a fight against SLAVERY. The *New York Times* was considered one of the new breed of higher quality newspapers from its founding in 1851, though it did not become the "paper of record" until the 20th century. While the penny press did not always live up to its promise of dispassionate coverage, it established a new culture of aggressive, deadline-driven reporting.

In 1848, six New York papers banded together to form the Associated Press of New York, the nation's first wire service. Because the AP was funded by several papers of different political bents, the AP itself sought to present "objective" reports to which its client papers could add their own slant. Partly to defray their rising editorial costs, by the mid-19th century the mass market papers cost two pennies instead of just one.

While the newspapers of the mid-1800s eschewed political affiliations, they espoused the views of their owners. Perhaps the starkest ideological fault line in the newspaper industry in the years before the Civil War involved editorial policies on slavery. Many papers took sides for or against slavery. The abolitionist movement also spawned a number of journals, including a few black-owned newspapers. The most well known of these was the *North Star*, which was published by Frederick Douglass.

The Civil War sparked a number of important changes in the newspaper industry. Washington, D.C., became the center of political coverage. Feature syndication started during this period. The Civil War was the first war to be covered by photographers. However, it was not until the development of screen printing in the 1890s that photographic images could be reproduced in newspapers and magazines. Toward the end of the Civil War new printing innovations did enable newspapers and magazines to duplicate illustrations economically for the first time. (During the Gold Rush of 1899, the Seattle Times printed extensives graphic guides and maps on the gold fields. And in 1901, the Chicago Daily News pioneered the use of color.)

Because battlefield reporters were worried that the new telegraphic technology used to transmit dispatches might fail, they began packing the important news into the top of their stories, leaving the details for last. Thus, the old chronological news reporting style was replaced by what we now think of as the "inverted pyramid."

Following the Civil War, the growth of the RAILROADS opened the West to settlement, and the spread of heavy industry fostered a boom in both immigration and urbanization, which fueled ever greater demand for mass-market newspapers, while industrialization and the beginnings of a consumer culture (in particular the advent of the department store) fostered the growth of advertising.

The industry and the news gathering process also benefited from a number of technological advances that not only speeded printing but also made it possible to file stories from remote locations. Until the beginning of the 19th century, printing and the production of paper were handicraft businesses. Paper was produced literally from rags, not wood, and type was set by hand. The years after the Civil War saw a revolution in technology, including the invention of paper made from wood pulp in a paper-making machine. Other innovations included the linotype machine, which tripled the speed of typesetting, halftone photoengraving, which made it possible to print photographs for the first time, and the telephone and the telegraph.

A new generation of newspaper tycoons sought to appeal to the growing cadre of workingclass readers with a renewed focus on sensational, crusading news stories. Publishers such as Joseph Pulitzer and William Randolph Hearst would become leading pioneers of what became known as yellow journalism.

Pulitzer, a Hungarian immigrant who got his start in the newspaper business by founding the *St. Louis Post-Dispatch*, bought the *New York World* in 1883. Pulitzer's mission, he said at the time, was a paper that would "expose all fraud and sham, fight all public evils and abuses." The

World embraced diverse crusades ranging from the Standard Oil monopoly to the conditions of tenement housing in New York City. Pulitzer commissioned R. F. Outcault to draw the first cartoon comic, and he devised and published the first opinion poll. He is credited with adding sports news and so-called women's news. Pulitzer, who would found both the eponymous journalism prizes and the Columbia University School of Journalism, also exhorted his editors to "always tell the truth, always take the humane and moral side . . ." William Randolph Hearst, whose family owned the San Francisco Examiner, bought the New York Morning Journal in 1895 to compete against Pulitzer's World. Mounting a vigorous campaign to steal both readers and advertisers from the World, Hearst spent lavishly to attract star talent, many from the World, and undercut the World's advertising rates. By the turn of the century, both papers were publishing morning, evening, and Sunday editions.

In their frenzied competition, the World and the Morning Journal pushed the boundaries of sensationalism and journalistic ethics, giving rise to the term yellow journalism. As tensions between Cuba and its colonial ruler escalated, Hearst and Pulitzer exploited-some say they even fueledthe impending crisis to boost circulation. Hearst dispatched writer Richard Harding Davis and artist Frederic Remington to Cuba. When they arrived to find things quiet and asked to be sent home, Hearst is said to have replied: "Please remain. You furnish the pictures and I'll furnish the war." When the battleship Maine exploded mysteriously in Havana harbor, sparking the Spanish-American War, both papers pinned the blame on the Spanish and splashed the story across their front pages. Within days, Hearst launched a subscription campaign to raise money for a memorial, which was eventually built at Columbus Circle. Not to be outdone, Pulitzer built a statue to Pomona at the east end of 59th Street and Fifth Avenue. A similar subscription campaign by the Hearst newspapers helped fund Mount Rushmore. To whip up support for both the war and the memorial, Hearst's papers also published distorted accounts of Spanish atrocities. Hearst's tactics prompted former president Grover Cleveland, who had resisted intervening in Cuba during his presidency, to charge Hearst with exploiting the deaths of the men who had died on the *Maine* as an "advertising scheme for the *New York Journal.*" Indeed, within days of the explosion, circulation of both papers exceeded 1 million readers.

In 1900, advertising as a percentage of revenues jumped to 55 percent, up from 29 percent in the 1830s (today, ads account for 70 to 80 percent of newspaper revenues). The development of newspaper chains was another major trend in the early 20th century, led by Edward Wyllis



William Randolph Hearst (LIBRARY OF CONGRESS)

Scripps. Scripps launched the *Cleveland Press*, the first paper in what was to become a crosscountry chain of newspapers that numbered 23 by the start of World War I. The Scripps chain pioneered a number of innovations: Editors were often offered stock. Scripps wrote the editorials for his papers himself. He also launched a wire service, United Press Association. Like Pulitzer, Scripps saw himself as something of a crusader for the working class. He even experimented with ad-free newspapers as a way to resist the pressure of advertisers.

The years between World War I and the end of the Great Depression marked a period of massive consolidation in the newspaper industry. For example, inspired by Scripps's success, Hearst, too, began to buy newspapers—more than two dozen by 1934. Hearst also launched a news service, International News Service. The merger of the Hearst news service and the Scripps news service in 1958, resulted in United Press International, which was the major competitor to the Associated Press.

Three other newspaper chains were launched in the early 20th century: the Newhouse Newspapers, founded by S. I. Newhouse; Gannett Newspapers, founded by Frank Gannett; and the Knight-Ridder chain, which got its start when John Knight rescued his father's *Akron Beacon Journal* from near-bankruptcy during the Depression and began buying a slew of midwestern papers.

The turn of the century also saw the rise of the *Wall Street Journal*, which would become the first national newspaper. The business press—in the form of so-called price currents, which were little more than pamphlets that reported on commodity prices, the movement of ships, and exchange rate fluctuations—dated back to the founding of the colonies. General interest newspapers, which had catered to the colonial elite, had recognized the importance of business subscribers and issued supplements, often for free, that listed information on commodity prices, insurance premiums, and shipping news. The most successful and influential of the shipping papers, the *General Shipping and Commercial List* (which eventually became the *New York Shipping and Commercial List*) was launched in 1815 and was published until the early 20th century, when it was merged with the *Journal of Commerce*.

On Wall Street, the first financial newsletters began soon after traders began selling stocks and bonds under a sycamore tree at the corner of Wall and Broad Streets in 1789. By the late 19th century, a number of hand-written financial bulletins were hand-delivered to subscribers every day. The Wall Street Journal, which quickly became the premier business journal, was founded on a technological innovation intended to improve the production of these bulletins. In 1882, Charles Bergstresser convinced Charles Dow and Edward Jones, two of his colleagues at the Kiernan News Agency, a leading financial publisher of the day, to defect and form their own company. He did so after Kiernan had refused to give Bergstresser an equity interest in one of his inventions, a stylus that could record the news onto 35 bulletins simultaneously. Dow Jones & Co. soon bought the first financial printing press on Wall Street. The company was also first to use the telegraph to transmit financial news from London and Boston to New York. In 1889, Dow Jones introduced the Wall Street Journal, Wall Street's first afternoon newspaper. (A paper by the same name had ceased publication a decade earlier.) The same year, the company introduced the original Dow JONES INDUSTRIAL AVERAGE; of the first 12 companies on the list, only GENERAL ELECTRIC survives. By that time the company was already producing both bulletins and a financial ticker that transmitted the latest stock prices.

Success also fostered a battle between the business side and the editorial side of the paper. As the *Wall Street Journal* became more and more successful, Edward Jones, who was in charge of advertising, filled the front page with ads. Dow, who was in charge of editorial content, objected. In 1899, Jones sold his interest in the company to Dow, beginning a tradition whereby the editorial department would function independently of the financial side of the paper.

By the start of the 20th century, the newspaper industry had become big business. At the same time, journalists and newspaper publishers thought of themselves as a profession with responsibilities to the reading public. When Adolph S. Ochs bought the near-bankrupt New York Times in 1896, he stressed accuracy, objectivity, and depth. This new "objectivity" was also synchronous with the spirit of progressivism, rationalism, and professionalism that gripped the rapidly industrializing nation of the early 20th century. In 1922, the major dailies organized the American Society of Newspaper Editors, which adopted a professional code of ethics known as the "Canons of Journalism." Similar codes had been adopted by regional publications beginning in 1910. Though the canons were voluntary, they stressed fairness, impartiality, independence, and "fidelity to the public interest." Newspapers did, indeed, sometimes have a substantial impact, as, for example, when coverage of the Triangle Shirtwaist factory fire helped to highlight unsafe working conditions and inspired changes in municipal laws.

But sensationalism was not dead. During the roaring 20s, cities saw the rise of a new breed of newspaper, the tabloids, which countered the sobriety of mainstream papers such as the *New York Times* and the *Wall Street Journal* with a new era of sensationalism. The tabloids were smaller in size than conventional papers, so they could easily be read on bus and subway, and used large headlines and photography. The archetype of the new tabloid was the *New York Daily News*, which was founded by Joseph Patterson in 1919.

The 1920s also saw the rise of broadcast media. Radio began to threaten the department store advertising base of the newspapers. Competition and financial pressure led to a further consolidation of the newspaper industry that continues to this day.

Interpretive journalism emerged, in part, as the print media's response to the spot-news



Pressroom of the New York Times, 1942 (LIBRARY OF CONGRESS)

advantage enjoyed by broadcasters. Interpretive journalism also was an answer to the Achilles heel of objective reportage. A nothing-but-thefacts approach to journalism failed to lend meaning to complex news events; it also left journalists open to manipulation by public officials who could garner headlines merely by holding a press conference. Columnists pioneered interpretive journalism in the 1910s and 1920s. The seriousness of the Depression also bolstered interpretive journalism; President Roosevelt, for example, made his economic advisers available to journalists to help explain new economic policies. Senator Joseph McCarthy's success in manipulating the postwar press further discredited "objectivity." (Indeed, it was interpretive reporting by Edward R. Murrow on his *Hear It Now* broadcast that was credited with helping to bring down McCarthy.)

By the second half of the 20th century, competition from new forms of broadcasting and new technology combined to undermine regional, independently held newspapers. Computer and satellite technology fostered a boom in regional printing and the first national newspapers. The *Wall Street Journal* began printing regional editions in the mid-1970s, and Gannett launched *USA Today* in 1982.

The growth of the national papers, chains, and eventually publicly held companies signaled the decline of independent regional newspapers. Just after World War II, Walter Lippmann traveled to Iowa on the occasion of the 100th anniversary of the *Des Moines Register and Tribune*. In his remarks to an audience of Iowa publishers and editors, he said: "There is I believe, a fundamental reason why the American press is strong enough to remain free. That reason is that the American newspapers, large and small and without exception, belong to a town, a city, at the most to a region."

At the time of Lippmann's address, threefourths of all American dailies were independently owned. But by the turn of the 21st century, a handful of media corporations had come to dominate the news media, and all but a few daily papers had gone public. By selling shares to the public, newspaper companies were able to raise much-needed capital. However, the strategy also gave newspaper editors (and managers) a new focus: shareholders and profit margins, rather than readers.

To resist being swallowed up by chains, a number of newspapers formed joint operating

agreements, and in the 1950s, one-newspaper towns began to flourish. The Newspaper Preservation Act of 1970 provided some protection against antitrust prosecutions and was intended to protect weak newspapers by allowing two publications to share advertising, management, and printing resources, while maintaining separate editorial staffs. Some newspapers also bought local television stations. However, in 1975 the Federal Communications Commission banned future purchases by media companies that would result in a company owning both a newspaper and a television station in the same market; the rule has come under fire in recent years as media conglomerates have sought to weaken FCC rules governing ownership.

By the late 20th century, the most successful newspapers were highly profitable businesses, garnering net profits of 15 to 25 percent, substantially more than many U.S. businesses, which rarely see double-digit margins. A handful of prominent family-controlled newspapers, including the *Washington Post* and the *New York Times*, also went public, but used large blocks of shares to retain family control and to blunt the pressures of the stock market.

The pressures of public ownership sharpened the debate about the watchdog function of newspapers. "News has become secondary, even incidental, to markets and revenues and margins and advertisers and consumer preferences," note the authors of *Taking Stock: Journalism and the Publicly Traded Newspaper Company*. Significantly, the biggest—and riskiest—stories of the late 20th century, Watergate and the Pentagon Papers, were broken by the *Washington Post* and the *New York Times*, which are still controlled by family members.

See also advertising industry; Barron, Clarence W.; muckrakers.

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Andrea Gabor

New York Stock Exchange In the 18th century, stock traders conducted an outdoor market on Wall Street in lower Manhattan to trade stocks and commodities. The market was very limited both by location and by weather, and when it became impossible to trade outside, the traders often moved indoors to coffeehouses, also located on Wall Street. This general locale became the site of stock trading in New York City.

In 1791, the early stock market suffered a serious setback because of speculation by William DUER, a former finance official during the Continental Congress. Duer speculated heavily in land and became overextended in his dealings, causing the market to collapse. As a result, the traders realized that they needed to form an organization to control their own membership and organize the market. A meeting was held under a buttonwood tree and was known as the Buttonwood Agreement. It became the foundation for the New York Stock & Exchange Board in 1817 and its successor, the New York Stock Exchange.

The post-Buttonwood brokers would meet daily to transact business in the securities of the day—mostly government bonds. From those humble beginnings emerged one of the world's largest marketplaces, home to more than 3,000 listed securities and a daily volume in excess of a billion shares. With 1,366 seat-holders (memberships), the New York Stock Exchange (NYSE) has attracted most of the world's largest corporations to its listings and counts among its members firms representing most of the financial capital in the securities industry. The NYSE's marketplace is built upon a specialist system of executions. Each security listed is assigned to a specialist unit that is charged by the exchange to maintain a "fair and orderly market." Over the years this has come to mean that the specialist must buy securities from sellers when there are no public bids and sell to buyers when there are no public offerings in a method that maintains the continuity of the marketplace. In fact, the specialist is involved in less than 20 percent of all transactions, with the balance involving customer meeting customer at the prevailing market price. As the industry has grown, these specialist units formerly numbering more than 100 have merged to about two dozen in recent years as the supply of capital for these functions are available only to the largest entities in the industry.

The NYSE has grown exponentially since its founding. Stock tickers were first used in 1867, and the exchange experienced its first millionshare day in 1886. Although it experienced many panics in the 19th century, the 1929 crash was the worst day in its recorded history. After World War II, individual investors began returning to stock investments, and volume and activity began to increase. In 1972 the first salaried fulltime chairman, James Needham, took office, and in 1975 the first consolidated TICKER TAPE was introduced along with negotiated commissions.

Technology has greatly changed the structure of the floor and the method of order entry. Whereas once all orders were delivered by hand to the trading posts and either executed or left on the specialist book for later execution (for which the specialist received a small fee), today most orders arrive electronically. The NYSE has developed a Dot System for automatic delivery of all small lot orders directly to the specialist post and a Super Dot for large-size orders to follow the same route. As a result of these changes, the role of the retail floor broker, that individual who walks around the floor executing orders, has been vastly diminished. The role of the broker who has the ability to handle or execute professional large-size institutional orders continues to be an important part of the daily volume on the floor of the NYSE.

In recent years, with the growth of electronic entities that look like stock exchanges but have none of the mandated regulatory functions of an exchange, the New York Stock Exchange has been the target of more and more competition. In fact, many of these electronic networks (ETNs) have applied to the Securities and Exchange Commission for status as exchanges. Expanded trading facilities have also led to increased volume. By the late 1990s, volume was well over a



Trading floor of the New York Stock Exchange, 1955 (LIBRARY OF CONGRESS)

billion shares per day, greatly fueled by the increased number of MUTUAL FUNDS doing business and the increased volume generated by hedge funds.

The New York Stock Exchange has also indicated a desire to demutualize (go public) to put itself in a better position to compete in the quickly changing financial services industry. Under the current structure, the NYSE is run by the votes of 1,366 members, and all decisions go through an arduous path of committees, boards, and staff. As a public corporation, decisions would be made and implemented quickly, a very necessary requirement in today's changing world. The question of going public does not resolve the question of the role of the NYSE as a regulator of the firms in its membership and as the organization charged with overseeing the business principles of its members. Many feel that a publicly owned NYSE cannot be both a competitor and a regulator in the securities industry at the same time.

See also American Stock Exchange; National Association of Securities Dealers; stock markets.

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Lee Korins

Norris, George W. (1861–1944) *politician* Norris was born on a farm in Sandusky County, Ohio, and attended local public schools. He graduated from Baldwin University in Ohio and Valparaiso University's law school in 1883. He taught school for two years before moving to Nebraska, where he began practicing law. He then became a county attorney and a district judge before being elected to Congress as a Republican in 1903. He served in the House of Representatives until 1913, when he successfully ran for the Senate, beginning a 30-year career in the upper house.

Norris became best known as a liberal Republican while serving in the Senate, carrying the torch as one of that body's last Progressives. He became known during and after World War I as an ardent opponent of big business on many occasions, criticizing bankers for the profits made during World War I. He also became an opponent of many of the large UTILI-TIES combines assembled during the 1920s, especially those of J. P. Morgan Jr. He opposed selling the Muscle Shoals power production plant on the Tennessee River to Henry FORD in 1921, maintaining that the project should remain in the public sector.

His greatest contribution to the NEW DEAL, with which he was ideologically aligned, came when he led the movement, at the behest of Franklin Roosevelt, to create the TENNESSEE VALLEY AUTHORITY (TVA) in order to keep Muscle Shoals permanently in the public realm. Norris had been opposed to private ownership of utilities, especially in rural areas, since many of them had higher operating costs than publicly owned utilities. As a result of his sponsorship, the first of the TVA's dams built was named the Norris Dam.

During his terms in the Senate, Norris held many important committee assignments and chairmanships. Among them were chairman, Committee on the Five Civilized Tribes of Indians, Committee on Patents, Committee on Agriculture and Forestry, and Committee on the Judiciary.

As he drifted further from the Republican Party, Norris won a seat in the Senate as an Independent in 1936. He served until 1943, when a reelection bid failed. Known as the "Father of the TVA," Norris died in McCook, Nebraska, in 1944.

See also MORGAN, JOHN PIERPONT, JR.

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North American Free Trade Agreement (NAFTA) A comprehensive trade agreement that will eliminate TARIFFS and remove many nontariff barriers in trade among Mexico, Canada, and the United States. By 2004, most tariffs were phased out. By 2009, tariffs on the previously exempted products, mostly agricultural, will be eliminated. Most trade between the United States and Canada has been tariff-free since 1998 due to the Canada-U.S. Free Trade Agreement (CUFTA). Negotiations began in 1991, and NAFTA was passed by Congress in November 1993. The agreement went into effect on January 1, 1994. The three countries have a combined GDP of \$9.5 trillion and a population of 396 million, creating a trade block that rivals the population and economy of the European Union.

Early economic analysis predicted gains for all three countries. However, since the United States and Canada already had a free trade agreement prior to NAFTA, most of the spectacular gains have been made in the trade with Mexico. According to the Dallas Federal Reserve Bank, exports to Canada increased 56 percent, exports to Mexico were up 89 percent, and U.S imports from Mexico and Canada increased 137 percent and 56 percent, respectively, by 1998. Total U.S.-Mexico trade increased 141 percent from 1993 to 1999. Without the agreement, U.S. exports to Mexico would have declined, and U.S. imports would have barely grown. Foreign direct investment, especially from the United States, in Mexico has increased as a result of this agreement. Approximately 80 percent of U.S.-Mexican trade is intraindustry. For example, the United States

imports Volkswagens from the plant in Puebla, Mexico, and exports Cadillacs to Mexico. In addition, the trade agreement has facilitated production sharing, as in the maquiladora industry at the border. Certain industrial sectors experienced the most change. For example, the U.S. computer and tractor industries benefited greatly, and the Mexican textile industry boomed.

In current U.S. trade policy making, the president is required to obtain permission to negotiate from Congress, and the agreement must be approved by Congress. Historically, permission to negotiate was readily obtained. However, NAFTA created concern among many groups, especially unions and environmental groups. To receive permission, President George H. W. Bush promised to address some of the environmental and labor concerns. In 1993, a moderate Democrat, President Bill Clinton, created a pro-NAFTA coalition and moved away from the labor wing of the Democratic Party to gain congressional approval of the agreement with the following additions and side agreements. To address environmental concerns, the Border Environment Cooperation Commission was formed to encourage a clean-up of the border. The North American Development Bank was created to provide assistance for communities adjusting to the effects of NAFTA. The North American Agreement on Environmental Cooperation was designed to strengthen environmental cooperation and enforcement of domestic laws. These commissions are designed to promote a development that is sustainable, robust, and competitive.

In addition, the North American Agreement on Labor Cooperation was signed to improve the working conditions and living standards in the three countries, to ensure the enforcement of the respective labor laws, and to provide a venue for problem solving and dispute settlement. In the NAFTA text, under chapter eight of the agreement, parties can impose trade restrictions if increased imports harm a domestic industry. To implement this possibility, they created the Understanding on Emergency Action. Representatives from each country compose the Working Group on Emergency Action. This working group reports to the Free Trade Commission. The NAFTA secretariat provides technical support.

See also Foreign investment; multinational corporation.

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Jennifer Holmes

office machines The office as we know it rooms filled with people, in buildings designed just to house business facilities-came into existence only in the second half of the 19th century. One of the reasons companies and governments could bring large numbers of office workers together was the emergence of new classes of tools that made it possible for workers to be more productive or to do new things. These tools included adding machines, calculators, telephones, and punch-card tabulating equipment in the 19th century; in the 20th century, computers, photocopiers, PCs, fax machines, and, toward the end of the century, cell phones, laptops, and the INTERNET. Each of the new machines altered the "look-and-feel" of offices and what was done in them. The process of new machines and offices coming into American life began in earnest after the Civil War, although some office buildings had existed before, such as the old War Department building next to the White House, which housed most of the U.S. government during that conflict.

Offices in the 1600s and 1700s were typically the "studies" ministers had in their homes or churches, or a few small rooms in government buildings that housed a secretary or clerk who copied documents. The wealthy would often also have either a study or a library in which they worked, such as the famous library Thomas Jefferson had off his bedroom at Monticello. During the 18th and early 19th centuries, offices often were sparse rooms shared by a number of employees, housing a few books and several desks. Abraham Lincoln, while practicing law in the 1840s and 1850s, shared such an office with a colleague on the second floor of the courthouse in Springfield, Illinois. There were no such things as office buildings filled with hundreds of offices.

In the 1860s, a "typical" American office normally had two types of people: a person who in time would be called a manager, supervising the work of a few people, and others who were either clerks or accountants. High technology consisted of quill pens, paper, and a few reference books. There were no file cabinets, three-ring binders, TYPEWRITERS, or telephones. All of those things would begin arriving in the second half of the 1870s and by 1900 be widely deployed. Between 1875 and the end of the century, large organizations came into being, what we would eventually call corporations, with hundreds, even thousands of employees, multiple layers of management, and the need to coordinate activities across many states, even the entire United States. To a large extent that became possible because of a new collection of information technologies that came into use. The TELEGRAPH, invented before the Civil War, became a popular tool of big business, driving down operating costs for firms and technology. The telephone did the same, beginning at the end of the 1880s.

While the typewriter made it possible to rapidly create large amounts of new text, the telephone had an even more profound effect on how people did their work. Prior to the arrival of the telephone, if an individual wanted to have a quick conversation with someone in another location, one either had to write a note to be mailed or delivered by hand or personally travel to the other building or town to have the discussion. So the amount of this kind of activity that could be done was quite limited. But once many businesses used telephones, it became much easier to dial someone up, resulting in more conversations per day than before, all of which became possible in a practical manner by the early 1920s. By World War II, one could not imagine an office without a telephone.

Before discussing some of the new technologies we should understand what the business requirements were that led to their adoption. As organizations became larger, they needed new ways to record information in a cost-effective way. The typewriter addressed that need very nicely. Time clocks that employees would use to punch in and out collected additional information needed to pay those who were compensated by the hour. Businesses also needed to store and retrieve information as the volume of data required to operate an enterprise increased. During the 1880s and 1890s, a variety of new ways to do so reached the market. The most important innovation was the shift to cards for storing information as opposed to large ledger books. That allowed clerks to sort, merge, and organize data differently, first with hand-written cards

(e.g., 3 x 5 cards) and later with punched cards (what people would eventually call computer cards). These had holes representing different pieces of information (usually numbers) that could be read and sorted by tabulators and other specialized equipment. It was in this period that file cabinets and three-ring binders were invented. Analysis of numeric data was a third activity that managers also wanted to automate in order to understand efficiency and control processes. In support of this activity, adding and calculating machinery proved useful. The first widely available devices began appearing in the 1880s, followed by more specialized equipment that did specific tasks. These devices included billing and bookkeeping "appliances" and tabulating machinery to sort and tabulate results from punch-cards. These various devices had keyboards much like a typewriter by which clerks entered data upon which the machine would perform calculations, total results, and publish answers.

During the period from the 1870s to the end of World War I, continuous improvements in such equipment added functions, lowered their purchase price, and led to their wider use. The other reason for their rapid spread came from management; as they were able to obtain information more rapidly and easier than before, they wanted more of it. This in turn led to more data collection, which inspired manufacturers of such equipment to advance their technologies with newer models richer in function, capacity, and speed.

Large firms emerged in this period that became major information processing manufacturers of office equipment. Burroughs Corporation became the largest provider of adding and calculating machinery in the nation by the early years of the 20th century and years later (1950s) became an early supplier of computers. National Cash Register (NCR) began life in the 1880s as a manufacturer of a mechanical cash register; in the 1960s it also was a major supplier of computers and by the end of the 1970s, of point-of-sale (POS) systems for retail stores. In the late 1880s and early 1890s, Herman Hollerith (an ex-government census taker) introduced to the market punch-card equipment and tabulators, mainly used by large government agencies for tabulating results of population census data, and insurance and railroad companies to tabulate mountains of information. Hollerith's firm became the core piece of what eventually became INTERNATIONAL BUSINESS MACHINES (IBM). His punched cards were used as input and output for early mainframe computers and remained in use until the end of the 1980s.

In the period from 1885 to the start of the Great Depression at the beginning of the 1930s, literally thousands of types, brands, and models of office equipment came onto the market and became widely deployed in most offices of midsize to large government agencies and corporations. An office supply catalog of 1928 listing a variety of machines included adding and calculating machines, billing machines, bookkeeping machines (for accounting), accounting and tabulating machinery, check protectors and writers, coin-changing devices, cash registers, dictating machines, typewriters, duplicating machines, addressing machines, scales, time recording devices, and intercommunications equipment, to mention a few.

During the 1930s and 1940s, advances in the use of technologies available to office managers



Typewriting department at National Cash Register, Dayton, Ohio (LIBRARY OF CONGRESS)

slowed, first because demand went down during the Great Depression and then because supplies of equipment were limited during World War II. But by the 1930s, it would have been difficult to walk through an office without seeing some "hardware," at a minimum a telephone and a typewriter or adding machine. Between the 1880s and World War II, this technology created whole new classes of employees; the most important were secretaries, filing and other office clerks, and accountants. Hundreds of thousands of new jobs were created that were clearly of the type that were later referred to as informationage positions. The creation of the role of secretary in its modern form took place in this period and became the near-total monopoly of young women, often well educated, who learned to type, make telephone calls, and collect, store, and retrieve information and reports. They came to dominate the office as a hub, as as source of information, and as facilitators of various work activities largely based on a knowledge of organizational operations and people. Men continued to manage offices with minor exceptions, and men made up the overwhelming majority of the new class of accountants. Accounting, which pushed the demand for new technologies in the years before World War II, also became more sophisticated as new equipment made it possible to collect additional data and to analyze it quickly. Cost accounting procedures, for example, which document the cost of manufacture, delivery, and sale of products, came into their own in this period, along with inventory control.

After the end of World War II, a new era began in the development of office equipment and of changes in the role of offices. While improvements in adding and calculating equipment and punch-card machinery continued in the late 1940s and all through the 1950s, the central event was the development of commercial computers that came on the market in the early 1950s. The key systems of the day came from Univac, with its famous UNIVAC machines, and a series of computers from IBM in the 1950s. Other firms that were providers of "office appliances" in the prewar period entered the market, such as Burroughs and NCR, but also vendors of electronic appliances, such as GE and RCA. By the middle of the 1960s, the old office appliance firms dominated the new computer market, and from then on the story of computers involved either these old office appliance vendors or new firms born in the 1960s.

While computers are discussed elsewhere, it is important to understand four technological trends that affected the office during the second half of the 20th century. First, mainframes gradually became less expensive, grew easier to use, gained a larger capacity, and were more reliableall of which encouraged large organizations to use them. Second, beginning in the late 1960s, software tools made it easier to write programs to do specific tasks, such as accounting activities, and commercially available products came to market. These were accompanied by the ability to interact with computers online by using terminals. Third, equipment, software, and telecommunications became more modular, beginning in the 1960s with the arrival of minicomputers and in the 1970s with personal computers. All of these developments meant that ever smaller organizations could afford to use computers and that this technology could be deployed across the economy in all kinds of organizations. Even the humble hand calculator, also equipped with computer chips, moved from being a \$700 device from H-P in the early 1970s to being nearly a throwaway product that cost \$5 in the early 1990s and was the size of a credit card. Fourth, as computer chips became increasingly inexpensive and available, beginning in the 1960s, computing began to appear inside many devices and equipment used in all functions of organizations, from computer-driven robotic painting machines in automotive factories to the humble digital watch that became so fashionable to wear in the 1970s. Typewriters acquired memory in the 1980s, while a decade earlier, the first word processors had arrived on the market, the most popular of which were from Wang. Telephones in the 1980s acquired a variety of functions made possible by the computer chip: call forwarding, answering machine functions, combined fax and phone operations, recording, and so forth.

Another variation of the office became possible due to all these technologies. Clustering employees together in large rooms to do similar work had been an early form of the modern office, with "typing pools" of dozens of typists already appearing by the early 1880s and continuing right into the 1980s in word processing departments. Insurance claims clerks, who processed data on clients' claims using adding and other calculating equipment, were also clustered in large rooms. Census takers for the U.S. government, using tabulating and other equipment, filled cavernous rooms beginning in the 1880s. Telephone companies created "call centers," also in the 1880s, that continue to be used in many industries today; a number of employees sit in a room in front of a bank of telephone switches (1880s-1970s) or of terminals attached to mainframe computers (1960s-present) doing similar work, whether troubleshooting a problem, taking an order, or responding to a customer's question or complaint. It did not matter if they were in one's state or halfway around the world; fiber-optic cables and computers made telephone calls clear and cost effective. What all these "bull pens" and other centers had in common was a high reliance on a common set of office equipment and a similar suite of functions that people performed. All of the jobs created in the process were a direct result of the existence of the various technologies needed to perform the work at hand.

By the end of the 1980s, a walk through an office in the United States would probably show a telephone, perhaps a typewriter but more likely a personal computer, and possibly in the corner either a fax machine or a photocopier, both of which now had computer chips that governed the variety of activities that they performed. In the half century between the end of World War II and the end of the millennium, the role of offices and people in them fundamentally transformed in

large part because of the combined and increased use of telecommunications and computer-based office equipment. In 1950, the work of a business office felt very much like it had in the 1920s and 1930s. Secretaries typed reports and letters and answered the phone. Managers reviewed letters, read reports, and became extensive users of the telephone. Clerks still filed reports and documents in what now were large banks of file cabinets, while the "IBM Room" produced pay checks and monthly accounting reports. A quarter of a century later, some things had changed. The most important changes involved use of online systems in which filing clerks sat down at terminals and used their computers to retrieve increasing amounts of information stored in databases. Office managers still used the telephone but were also increasingly reliant on large boxy fax machines.

In the next 15 years, a massive change occurred that was facilitated by the arrival of new office equipment. Machines that could do word processing-what today is done on laptops using word software-increased the shift of clerks to data collection roles in which they entered data and retrieved it using computers. Secretaries also did this, often becoming the most technically competent people in the office. Organizations and individual managers and employees deployed PCs first to create and use spreadsheets (mainly for accounting), then word processing, and finally to look up information, thanks to the arrival of useful database management software in the 1970s and 1980s. These various applications led everyone in the office to increasingly have direct access to computers to enter information and to retrieve it. In turn, that led to a sharp decline in the number of office clerks and secretaries, a trend that has continued to the present as office automation makes it possible to do more with fewer people. Employees in business increasingly became more reliant on data (information) with which to do their work and to make decisions. The process management movement of the 1980s and 1990s would not have been possible without massive amounts of specific information about how tasks were being done, and the results of that work delivered in a timely fashion to workers and managers alike.

A third development in this short period of time was the increased convergence of telecommunications with computing. Online systems were one part of that process; another involved the ability of PCs to hook up to commercial and private databases by way of a telephone dial-up to access new sources of information with which to work, or to transmit data within an enterprise. E-mail began in this period, leading to a continuing shift away from letters and other paper documents moving about an enterprise. PCs acquired telecommunication capabilities, while the costs of long distance telephone calls began dropping, another trend that has continued unabated to the present. A long distance phone call in 1975 might have cost nearly 40 cents a minute; in 1990, it had dropped to under 30 cents and in 2004 to between 5 and 7 cents. Meanwhile, computing equipment increasingly acquired the ability to mix and match document text with graphics, to present material in color, and to attach still and moving pictures and sound. PCs by the millions flooded the market from such vendors as IBM, Compaq, and Apple. By 1990, more than half the American workforce either had access to a PC or used one on a regular basis; nearly half also had one at home. The democratization of computing was well on its way. It seemed that everyone had access to a computer.

In the early 1990s, telephones became more portable, along with computers. First came telephones that could be used in automobiles (originally called radio phones) that allowed salesmen and service personnel to communicate with their offices. Then came the less expensive, smaller cell phones, which were first adopted by middle and upper management, then by sales and consulting personnel, and by the early 2000s, by more than a third of the American public. At the same time, PCs became smaller and lighter. IBM

introduced what came to be known as the laptop, and soon all vendors had their versions. Laptops, equipped with modems that allowed people to access company files and their firm's e-mail system, in combination with cell phones, made working in a physical office less necessary. People could do a great deal regardless of location. The technology also caused many people to work longer hours because they could and did check their business e-mail at home after dinner, or could call a colleague on a weekend when a brainstorm occurred. Increasingly in the 1990s, more employees began working out of their home offices. While reliable statistics on how many did so are difficult to come by, at least 10 percent began working this way. The group cohesion that working in an office created in prior years was put at risk, but companies saved billions of dollars by downsizing the number of offices they owned and maintained.

From the early 1970s forward another evolution in office functions took place involving a variety of telecommunications. As offices acquired terminals attached to mainframes, these were linked together either through telephone dial-up or by way of dedicated phone lines. Large enterprises also created their own internal telephone networks, which allowed employees to start communicating with each other by using what eventually would be called e-mail. E-mail instantly became the choice over these dial-up and private lines in the 1970s and expanded in the 1980s and 1990s to the point that it is now ubiquitous. At the same time, the U.S. Department of Defense built a highly robust, secure network in the early 1970s that scientists, military personnel, and defense contractors could use. That network was opened to academics by the late 1970s and to others who knew how to access the network. By the mid-1990s, this network was called the Internet. The development of software tools (called browsers) in the mid-1990s made it easier to access and use the Internet. Use of the Internet expanded rapidly to the point that by the early years of the new century, more than two-thirds of office workers used it primarily for e-mail and looking up information. By the early 2000s, having an enterprise home page was considered business as usual, with information about one's company or agency, its services and products, and contact data. In the 1970s private networks sold information over telephone lines (such as financial data), and these services also migrated to the Internet.

Deployment of the Internet is not yet as extensive as the use of terminals and telephones. An office worker in the early 2000s had sufficient technology to be essentially free of having to work in an office. Cell phones and laptops, PDAs to hold information, and the Internet for e-mail and information-gathering all made the use of mobile workers in the 1990s essential for the modern office.

See also GATES, BILL; JOBS, STEVE.

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James W. Cortada

options markets Organized markets for put and call options, originally on common stocks, which developed alongside the securities markets in the 1970s. Along with futures and swaps, options markets are part of the derivatives markets that have developed mostly in Chicago and New York to help investors hedge risk on commodities, securities, and other underlying instruments.

Puts and calls (options to sell and buy) were traded informally on an over-the-counter basis since before the Civil War. Originally, a broker would arrange for an investor to buy or sell a put (option to sell) or call (option to buy). The investors on both sides of the deal would then wait to see if the buyer would exercise the right to the stock at the predetermined price. But options quickly became vehicles for manipulation and fraud. Stock market operators used them in stock watering schemes and as ways in which to manipulate the price of a stock.

In the FUTURES MARKETS, options on futures contracts were banned on the major markets, including the CHICAGO BOARD OF TRADE, in the 19th century. As stock trading grew more popular over the years, trading became more uniform as options were traded on an over-the-counter basis, but the market was often illiquid and lacked REGULATION.

In the late 1960s, volatile STOCK MARKETS created the need for more uniform options on a broader array of widely held common stocks that investors could use for hedging purposes. Organized option exchanges were developed in Chicago at the Chicago Board Options Exchange in 1973 and then at the AMERICAN STOCK EXCHANGE in 1974. The BLACK-SCHOLES options model helped investors and traders value options more precisely and led to their faster development. Each exchange listed options on the stocks it wanted to trade. Despite the fact that the markets are derivatives markets, the Securities and Exchange Commission is the regulator of equity options because they represent common stocks. After 1975, options on futures contracts again were permitted when the COMMODITY FUTURES TRADING COMMISSION was established by Congress.

Options also were developed for other financial instruments, including bonds, stock indexes, and precious metals. The markets continued to expand rapidly although not all stocks have options listed. In order to qualify for an options listing, a stock must fulfill a requirement laid down by the respective exchanges, not unlike those that the stock exchanges demand of a company before its stock can be listed. Currently, most options contracts use a variation of the Black-Scholes model for valuation.

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Owens, Michael J. (1859–1923) inventor and businessman Michael Joseph Owens was born in Mason County, (West) Virginia, on January 1, 1859, a son of Irish immigrants. After obtaining a rudimentary education, he left school at 10 to secure an apprenticeship at J. H. Hobbs, Brockunier, and Company, a leading glass manufacturer. Owens displayed an amazing aptitude for glasswork, and by 15 he was an acknowledged master of the art of glassblowing. Over the years he also assumed a prominent role in the American Flint Glass Workers Union, and helped bring about the closure of Edward Drummond Libbey's New England Glass Company in 1888. When that firm reopened in Toledo, Ohio, as the Libbey Glass Company, Owens was allowed to join as a blower of lamp shades. Within a few years he advanced to the important post of blowing room foreman and plant supervisor in recognition of his considerable talents. Owens and Libbey eventually reconciled their differences and struck up a cordial working relationship, with Owens providing technical and engineering inspiration and Libbey lending his financial and marketing expertise. By 1896, Owens had perfected his first mechanical innovation, a device to facilitate rapid tumbler and lamp-chimney production. The entire process was semiautomatic at best and required skilled handling, but it greatly enhanced factory output. Owens's success induced Libbey to underwrite the founding of Owens's new Toledo Glass Company, which placed a continuing strong emphasis on research and development in glass manufacture. Moreover, it provided Owens with both the revenue and resources necessary to pursue his technical innovations.

Owens's success as an inventor further facilitated his growing business relationship with Libbey, who continued financing his inventions and sharing the profits from licensing. His greatest technical achievement occurred in 1899, when he finally perfected an automatic device for the MASS PRODUCTION of bottles. This entailed an intricate multiplicity of tasks such as gathering the molten glass, transferring it to a mold, puffing hot air to form the bottle, and severing it on a conveyor belt to the cooling oven. Such a machine quickly dispensed with several highly skilled technicians and thereby increased factory output while dramatically reducing labor costs. Given the relatively crude state of mechanization of the day, it was a true triumph of engineering. Consequently, the Owens Bottle Machine Company was founded in 1903, which significantly impacted the ability of consumers to enjoy a wide range of liquid products at their pleasure. When Owens subsequently licensed his technology to other firms, both he and Libbey profited handsomely from the revenues.

Owens continued manufacturing glass with great success, and in 1912 he became apprised of Irving W. Coburn's attempts to perfect the cutting of sheet-drawn windowpanes. He prevailed upon Libbey to purchase Colburn's patents, even threatening to leave the company if Libbey failed to do so, and spent the next four years perfecting his own sheet-drawing process. His efforts proved successful, and in 1916, the partners formed a new organization, the Libbey-Owens Sheet Glass Company. Again, this new technology greatly increased the output of high-quality windowpanes for consumers while greatly lowering costs. Owens continued producing glass and tinkering with his devices until his death in Toledo on December 27, 1923. In his long career he wielded a tremendous influence upon glassware production in the United States and around the world, singlehandedly transforming it from a highly skilled art into a modern manufacturing process. He owed much of his success to financial and legal backing from Libbey, but the inspiration for change and innovation was purely his own.

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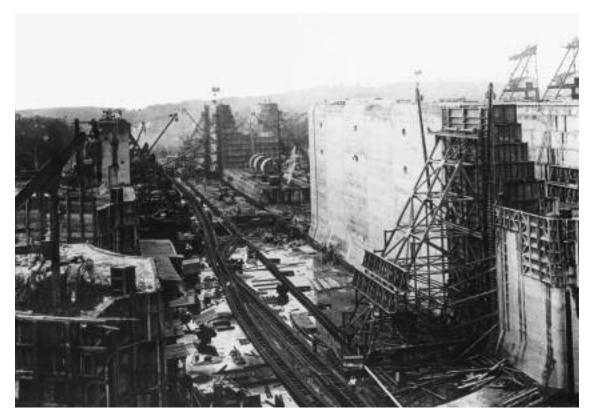
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Panama Canal Water passage connecting the Atlantic and Pacific Oceans through the Isthmus of Panama. Originally envisaged by the Spanish in the 16th century, American interest in a canal officially did not begin until after the Civil War. Various attempts were made at crossing Central America through Nicaragua before the war, including one by Cornelius VANDERBILT, but always proved unsuccessful. The Americans and British both desired to build a canal in the 1840s and almost went to war over disputed claims in Nicaragua. But it was not until 1914 that the 51-mile canal was actually opened for ship travel.

The need for a canal became more urgent when gold was discovered in California at Sutter's Mill in 1848. A group of New York businessmen built a railroad across the isthmus in 1855 with permission of the Colombian government, which ruled Panama at the time. Then in 1878 a French company directed by Ferdinand de Lesseps began digging a canal for the first time. De Lesseps had directed construction of the Suez Canal, but after numerous setbacks, the French company went bankrupt in 1889. A second French company continued the effort in 1894 but was technically incapable of making much progress. Five years earlier, in 1889, an American company began work on a canal across Nicaragua but also ran out of money. Only after the Spanish-American War did the United States government become interested in a Panama canal project. In 1902, President Theodore Roosevelt accepted a French offer to complete the project, and the following year the United States signed a canal treaty with Colombia.

The United States sent troops to Panama to protect the isthmus from Colombia and in 1903 officially recognized the Republic of Panama as an independent country. The chief engineer overseeing the construction was General George W. Goethals, a West Point graduate. More than 40,000 people worked on the canal at its most intense period, and it was finally completed in 1914. The approximate cost to the United States was about \$380 million, and the canal saved more than 8,000 miles on the ship route between the East and West Coasts of the United States. In 1971 the United States and Panama began negotiations for a new treaty to replace the one signed in 1903. The original treaty was replaced with two, one allowing Panama to take control of the Canal Zone and the other to take official control of the



The Panama Canal under construction (LIBRARY OF CONGRESS)

canal at the end of the 20th century. The United States retained the right to defend the neutrality of the zone. The treaties were approved in Panama in 1977 and by the U.S. Senate in 1978, and both took effect in 1979. On December 31, 1999, full control of the canal was handed over to Panama.

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Pan American Airways An American airline founded by Juan Trippe in 1927. Originally, the

airline was a one-route mail carrier flying from Miami to Havana, Cuba. Its premiere flight was on a chartered Fairchild airplane. In 1929, Pan Am began flying the mail route from the United States to Mexico City. The company then won other contracts to fly to the Caribbean and South America and, in 1931, from Boston to Maine. Within a short time of being founded, the company began using seaplanes, which were ideally suited for some of its more difficult routes.

After buying planes from the BOEING CO., Pan Am began offering a cross-Pacific service on its Pacific Clipper. When a flight was interrupted by war in the Pacific, the plane had to return to New York by circling the globe, becoming the first commercial flight to do so. During the war, the airline did long-distance contract flying for the government, reinforcing its credentials as the most experienced long-haul airline in the country. After the war, when jet engines became easier to produce, Trippe was the first customer for them, anticipating the commercial possibilities of flying customers to distant locations as quickly as possible. In 1958, Pan Am's clipper *America* inaugurated jet service to Paris from New York using a Boeing 707 and became the first commercial jet service.

Pan Am's jet services, plus its use of the Boeing 747, the original jumbo jet, opened the market for relatively inexpensive jet service to all and gave Pan Am the unofficial designation as America's flagship air carrier. The company's success could be clearly seen in Manhattan, where the Pan Am Building towered above Grand Central Station in midtown, with a heliport on its roof. The airline also used Boeing 727s to help evacuate American personnel from Vietnam at the fall of Saigon.

The plane blown up by a terrorist bomb over Lockerbie, Scotland, in 1988 was Pan Am Flight 103, and the company was severely affected by the incident. It continued to fly but only with increasing financial difficulties. The company remained the country's best-known international airline until 1991, when those financial problems forced it to shut down operations.

See also Airline industry; Airplane industry; Eastern Airlines.

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patents and trademarks The Patent and Trademark Office (PTO) is an agency of the U.S. Department of Commerce that examines and issues/registers patents and trademarks. The

Patent Office was created in 1790 and, for more than 200 years, has represented federal support for the progress of science and the useful arts. In 1870, the Patent Office also took charge of issuing trademarks, creating the modern-day PTO.

Patents give inventors a legal monopoly if an invention or device is novel, useful, and nonobvious. A patent is the governmental grant of an exclusive right to make, use, or sell an invention for a specified period, usually 17 years. In contrast, a trademark is a word, phrase, logo, or other graphic symbol that distinguishes one manufacturer's product from another. The main purpose of a trademark is to aid consumers in identifying brands and products in the marketplace and is akin to a guarantee of a product's authenticity. A trademark's duration is indefinite, as long as it continues to represent goods in commerce.

The Constitutional Convention of 1789 created a federal patent system rooted in the Constitution itself. Article I, Section 8, authorizes Congress to award exclusive rights for a limited time to inventors. Thomas Jefferson was a significant contributor to the early federal establishment of the patent system. However, the patent system fully realized its potential in 1836 with the establishment of a formal system of patent examination, complete with professional examiners. Patents on critical inventions in American history, such as the light bulb and the telephone system, came to symbolize the technological development of the 19th century.

In the 20th century, the patent system underwent significant changes. In the 1920s and 1930s, the public viewed large companies as having too much power via patents that dominated their respective industries. Courts became less willing to enforce patent rights until the 1940s, as the nation became involved in the war effort. The military called on inventors to quickly create a large number of new technologies. By the time the war had concluded, Congress favored a stronger patent system, which resulted in the 1952 Patent Act, the first major revision in the patent code since the 19th century. The result of the Patent Act of 1952 was a period of strong protection in which the patent office issued patents freely in comparison to its earlier, more rigorous examinations.

Although patents were being issued more freely to inventors, the federal court system was reluctant to uphold patent rights. In addition to being reluctant to uphold these rights, circuit courts also differed as to the doctrine and attitudes toward patents. Again, Congress responded to these developments by passing the Federal Courts Improvements Act, creating the Court of Appeals for the Federal Circuit (CAFC) in 1982. One of the original, primary functions of the CAFC has been to hear all appeals involving patents. As a result, patents are more likely to be upheld, and injunctions against patent infringers are more easily realized than earlier in the century.

Trademarks differ from patents in that they do not seek to protect something new. In fact, a trademark does not require any degree of inventiveness, only that a distinctive mark is used in commerce. Trademarks were protected in the United States through common law until 1870, when Congress enacted the first federal trademark statute. That statute was later struck down by the Supreme Court, and in its place Congress enacted the Act of 1881, which based protection for trademarks in the COMMERCE CLAUSE of the U.S. Constitution. The trademark statute was modified in 1905 and again in 1920 until, in 1946, Congress enacted the Lanham Act (15 U.S.C. §1051 et seq.), which continues to govern the protection of trademarks today.

In addition to administering the laws related to patents and trademarks, the PTO advises the secretary of commerce, the president of the United States, and the administration on patent, trademark, and copyright protection as well as all trade-related aspects of intellectual property.

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Penney & Co., J. C. A department store chain founded by James Cash Penney (1875-1971) in 1902. Born in Missouri, he worked for eight years in a Missouri dry goods store before moving west. His original store was called the Golden Rule Store and was opened in Kemmerer, Wyoming. The name was derived from his fundamental belief that customers should be given a good deal. By 1913, he had 36 stores, and the company was incorporated as J. C. Penney. During World War I and the early 1920s, the chain began to expand rapidly as store managers were allowed to open new stores, keeping one-quarter of the profits, as soon as they were successful. The simple concept led the store to its massive expansion, making it the second-largest retailer in the country by 1970.

The stores proliferated during the general chain store expansion of the 1920s. Penney opened its 500th store in 1924, but the stores were still selling mostly clothing and shoes. Store executives were active in fighting the anti-chain store movement during that decade. By 1930, the company had expanded to 1,250 stores, located mostly in towns and cities serving a wide clientele. After World War II, it moved into the suburbs that were expanding rapidly at the time and added more merchandise to its offerings. The expansion was successful, and by 1980 the company had more than 3,100 stores and employed more than 365,000 people, recording sales over \$9 billion. It also expanded into mail-order sales, competing with Montgomery Ward and SEARS, ROEBUCK & CO. International expansion also took place, with smaller chains acquired in Belgium and Italy. Penney also diversified by purchasing a drug store chain and an insurance company. By the mid-1970s, Penney was a staple of retailing and considered an anchor store in most malls throughout the country.

Penney was replaced by K-MART in the late 1970s as the second-largest retailing chain to Sears, Roebuck. After slipping in the ranks of retail CHAIN STORES, the company began a comeback in the 1990s. By the end of the decade, stores totaled 1,075 and were located in all 50 states and Mexico. The company also owned a smaller retail chain in Brazil. Its drugstore expansion also continued to be positive when it acquired the Eckerd Drugstores group, which operates 2,650 stores throughout the United States.

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pension funds Funds set aside by employers and/or employees to provide benefits for employees upon retirement. Pension funds in one form or other have existed since ancient times, although the current funds in the United States evolved from the 19th century. Originally, pension funds were provided by government employers for those who served in the armed forces. Disabled veterans have received a pension since the Revolutionary War and retired military personnel since the early 19th century. Today there are several categories of pension—public, private, and personal.

In 1875, the first private pension plan in the United States was begun by American Express Co., then a transport company. In 1880, the RAIL-ROADS became the first industry to offer a pension to their workers, and they were followed by other industries. Private plans grew during the first three decades of the 20th century until the Great Depression. Many private plans failed due to weaknesses in the market, and Congress was

forced to react. It passed the Old Age, Survivors, Disability and Hospital Insurance Program in 1935, better known as Social Security. Becoming operational two years later, Social Security was, and is, known as a nonfunded pension plan. Contributors' funds are used to pay recipients; the contributions are not invested. Social Security was meant to augment private plans, not to serve as an individual's sole source of retirement funds.

Most private plans are funded, in contrast to Social Security. This means that the contributions made on behalf of the employee are invested in the market until retirement. Private plans may be of two general types-defined benefit or defined contribution. Under a defined benefit plan, the retiree is guaranteed a specific income during retirement. Under a defined contribution plan, the employee is required to make specific payments, while the amount of payout at the end is not guaranteed. In a contributory plan, the employee and the employer make contributions to the fund, while in a noncontributory plan, only the employer does so. Private defined contribution plans are covered by insurance provided by the Pension Benefits Guaranty Board, or Penny Benny, created in 1974.

Penny Benny, a federally created agency, was created by the Employee Retirement Income Security Act (ERISA) in 1974. Private plans purchase insurance from the agency, and if they cannot provide benefits at a future date, the insurance is used to do so. The act also helped establish employee stock ownership plans (ESOPS), which allowed employees to purchase shares in the companies they worked for through a trust established by the company itself, enabling employees to become shareholders in the company that they work for. The ESOP invests in the stock of the employer, which sponsors the plan. Over the last 30 years, ESOPS have become increasingly popular as a means of compensating employees and allowing them greater participation and interest in corporate affairs.

ESOPs were developed by an attorney, Louis Kelso, in the early 1950s, and the first one was

introduced in 1956. In the 1970s, the idea was given considerable impetus when Congress passed the Employee Retirement Income Security Act, or ERISA. The act governed employee benefit plans and established guidelines by which ESOPs could be established. Among their benefits, the plans are able to borrow money in order to purchase stock, effectively becoming leveraged ESOPs. In this respect, their use becomes similar to other sorts of leveraged buyouts of company stock, such as a leveraged buyout or a management buyout, except that in this case the buyers are the employees. During the 1980s, when buyouts became popular on Wall Street in general, ESOPS were used by employees and companies to protect their interests against hostile takeovers by unwanted suitors who often threatened company pension plans as a result of their successful takeovers.

Technically, an ESOP is established when a company creates a trust and makes annual contributions to it. The contributions are then allocated to employees, depending upon certain conditions such as length of service. Employees receive the bulk of their share of the plans at termination of duty, retirement, or death. By 1999, almost 12,000 companies had established these plans, covering almost 9 million employees.

ERISA also allowed personal pension plans, which can be created by individuals independent of an employer. Individual retirement accounts (IRAs), Keogh plans for the self-employed, and 401k plans are examples. Individuals can put aside a specific dollar amount or percent of their income, and the plans are directed by the individual herself rather than by an investment manager. Some of these plans are also portable and may be carried from employer to employer rather than terminated when an employee leaves for another position. The personal plans were created in part to augment Social Security, which was under financial pressure in the early 1970s.

Beginning in the 1980s, Congress allowed pension plans to become portable, meaning that they could be funded by employees, regardless of employer. These plans, known universally as 401k plans, became extremely popular since employees could control the investments. However, with the decline of the stock market that began in 2000, many of these plans were seriously eroded since many of them were heavily invested in equity investments rather than being balanced with other investments.

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petroleum industry The petroleum industry in the United States was created to exploit what would become a recurrent theme in its history, diminishing supplies of consumer products that were increasingly in demand, accompanied by rising prices. At the mid-point of the 19th century, petroleum products were illuminants, principally derived from animal tallow and spermaceti whales, and were long the most widely used source in candle making. The amount of light produced and the limited lifetime of candles made them less desirable than oil lamps, which had been in use for millennia but were improved through enhanced lamp design and the use of fuels that produced more light and burned longer, product characteristics in special demand in factories and urban homes. The most desirable fuel, whale oil, was in diminishing supply, as over-hunting thinned herds, decreased yields, and led to mounting prices. Substitutes, including camphene, distilled from turpentine, were developed during the 1830s, but extreme volatility limited their use until lamp improvements during the following decade lessened the risk of explosion.

Anticipating opportunity in this situation, inventors and entrepreneurs in Europe and America experimented with the refining of oils extracted from coal and shale, developing refining processes that yielded commercially useful oil, though its flash point was commonly so low that consumers generally viewed the product as hazardous. Coal oil proved to be popular, prompting the construction of about 400 plants in urban centers of the United States by 1860.

In the United States, several groups of scientists and entrepreneurs sought improved lamp design and a raw material more accessible and cheaper to process than coal and shale. One group, including members in New York City and at Yale University, was especially venturesome, particularly after Professor Benjamin Silliman Jr.'s laboratory experiments demonstrated that refining could extract at least half of the light fractions of crude oil, often found in surface seepages, notably in northeastern Pennsylvania. In 1857, the Pennsylvania Rock Oil Company hired Edwin L. Drake, a one-time railroad conductor, to drill on leases it had acquired in the vicinity of Titusville, in northwestern Pennsylvania. After a transfer of the properties to the Seneca Oil Company, Drake commenced operations, proceeding slowly and with frequent delays until August 28, 1859, when the crew brought oil to the surface. Drake's well, modest by comparison to later discoveries in Pennsylvania and elsewhere, demonstrated that it was possible to discover and produce crude oil in commercial qualities by drilling. An industry was born.

Its early years were no less turbulent than the decades that followed. As oil men drilled along Oil Creek and in other creeks and valleys in the region, they brought in wells that ranged from token producers to what were at the time described as elephant wells. The well brought in

by New York oilman Orange Noble in 1863, flowed 3,000 barrels per day for a few months, then tapered off to 300 barrels less than two years later. In the meantime, it and several other wells flooded the market for crude oil, driving prices downward throughout what became known as the Oil Producing Region of Pennsylvania. Prices, between \$18.50 and \$20 per barrel early in 1860, dropped to \$4 by mid-year. By the end of the following year, prices stabilized briefly at \$2.00. Thereafter, price volatility continued to define the economics of oil as exploration and production spread to other parts of Pennsylvania and New York, and then to West Virginia, Ohio, Indiana, California, Kansas, Oklahoma, Texas, Arkansas, Louisiana, and other states.

During the first decade of activity, refiners typically clustered in cities that were accessible by water and rail as well as in the producing regions. Many of the plants were small, and little more complicated than moonshiners' stills. For the most part, all of the processors aimed at yields of kerosene, which enjoyed a cost advantage over competing illuminants. By the 1870s, however, several notable changes, among them the construction of more efficient 500- and 600barrel capacity operations, gave the larger refiners who could raise \$100,000 or more for such plants significant cost and price advantages over smaller operators. From that time, refiners such as Charles Pratt & Co. of New York City and Standard Oil of Cleveland improved market position and emerged as leading purchasers of crude oil. During the late 1870s and early 1880s, Standard, led by John D. ROCKEFELLER and his associates, built a vast refinery capacity at multiple sites and bought out or merged with leading competitors, to the point that the company controlled about 90 percent of American refinery capacity by the mid-1880s.

The emergence of Standard as the dominant American refiner prompted widespread objection and criticism, notably by smaller competitors and wholesalers; the latter lost valuable commissions when Rockefeller's company expanded into wholesale operations in both the United States and abroad. With allies of their own in the press and in politics, Standard's critics unleashed a barrage of litigation and legislative attacks, keeping the company and Rockefeller in the headlines for more than four decades. Controversy over the company and its competitive methods increased when it expanded its operations into pipelines and oil production during the 1880s and 1890s, taking it into court in most producing states and deepening its political problems.

Finally, during the first decade of the 20th century, the vast company was sued under the SHERMAN ACT in a federal court in Missouri. When the case reached the U.S. Supreme Court in 1911, the Court broke up Standard Oil into 33 components. As the new companies, including



An Oklahoma well strikes oil (LIBRARY OF CONGRESS)

Standard of New Jersey, Indiana, California, and Ohio, defined their marketing areas, they emerged as competitors in contiguous territories. They joined a number of new companies that formed after the discovery of massive quantities of oil in the Southwest, most notably at Spindletop, near Beaumont, Texas, in 1901 and in other sections of Texas, Oklahoma, Arkansas, New Mexico, and Louisiana. Gulf Oil and Refining, the Texas Company, Shell, Sun, and other new companies proved to be aggressive competitors, fighting for both regional American and foreign markets, further paring the dominance of the Standard group.

With the shift of production and processing westward, oil operations were increasingly managed from new oil centers, including Houston and Tulsa. The political climates of Texas and Oklahoma could not have been more supportive of the new industry. In Texas, the Railroad Commission first assumed regulatory responsibility for pipelines, then became the enforcer of early environmental regulations such as the limitation of run-off oil into rivers and streams. The commission also attempted, with less success, to limit drilling on small tracts and to slow the pace of field development to lessen waste and social disruption that often stemmed from the boomtype development of petroleum resources.

During the second and third decades of the 20th century, additional improvements in refining and processing increased the efficiency of plants, as continuous process production appeared after its development by the Nobel brothers in pre-revolutionary Russia. Further advances processed crude oil at higher temperatures and pressures, removing a greater proportion of the light fractions that yielded gasoline, in soaring demand because trucks and automobiles were rolling off assembly lines in growing numbers. By 1920, more than 9 million vehicles were registered in the United States and were served by more than 140,000 gas stations by the end of that decade.

Growing demand for petroleum products was more than matched by new discoveries of oil reservoirs. Areas of northern and central Texas, Oklahoma, Louisiana, the Texas Panhandle, and the Permian Basin of Texas and New Mexico came into production to supplement new discoveries in California and in the Texas Gulf Coast area. In California, Shell's discovery at Signal Hill in 1921 launched a new chapter in California oil, while the opening of the Greater Seminole Field in Oklahoma during 1926 sustained that state's strong flow of crude oil. Most notably, the Permian Basin region opened during the mid-1920s, with a long series of commercially significant discoveries stretching into the 1950s, when it became-as it remains-the principal oilproducing region in the lower 48 states. By the late 1920s, the new discoveries had long since replaced long-standing reserves and often flooded markets at least briefly with enough new crude oil to lower prices significantly. Typically, the effects were short-lived as producers negotiated voluntary limitations on production.

Voluntary measures were impossible to negotiate after the giant East Texas Field began producing on October 3, 1930. Running through five counties, the vast reservoir was cheap to penetrate, while a large proportion of the leases were in the hands of hundreds of independent producers who drilled quickly, on as little land as possible, and sought a quick return of capital from the high-gravity, low-sulphur crude. The impact of the discovery was fast and widespread, driving the price of oil as low as a dime a barrel, destabilizing markets, and lowering the asset values of large companies that held substantial reserves elsewhere, kept in storage. Many operators and companies were pushed to the edge of financial failure.

Some large leaseholders, including Humble Oil and Refining (an SONJ subsidiary) and H. L. Hunt, the largest independent in the field, supported production restrictions in the interest of long-term gain. Other large companies, including Gulf and Texaco, like many of the independents, needed crude oil and the income it generated in the short term and opposed intervention by the Texas Railroad Commission, originally created in 1891 to set shipping rates on intrastate railroad lines. The divisions among oil and gas producers prompted litigation at every step. When the commission issued orders limiting production, the matter ended up in both state and federal courts, losing in both jurisdictions in 1931. In August, local officials requested a martial law decree, which Governor Ross Sterling, once head of Humble, issued. By October, Texas National Guard troopers were in the field, attempting to enforce commission restrictions. Several months later, a federal judge declared that action illegal. And so it went from field to court and back.

The passage of the National Industrial Recovery Act in 1933 provided federal support for restrictions by making illegal the interstate shipment of oil produced in excess of a state regulatory body's limits. In 1934, federal courts accepted the commission's authority and that of comparable bodies in Oklahoma and other states to restrict production to prevent economic waste. After the U.S. Supreme Court struck down the NIRA, the Connolly Hot Oil Act of February 1935 reestablished federal enforcement of state regulatory limitations. In the same year, creation of the Interstate Oil Compact facilitated cooperation among state regulatory agencies. By then, the East Texas Field was declining to some extent, but the bill was of continued importance because other significant discoveries in Texas and elsewhere would have swamped oil markets had regulators been unable to control production.

The device used would prove to be historically important: Refiners provided estimates of their demand for feedstock, and the Texas Railroad Commission set state production to match a portion of it. Regulators in other states—excepting California and Illinois, which lacked agencies—adjusted their figures accordingly. The Texas body was fixed with responsibility for sustaining prices and allotting production. Its system was long observed by oilmen and politicians around the world, leading foreign producers to create a comparable international body when they created the Oil Producing and Exporting Countries organization after World War II. In the meantime, volume and hence price were determined by a previously obscure group of three elected officials in Austin, Texas.

Exploration continued at a diminished pace during the first half of that decade, though notable additions to crude oil reserves were made in Texas and Louisiana, along with additional discoveries of natural gas. Long-distance pipelines were constructed to connect gas fields with urban centers in those states and in the middle west. Of longer-term consequence, the increasingly abundant gas would supply essential feedstock for the nascent petrochemical industry, which appeared during the late 1930s when Shell and Esso began to produce 100 octane aviation fuel to feed synthetic rubber and other processing companies.

World War II demand for gasoline forced state regulators to open up the valves, with the East Texas Field producing at maximum capacity because of its proximity to refinery and pipeline systems. To facilitate shipments to East Coast refineries, the federal government paid for the construction of the Big Inch and Little Big Inch pipelines, which linked Gulf Coast fields with middle-western pipelines, connecting to lines that carried crude oil to refineries along the East Coast. Gasoline was rationed during the conflict, in some measure to conserve short supplies of rubber required to produce tires.

Gasoline rationing was ended officially the day after Japan surrendered in 1945. Response to pent-up demand put a record number of vehicles on American highways—26 million in 1945 and 40 million by 1950. With the beginning of the interstate highway system in 1956, nearly 43,000 miles of super-highway would be created to carry the swelling number of cars and trucks. Conversion of coal-users to natural gas and fuel oil swelled the markets for both commodities, with the former increasing nearly threefold in interstate shipment between 1946 and 1950. Fuel oil

was increasingly competitive, until 1958 it was cheaper than coal per unit of heat generated. During succeeding decades, demand for crude oil continued to soar, from 5.8 million barrels per day in 1948 to 16.4 million barrels per day in 1972.

Though new oilfields were discovered in Alaska, Louisiana, Texas, and other states after World War II, supply did not keep up with demand. U.S. production peaked at 11.3 million barrels per day in 1970, leaving a balance of more than a million barrels per day to be secured from foreign fields, principally in Mexico, South America, and the Middle East. Imports grew from 3.2 million barrels per day in 1970 to 4.5 million two years later and 6.2 million in 1973. Increasingly, American refiners looked to foreign sources for feedstocks.

American companies, with the general support of the government, had been involved in the creation of concessions and spheres of interest in Venezuela, Colombia, Mexico, and the Middle East. With the famous "Red Line Agreement" of 1928, U.S. companies acquired the right to purchase nearly one-quarter of the crude produced in the Middle East, excluding Kuwait and Persia. During the 1930s, Texaco, Esso, Mobil, and Chevron signed concession agreements with Saudi Arabia; Gulf Oil participated in a concession in Kuwait; and Esso and Mobil were included in an Iranian concession. As these concessions were developed during the postwar period, they produced increasing volumes of low-cost crude oil, with Middle Eastern production soaring 15-fold between 1948 and 1972.

The vast amounts of foreign crude kept refineries supplied, but they also depressed domestic prices, even after voluntary limitations on imports began during the second Eisenhower administration. Domestic drilling slowed, both in response to imported crude and because domestic exploration yielded few large new discoveries—with two notable exceptions. The Prudhoe Bay Field of Alaska, on pipeline in 1977, 10 years after its discovery, proved to be almost as vast as the East Texas Field. The second major play began in the waters of the Gulf of Mexico in 1947, with Kerr-McGee's discovery in Block 32, nearly 11 miles off the shore of Louisiana. Thereafter, offshore exploration, including expensive and time-consuming projects by Shell and other companies, continued to be a major source of domestic crude oil.

However, oil-finders abroad continued to locate even larger fields, including discoveries in Algeria in 1956 and Libya in 1959, and along the west coast of Africa and in the North Sea. Mounting consumption in Europe and Asia absorbed much of the new production, to the point that spare crude oil production capacity was nominal by 1972. In response, producing countries drove harder bargains with buyers, acquiring a larger ownership in firms that still held concessions and nationalizing the companies during the first half of the 1970s. Libya, Saudi Arabia, Kuwait, and other producing countries also worked through the Oil Producing and Exporting Countries organization. The Arab members of this group cooperated in a boycott of shipments to the United States and the Netherlands after both nations supported Israel during the 1973 Yom Kippur War, and they coordinated production for most of the rest of the decade to increase their profit.

Results of tighter supply and higher prices appeared at gas pumps in the United States and other countries. During late 1973, for example, retail gasoline prices rose by nearly 40 percent in the United States. Occasional shortages and price boosts occurred thereafter, notably after Iraq attacked Iran in 1980 and after the Iraqi invasion of Kuwait in 1990. Price fluctuations were more common when oil was traded on a short-term basis, becoming notably volatile after the New York Mercantile Exchange began to sell crude oil futures in 1983. Prices on NYMEX moved rapidly in both directions, reaching \$31.75 in November of 1985 before falling to \$11 several months later.

Extreme price volatility prompted major companies to retrench, cutting labor forces and



Texaco gasoline station, 1936 (New York Public Library)

launching large-scale merger and acquisition programs to realize economies of scale. Exxon, one of the biggest, cut its labor force by 40 percent during the 1980s. Others were caught up in the widespread restructuring of the American industry. Mobil acquired Superior Oil, a large independent producer, before it merged with Exxon. Texaco bought Getty before it was purchased by Chevron, which also acquired ARCO. Phillips got General American, a large crude oil producer, then merged with Conoco.

From the 1970s onward, major changes occurred in the downstream sector of the industry as petrochemical complexes, especially those along the coastline of the Gulf of Mexico, continued to expand. In the face of increasingly strong foreign competition, the American installations pursued economies of scale and diversification of product strategies. Refineries also changed, most often to meet environmental standards and to produce locally mandated fuel blends. Overall, American refining capacity declined by about one-quarter after 1970 as the cost of meeting these requirements made some installations unprofitable and others lost indirect subsidies such as foreignimport entitlements as federal policies changed.

With every merger, the overall industry workforce contracted, a trend that also reflected the decline of onshore exploration beginning in 1983. By the mid-1990s, the total industry workforce in the United States was about half of what it had been 20 years earlier. In the end, many of the sizable independents had disappeared, and the Seven Sisters, the largest multinational oil companies, were only four in number. They-Exxon/Mobil, British Petroleum, Shell, Chevronwere looking far afield, in newly independent states that were once part of the Soviet Union and in most other parts of the world, for crude oil. Their searches and those of French, Chinese, Norwegian, and other national companies were often successful, but the continued increase in worldwide demand left little cushion against short-term disruptions of supply, such as that which began with the war between the United States and Iraq in 2003. Supplies-and fears of shortages-were endemic, with an accompanying price volatility that was almost as sharp as that of the early days of Pennsylvania oil.

See also Automotive industry; chemical industry.

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Roger Olien

pharmaceutical industry When Europeans first settled North America, there were few apothecaries, and medicines were usually prepared at home. Apothecaries would prepare each medicine for an individual patient or customer. There was no manufacturing industry in the sense of preparing large amounts of materials for many patients. Medicines were prepared using botanical and chemical ingredients, frequently imported from Europe and sold to anyone who asked for them. Early manufacturing began on a local scale; the population was too scattered, transportation limited, and knowledge unstandardized to support large-scale manufacturing.

The first move to a manufacturing industry in America was a direct result of the Revolutionary War. As the Revolution began, individual apothecary shops were unable to meet the demands of large armies. Andrew Craigie was appointed the first apothecary general of the Colonial army, with one of his first tasks being the establishment of a laboratory and storehouse in Carlisle, Pennsylvania, to prepare medicines and medical supplies for the military.

Philadelphia was the birthplace of American pharmacy and pharmaceutical manufacturing. By 1786, Christopher Marshall Jr. and Charles Marshall were manufacturing muriate of ammonia and Glauber's salt, a cathartic. By 1818, a precursor firm to Powers & Weightman began manufacturing quinine. Other manufacturing pharmacies in New York, Baltimore, and Boston were small concerns serving only regional markets.

Three conditions were necessary for the growth of an American pharmaceutical manufacturing industry: a sizable population, an ability to transport raw materials and finished goods,

and the need for standardized products. By 1830, immigrants arriving in New York City from Europe were flooding the interior of the country. By 1860, the population of the 33 states in the Union was more than 31 million. RAILROADS were being built, and by 1860, there were more than 30,000 miles of track; in 1869, the East and West Coasts were linked by the first intercontinental railroad. The increasing population provided a market of considerable size, and the transportation system could quickly move products almost anywhere in the growing country. In 1848, the United States passed the first law restricting importation of substandard medicinal products. There was a growing awareness of the need to standardize such products so that quality and consistency could be assured. The time was right for the transition of pharmaceuticals from the status of a cottage industry to that of large-scale pharmaceutical manufacturing.

Although an unfortunate misnomer, the American patent medicine industry was an important part of the manufacturing industry in the 1800s. Patent medicines had secret formulas and extravagant claims but were not really patented since a patent requires public disclosure of ingredients. The popularity of these products was largely a consequence of the distrust or unavailability of physicians. The accepted therapies of the period were supposed to restore the body's balance, typically by bleeding, blistering, purging, or vomiting. There were few physicians except in the cities, and in many cases their high fees were prohibitive except in the most dire of situations. Patent medicines were easy to obtain since almost every type of mercantile establishment sold them; in the rural areas, traveling shows would bring medicine and entertainment at the same time. Many patent medicines were little more than alcohol or colored water, and others contained what would later be identified as dangerous ingredients, including morphine, opium, and cocaine.

Advertising greatly aided the growth of patent medicines. In addition to the traveling show,

manufacturers advertised heavily in local newspapers. Some manufacturers developed other ways to advertise their wares. For example, the Lydia Pinkham Company solicited letters about health care issues from women, assuring the writers that only women would read the letters and provide a personal response. The passage of the Pure Food and Drug Act in 1906 ended many of the worst abuses of the patent medicine industry.

The Civil War marked the emergence of a cohesive manufacturing industry that was separate from the pharmacy. Once again, the military's need for medicines constituted a critical mass of potential customers. Several companies, such as Frederick Stearns & Company, founded in 1855, and E. R. Squibb, founded in 1858, were



Typical 19th-century advertisements for medicines promising relief (LIBRARY OF CONGRESS)

major suppliers to the Union army. Military veterans, such as Eli Lilly of Indianapolis and A. H. Robins of Richmond, began their companies after returning from the war.

Most companies of this period bore the name of the founder, and companies were typically called a "house," such as the House of Squibb, noting the personal nature of the enterprise. John Wyeth, William Warner, Louis Dohme, Silas Burroughs, and Henry Wellcome were pharmacists, while Walter Abbott and W. E. Upjohn were physicians. A few, such as E. Mead Johnson and Hervey Parke of Parke Davis, were businessmen. The eponymous nature of the industry was important in the days prior to REGULATION of products, since it was the name and reputation of the individual that guaranteed the standards of the product. Many companies produced the same standard items, with the only differentiation in the marketplace being the name of the manufacturer.

During the post-Civil War period innovation usually focused on new and improved dose forms rather than on entirely new medicines. For example, Upjohn manufactured and marketed a friable pill that was developed to dissolve in the stomach rather than pass unchanged through the body. William Warner's company developed a process to make sugar-coated pills, and Walter Abbott developed dosimetric granules. John Uri Lloyd took a different approach and manufactured botanical "specifics" for the eclectic physicians of the period. Throughout the 19th century and the beginning of the 20th century, there were few national manufacturing companies such as Squibb and Lilly; most remained specialty or regional manufacturers, and few were engaged in research.

The American pharmaceutical industry of the early 20th century was predominantly a manufacturing industry. Individual companies started by serving a geographical region with an assorted line of standard products or by championing a specific dose form or manufacturing process. The catalogs of the larger manufacturers ran to several hundred pages; many pharmacies would identify themselves as a supplier of Squibb products or those of Lilly, Wyeth or Parke Davis. When one company brought a new product to market, it could be quickly copied and supplied by a number of other companies.

Some manufacturers marketed their products only to physicians and pharmacists and identified themselves as "ethical" to distinguish themselves from producers of patent medicines and other products sold directly to the consumer. In 1939, no single ethical drug manufacturer had a sales volume as great as the large department stores in New York and Detroit, and the total sales volume for all 1,100 pharmaceutical companies was \$150 million at the manufacturing level.

Scientists, such as Pasteur and Koch, had discovered the causes of some diseases by the end of the 19th and beginning of the 20th centuries. These discoveries led to the development of serums and vaccines, or biologics, to treat diseases such as rabies and diphtheria. Diphtheria was one of the most common childhood diseases of the period, and a specific serum to treat it was a major breakthrough. The H. K. Mulford Company was the first to produce reliable serum in the United States, and by 1895 health departments in major cities, such as Cincinnati, Boston, and St. Louis, were also producing serum. Tragedy struck in 1901 when serum produced by the St. Louis Health Department was contaminated and a number of children died. Similar tragedies with the use of other biologics were reported in the United States and in Europe; the response was the passage of the first U.S. law to regulate the safety of biological medicines in 1902. Parke Davis & Company, H. K. Mulford, and Lederle Antitoxin Laboratories were among the forerunners in producing a broad array of serums, antitoxins, toxoids, and vaccines.

The Food and Drug Law of 1906 was passed primarily to address unsanitary conditions exposed by Sinclair Lewis's *The Jungle*. Although the law initially focused on the abuses in the food industry, it was broadened to include the problems of the patent medicine industry. The Department of Agriculture's Bureau of Chemistry, headed by Harvey W. Wiley, was assigned to enforce the law. The law, however, covered only adulterated or misbranded products in interstate commerce. The 1912 Shirley Amendment broadened the law so that medicines could not be labeled with any false statement, a hallmark of the patent medicines of the period. Reputable manufacturers were in favor of the regulations, since they had analytic laboratories and could already meet the requirements of the law.

The first association of pharmaceutical manufacturers, the American Association of Pharmaceutical Chemists, was formed by family-owned small businesses in 1910, largely as a result of the new regulations. A second association was formed by larger companies in 1912. The agenda of the two associations was similar: to share information on common problems such as taxes and regulation, and to develop high manufacturing standards. In the 1950s, the two groups merged and in 1994 became the current Pharmaceutical Research and Manufacturers of America (PhRMA).

The Department of Agriculture's Bureau of Chemistry became the Food and Drug Administration in 1931, when new regulatory power was sought to strengthen the 1906 act. In 1937 Massengill, a respected family firm in Tennessee, marketed a new liquid form of sulfanilamide using diethylene glycol as the solvent-but without testing the product for toxicity. The combination was deadly, and more than 100 people, mostly children, died as a consequence. In response, the Food Drug and Cosmetic Act of 1938 was quickly passed, requiring manufacturers to prove that a new medicine was safe before interstate marketing could begin. The law also required labeling that led to the distinction between products that could be sold only on prescription and those that could be sold over the counter (OTC) for self-treatment.

At the beginning of World War I, America was dependent on other countries for many of its medicines. Important botanicals, such as morphine and belladonna, were primarily grown elsewhere. Germany was the leader in developing new medicines using synthetic chemistry and protecting its markets through patents in countries with major markets. With the outbreak of hostilities, American scientists were able to determine how to produce important medicines such as the first chemotherapeutic agent, Salvarsan, used to treat syphilis; procaine, the first injectable local anesthetic; and barbital, a barbiturate used as a sedative. After the war the patents were seized as alien property and auctioned. Sterling bought the trademark for Bayer aspirin through this process.

A number of the ethical manufacturers either started or expanded their research programs after the war. Some companies forged alliances with academic institutions to carry on basic research, while others, notably Lilly, Squibb, and Merck, established corporate institutes for basic research, in addition to the analytical services undertaken by others. In spite of the growing interest, most new developments continued to come from European companies, and at the beginning of World War II the United States was once again dependent on imports for medicines.

During World War II, the focus of pharmaceutical research was determined by the government and was characterized by teams from the pharmaceutical industry, academia, and the government working together. The debilitating disease of malaria was common in most of the combat areas during World War II in the Pacific theater. The world supply of medicinal-grade quinine had come from the East Indies (now Indonesia), which had been conquered by the Japanese military. The only alternative was Atabrine, a complex synthetic chemical patented by Germany's I. G. Farben. In less than a year, the process was duplicated by Winthrop scientists. Winthrop and other companies provided millions of tablets for Allied forces during the war.

The basic work on blood transfusions done by clinicians and academics was applied to the need to produce and ship millions of units of blood products. The pharmaceutical industry developed techniques and production facilities devoted to processing the fragile material into dried plasma and albumin. The American Red Cross collected more than 13 million pints of blood that was processed by 11 companies, including Abbott, Hyland, Lederle, Lilly, Parke-Davis, Squibb, and Wyeth.

Another example of teamwork was the development of penicillin. The early research was coordinated by a group of three East Coast companies (Merck, Pfizer, and Squibb), but the team quickly expanded to add a Midwest group (Abbott, Lilly, Parke Davis, and Upjohn) plus three companies unaffiliated with either group (Lederle, Reichel Laboratories, and Heyden Chemical). In 1943, the total production was limited to the military. In 1944, six additional companies (Ben Venue, Cheplin, Commercial Solvents, Cutter, Sterling, and Wyeth) were added to build production capabilities, enabling the War Production Board to authorize civilian distribution.

After the war, the industry was still relatively small, and many companies still had founding family connections. Some companies, such as G. D. Searle, focused their efforts by region or specialty, while others, such as Eli Lilly, Parke Davis, and E. R. Squibb, marketed a broad line of products. A number of companies entered the industry for the first time. Bristol Laboratories, a manufacturer of toiletries including the laxative Sal-Hepatica and Ipana toothpaste, acquired Cheplin Laboratories, a wartime producer of penicillin. Pfizer, a chemical company, used its involvement in the penicillin effort to launch its pharmaceuticals business.

Many companies, adopting research as the engine of growth, invested heavily to take advantage of new scientific and technological discoveries. Growth was spurred by the discovery of new products, many providing effective treatments for the first time. A vigorous search for new antibiotics soon produced streptomycin (Merck, 1945), chlortetracycline (Lederle, 1948), and chloramphenicol (Parke Davis, 1949). This was the period of miracle drugs. In addition to antibiotics, the immediate postwar period was marked by major advances in a number of therapeutic areas, including vitamins, antihistamines, and hormones. With the exception of antibiotics, most of the attention was on treating symptoms. By the 1960s, research was increasingly focused on addressing problems associated with heredity, diet, and environment. Major discoveries included the first oral contraceptives, nonsteroidal anti-inflammatories, and the anxiolytics beginning with Librium.

Until the emergence of the postwar research industry, most medicines were available from a number of different companies. Manufacturers typically made products that were listed in the United States Pharmacopoeia or the National Formulary under their own brand names. Pharmacists had the option of deciding which manufacturer's line of standard products to use in filling prescriptions. However, in an attempt to control a growing counterfeit problem in the early 1950s, states passed laws to restrict the choice of products to the prescribing physician. If a physician wrote a prescription using the generic name, then any manufacturer's product could be used; otherwise, only the specified brand name could be used. Repeal of the antisubstitution laws in the 1970s was fueled by the desire to contain costs and the reduced risk of counterfeiting. However, substitution was not popular with patients, physicians, or pharmacists.

In the 1980s, the cost of medicines once again became a legislative force, culminating in passage of the Drug Price Competition and Patent Term Restoration Act, also known as the Waxman-Hatch Act. The law provided for an extension of patent life for time lost due to regulatory delays while streamlining the approval of generic products. The law modified and simplified the Abbreviated New Drug Application process, which resulted in an easier entry to the market for generic manufacturers.

In 1952, the Humphrey-Durham Amendment to the Food, Drug and Cosmetic Act (FDCA) established the criteria for distinguishing between the two categories of medicines in the United States—prescription and nonprescription. The criterion was that products that needed to have professional oversight were to be available only by prescription, while products that could be labeled for safe use by the public could be available without a prescription.

In 1962, tragedy again struck. Senator Kefauver's congressional hearings on marketing practices and pricing in the pharmaceutical industry were transformed by the publication of the story of birth defects due to the use of a sedative, thalidomide. The 1962 FDCA amendments added the requirement that any new product had to be tested for efficacy and approved by the Food and Drug Administration prior to marketing. While these requirements would not have changed the outcome of the thalidomide tragedy, since the product was an effective sedative and was never marketed in the United States, they did change the industry by significantly lengthening the time that it took a new medicine to reach the market.

The American biotechnology industry was largely formed by academics working in molecular biology rather than as a part of the established pharmaceutical industry. Genentech, established in 1976, was the first biotech firm that specialized in the pharmaceutical field. Genentech focused its research on insulin and growth hormones, licensing Lilly to market its first product and the first human biotech medicine, Humulin (human insulin), in 1982. Genentech soon built an organization that included research, development, and marketing. A number of other companies, Biogen in 1978, Amgen in 1980, and Immunex in 1981, were established to discover new medicines. Other companies' strategy was to do the research and then license potential medicines to the pharmaceutical industry to develop and market. Today the lines between the biotech industry and the pharmaceutical industry have blurred or disappeared through internal growth, MERGERS, and acquisitions.

Like most other industries, the pharmaceutical industry has gone through cycles of merger and acquisition. Such unions have been formed to allow companies to gain new skills, technologies, and products that translate to economic growth and success. Merck, for example, gained skills in vaccines with the acquisition of H. K. Mulford and continued its transition to a company specializing in pharmaceutical chemicals with the acquisition first of Powers-Weightman-Rosengarten in 1927 and of Sharpe & Dohme in 1953. Others companies increased their size by licensing products from European discoverers. Many of the early tranquilizers were discovered by the French firm Rhone Poulenc; Smith Kline & French licensed rights to Compazine, while American Home licensed Pherergan. As the decision making shifted from physicians to health maintenance organizations and insurance companies in the 1990s, several pharmaceutical companies diversified by acquiring prescription plan companies, as in Merck's acquisition of Medco.

The American pharmaceutical industry of the 21st century bears little resemblance to its roots. Perhaps this is most evident by the names of the companies. Few companies bear the name of their founder or place of founding. Instead, new names are constructed, such as Aventis and Novartis, or glided past the point of easy historical recognition, such as GlaxoSmithKline and AstraZeneca.

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Phillips curve An economic model showing a trade-off between inflation and unemployment. In 1958, economist A. W. Phillips (1914–75) gave the formulation of the Phillips curve, relating the

rate of wage inflation to the excess demand for labor. In its short-run form, a trade-off exists between wage inflation and unemployment. As the unemployment rate decreases and the excess demand for labor increases, an upward pressure on wages exists.

While the Phillips curve concept has evolved since 1958, originally it was widely interpreted to posit a stable wage inflation-unemployment trade-off. But monetary policy makers specify inflation targets in terms of output prices. As a result, it was necessary to transform the wage change-unemployment relationship to a price change-unemployment relationship. Accordingly, the expectations-augmented form of the Phillips curve (a non-market-clearing view) asserts a trade-off between unemployment and unexpected price inflation. This transformation assumes that prices are set with a mark-up over unit labor costs so that they move in step with wages.

With this view, the power of policy to alter economic activity depends on how price expectations are formed. Specifically, the inflation-unemployment trade-off vanishes when expectations are realized. At this point, the unemployment rate returns to its natural rate. This version predicts that the potential success of monetary policy depends on the speed of adjustment of price expectations. In addition, policy makers may determine the level of unemployment associated with a target rate of inflation. Alternatively, the Phillips curve was interpreted as offering a number of inflation-unemployment combinations from which policy makers could choose. Given economic circumstances, they could choose a particular mix of inflation and unemployment that would minimize social cost.

Policy makers could also use the framework to estimate the effects of policies that were intended to produce a more favorable Phillips curve, such as a policy that would lower the amount of unemployment associated with a certain level of excess demand. An alternative, market-clearing version of the Phillips curve assumes a labor market in equilibrium. Deviations of unemployment from the natural rate result from misperceptions about inflation. The unemployment rate returns to its natural rate when misperceptions end. Empirical evidence in the 1960s and 1970s seemed to validate Phillips's empirical estimation. But in the 1990s, as the U.S. economy combined low and stable rates of wage and price inflation with a decline in the unemployment rate, professional and public confidence in the Phillips curve waned.

Today, many economists view the Phillips curve as offering no trade-off at all. The problem with the Phillips curve, according to some economists, is that it focuses on empirical estimates of price-based specifications. For instance, with the unemployment rate decreasing in the 1990s, nominal wages increased around 4 percent annually during the last half of the decade, but the annual rate of price inflation fell. During the last half of the 1990s, the Phillips curve framework did not explain the unemployment–price inflation tradeoff.

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Thomas R. Sadler

Ponzi, Charles (1882–1949) *swindler* Ponzi loaned his name to a classic fraudulent scheme in which new investors' money is used to pay off older investors who may demand that their investment be cashed out. He acquired a fortune of \$9.5 million in 1920, before his enterprise fell apart in the summer of that year. The notoriety of his actions caused his name to be linked with a common speculative scheme called "a Ponzi scheme."

The ingredients specific to his enterprise were the sale of promissory notes paying a 50 percent return in 45 days, and the payment of the returns on his notes for a time, while relying on new investors to purchase more notes. However, the general scheme—whereby the initial entrants do well and the latter ones take losses—had been common to other speculative episodes. For example, John Law's early-17th-century venture involving the Bank of Paris and his land speculation company, "the Mississippi Company," used the same general method to create a fortune before it collapsed.

Ponzi's activities centered about Boston, at a time when New England was fertile ground because of the large number of immigrants living in the area. Land speculation in Florida was taking on visibly dramatic proportions in the national media, while the U.S. economy was experiencing the 1918-19 and 1920-21 recessions. To facilitate the growth of his operation Ponzi purchased 38 percent of Hanover Trust Company stock, before the Massachusetts commissioner of banks got involved. The bank collapsed after Ponzi's first overdraft to pay the returns on his promissory notes. Another swindle involved selling postal reply coupons to immigrants, claiming that they could resell them for a fortune. That scheme was exposed after the New York Times ran an exposé. He was arrested on August 12, 1920. His Lexington mansion and other assets were seized.

Ponzi had sufficient background and education to swindle the unsuspecting. Born in Italy to a well-to-do family, he envisioned his goal as one of getting rich. Seeking to avoid the stigma of having to work, his varying schemes were uniformly illegal. After serving out a prison term in Massachusetts, Ponzi died in a Rio de Janeiro hospital, "leaving an estate of \$75 to cover funeral expenses." Because of his various schemes, his name has become forever linked to frauds that pay old investors with new investors' money.

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William Frazer

predatory pricing As treated under the federal ANTITRUST laws, predatory pricing is the offense of setting below-cost prices temporarily in order to drive competitors out of business or extort them into raising their own prices. Progressive and New Deal lawyers as well as smallbusiness persons believed that predatory pricing historically was relatively easy for large firms with deep pockets, such as Standard Oil.

The SHERMAN ACT prohibition on predatory pricing was strengthened in 1914 by passage of the CLAYTON ACT, which expressly addressed the offense of charging low prices in a targeted market in order to destroy a rival, while raising one's prices elsewhere in order to finance the predation campaign. This statute repeatedly was used to condemn aggressive price cutting. Beginning in the 1960s, however, many economists began to argue that predatory pricing is expensive, extremely risky, and unlikely to succeed except in a narrow range of circumstances-namely, for a clearly dominant firm in a market in which new entry is very difficult or impossible. Indeed, many economists have come to believe that "classical" predatory pricing, or creating a monopoly by temporarily charging prices below cost, does not exist.

In 1975, Harvard professors Phillip Areeda and Donald Turner responded to these concerns with a very strict test for predatory pricing, requiring proof of prices below cost, and also that the predator could reasonably predict monopoly returns that would exceed the costs of the predation. The federal courts have largely adopted this test, with the result that there have been almost no successful predatory pricing lawsuits since the mid-1970s.

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Public Utility Holding Company Act (1935) Symbolic of Franklin D. Roosevelt's Second New Deal, which focused on long-term social welfare, the Public Utility Holding Company Act (PUHCA) was designed to eliminate unfair business practices and abuses by electrical and natural gas holding companies. Written by the president's close associates Benjamin Cohen and Thomas Corcoran, the bill also represented Roosevelt's continuing reform of Wall Street.

The background to PUHCA was in the technology of the utility industry, which facilitated the use of corporate holding companies. When combined with economies of scale, the utility industry moved toward consolidation in the 1920s. By 1932, only three holding companies controlled nearly 50 percent of all American electrical output. Given the states' ineffectiveness in regulating utility companies, more and more critics charged the utility companies with high rates, unreliable service, and excessive profits. With the onset of the Great Depression and utility companies going into receivership, the federal government opted to regulate them.

Although opposition was strong and effective in watering down the original bill, Roosevelt had Congress pass the Federal Power Act (establishing a federal utility regulatory structure) and the Public Utility Act of 1935. Title I of the latter law is known as the Public Utilities Holding Company Act. PUHCA required federal control and REGULATION of interstate public utility holding companies. Utility companies were given an "exclusive service territory" in return for their commitment to providing reliable service at a regulated rate. A "death sentence" provision provided that all holding companies that were more than twice removed from their operating subsidiaries could be abolished by the Securities and Exchange Commission (SEC). This meant that out-of-state ownership of utility companies would be difficult, if not impossible. The SEC was given authority, moreover, to regulate most financial transactions of UTILITIES. From its passage until the 1970s, PUHCA worked very well.

In 1978 and 1992, the Public Utilities Regulatory Policies Act and the Energy Policy Act increased competition in the utility industry to the point that further reform is being called for today, which in effect would replace the SEC with a new federal regulatory agency.

See also deregulation; Insull, Samuel; Morgan, John Pierpont; Securities Exchange Act of 1934.

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Michael V. Namorato

Public Works Administration (PWA) The PWA was set up under Title II of the National Industrial Recovery Act (June 1933) of Franklin D. Roosevelt's First NEW DEAL. Designed to provide jobs for the unemployed as well as to help in stimulating economic recovery from the Great Depression, PWA was based on a matching principle whereby the federal government put up 30 percent and the local/state governments 70 percent in secured loans. PWA reflected the personality of its director, Harold Ickes, secretary of the interior throughout the Roosevelt presidency.

Committed to setting up a stable federal agency that would build public works projects of permanence and bring a fair return on the federal government's investment, Ickes methodically decentralized PWA into state and local committees, meticulously reviewed construction plans, and insisted that every dollar expended be accounted for. Although "Honest Harold's" PWA was cumbersome in organization and in spite of PWA and Ickes's rivalry with Harry Hopkins and other New Deal relief agencies such as the WORKS PROGRESS ADMINISTRATION (WPA), PWA still accomplished much. On average, PWA employed approximately 144,000 workers per year, helped in creating 600,000 related jobs, and pioneered in establishing precedents for federal aid to municipalities. PWA, also reflective of Ickes, sought to help black people with its emphasis on no discrimination in jobs or salaries.

Almost from the beginning, PWA had difficulties. Given its organization and director, it moved too slowly for Franklin D. Roosevelt, with the result that PWA funds were taken to set up the Civil Works Administration under Harry Hopkins in 1933. As the WPA developed, it secured more funding, until in 1939 PWA became a victim of the Reorganization Act of 1939, whereby it was turned over to the Federal Works Agency. Nevertheless, its work was impressive, and it spent nearly \$6 billion for roads, tunnels, bridges, hospitals, and other major public works. Among its most notable accomplishments were the Hudson River's Lincoln Tunnel, the New York Triborough Bridge, the George Washington Bridge, and Chicago's State Street subway.

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Michael V. Namorato

Pullman, George M. (1831–1897) *inventor and businessman* Born in Brockton, New York, Pullman went to work at 14 when his father died. He became a cabinetmaker and later a construction worker. After moving to Chicago in 1855, he saw an opportunity to improve the sleeping cars currently in use by the RAILROADS. Three years later he designed two coaches for the Chicago and Alton Railroad. A larger car, the Pioneer, followed in 1865. It was used in Abraham Lincoln's funeral, on the train that carried his body from Washington to Springfield, Illinois. As a result of the trip, the Pullman sleeping car became extremely popular, and orders increased substantially from the railroads.

Later in the 1860s, he also introduced dining cars and then added parlor cars in 1875. In 1867, he organized the Pullman Palace Car Company, which later became simply the Pullman Co. Often leasing the cars to railroads, Pullman observed that service for them could be provided by former slaves, and he began hiring them to serve as porters and waiters. These men became known as "Pullman porters." The company became the biggest employer of blacks in the country at the time and a magnet for black immigration to Chicago, where the company had its operations at the time.

His business ventures in railroad cars continued to succeed. By 1890, Pullman supplied most of the sleeping cars in the United States from his headquarters in Pullman, Illinois-a planned town that he built for his company and workers. He created it to be free of civil unrest and violence, but the undertaking eventually failed. Labor unrest plagued the venture, and in 1894 it underwent what became known as the "Pullman strike," which was broken by federal troops with machine guns. Pullman's relations with his labor force were poor. When sales declined in 1894, he slashed wages by 25 percent. His workers protested unsuccessfully, and Pullman fired several of their spokesmen. They then went on strike and were aided substantially by the American Railway Union, led by Eugene DEBS. Railroad workers refused to work on any train with Pullman cars attached; as a result, President Grover Cleveland sent troops to break the strike. Violence stemming from the strike was estimated to have cost more than \$80 million. Debs was subsequently jailed, and troops were sent to Illinois to protect the mails and the company's headquarters.

Pullman's company continued to be highly successful despite the labor problems. In addition to his company, he also owned the Eagleton Iron Works and was president of the Metropolitan Elevated Railroad, both in New York City.

See also WESTINGHOUSE, GEORGE, JR.

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R

Racketeer Influenced and Corrupt Organizations Act (RICO) The Racketeer Influenced and Corrupt Organizations Act (18 U.S.C. § 1961 et seq.), commonly known as the RICO act, was passed by the U.S. Congress in 1970. RICO was intended to provide a more effective means to prosecute members of organized crime. In particular, the RICO act enables the prosecution of those persons who do not personally commit any crimes but who control a criminal enterprise that engages in a pattern of racketeering activity.

RICO also provides the government with broad power to cause the forfeiture of property belonging to any person convicted under the act. In addition, RICO allows the victims of proscribed criminal activities to bring a civil suit against the wrongdoer. Under the act, victims can recover three times their actual damages plus costs and attorneys' fees.

Between 1970 and the mid-1980s, RICO was used almost exclusively by U.S. prosecutors against the leaders of organized crime families throughout the United States. Defendants prosecuted under the act protested that it violated their due process rights, arguing that convictions could be based upon mere conversations with known members of organized crime and that the act allowed for the forfeiture of all their assets, even if the government had no proof that all of the defendant's assets were the proceeds of organized crime. The objections to the act's broad application, however, largely fell on deaf ears because the objections were a natural and necessary result of the act's intended scope, that is, a broad legislative enactment that would effectively eliminate the economic base of organized crime.

In the mid-1980s, civil litigators began to extend the act to areas that were previously thought beyond the reach of RICO. Instead of alleging that a "Godfather" figure was controlling a Mafia family for purposes of engaging in a pattern of extortion, murder, and arson, plaintiffs in civil class actions alleged that a chief executive officer was controlling a Fortune 500 company for purposes of engaging in a pattern of mail and wire fraud. Usually, these latter claims were based upon allegedly false advertisements that were circulated through the U.S. mails or wires. With the advent of this type of creative pleading, suddenly every business or consumer fraud claim had the potential to be a RICO claim. Although the use of RICO in the business and consumer fraud context complied with the express wording of the statute, many members of the judiciary believed that Congress never intended to "federalize" common law fraud when RICO was originally passed.

During the late 1980s and early 1990s, a plethora of ad hoc rules and theories designed to limit RICO's civil applications were adopted by the various U.S. district courts across the country. Many of these rules and theories conflicted from district court to district court. As a result, application of the civil RICO Act during this period was complicated, burdensome, and inconsistent. It was used to prosecute violators of securities laws in some instances, notably when Michael Milken of DREXEL BURNHAM LAMBERT was charged with infractions of the law during the insider trading scandal of the late 1980s.

Many of the inconsistencies in civil RICO applications have since been resolved by the U.S. circuit courts of appeal and the U.S. Supreme Court. Even without the inconsistencies, however, the complicated and burdensome rules applicable to pleading and proving a RICO claim remain. RICO can have extensive power when employed either civilly or criminally, and it can reach almost any factual situation involving long-term criminal activity. The courts have not, however, made it easy to take advantage of RICO's power and breadth. The exceptional results that can be achieved under the act require exceptional effort.

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Jeffrey Grell

Radio Corporation of America From 1919 to 1985, the Radio Corporation of America (RCA) was one of the primary American consumer electronics and telecommunications research and manufacturing firms, playing important roles in

consumer, military, and government work and in computer and related fields. Long dominated by David SARNOFF, it was spawned by—and decades later taken over by—GENERAL ELECTRIC.

RCA was formed out of a post-World War I shared business and government desire to build an important American company in the developing wireless business. General Electric established RCA as a subsidiary on October 17, 1919, transferring to it important wireless patents, including those for the Alexanderson Alternator long-distance transmitter. RCA then took over the transmitters of the American Marconi company and other firms. In a series of complex arrangements, RCA was organized as a patent holding company, with patents cross-licensed among GE (30 percent), Westinghouse (20 percent), AT&T (10 percent), UNITED FRUIT (4 percent), and others. GE and Westinghouse took substantial ownership shares in RCA.

Based on this patent pool, RCA marketed consumer radio receivers manufactured by GE and Westinghouse beginning in 1922 and operated long-distance (maritime and international) wireless telegraphy and telephony stations. In 1926, RCA formed the National Broadcasting Company as a wholly-owned subsidiary, initiating regular national radio network service through a handful of its own stations and many other affiliates. While Owen D. YOUNG and Edward Nally of GE were primary early leaders, day-to-day operational control soon fell to David Sarnoff, who became president in 1930.

While no engineer, Sarnoff recognized the importance of staying on the cutting edge of fastchanging technology and strongly supported research in sound motion pictures, recording methods, facsimile radio, and all types of electronic vacuum tubes. His RCA became a wholly separate firm when GE and Westinghouse were forced in a 1932 antitrust consent decree to spin off their stock holdings.

The most public research effort was the innovation of television, which had moved from semimechanical to all-electronic methods by about 1930. Over the next decade, the company spent nearly \$50 million, a huge sum at the time, to research and perfect black-and-white television, initiating experimental broadcasts in New York City in 1935 and presenting television as a finished product at the 1939 New York World's Fair. RCA pushed heavily for the Federal Communications Commission's (FCC) final approval of commercial television operations beginning July 1, 1941.

The Japanese attack five months later froze television expansion for the duration of the war. As with most other American industry, RCA converted almost wholly to military equipment manufacturing during World War II. Radios, fuses for bombs, radar, and both underwater and airborne electronics systems dominated company activity while broadening its expertise. Annual sales rose from \$110 million in 1939 to \$237 million in 1946. Postwar international tensions underlay growing military contracts that built on the company's wartime experience. RCA entered the computer field in the 1940s and expanded operations in the 1950s and 1960s. Research and manufacturing costs were high, however, and profits scarce amid strong competition.

The postwar decade was dominated by television's growth, with RCA and its NBC subsidiary playing central roles. At the same time RCA pioneered development of color television, which was approved for operation by the FCC in December 1953. Due to the high cost of receivers, color developed only slowly, and RCA did not achieve profits in the field (which it dominated) until the early 1960s. A venture into 45 rpm records was less successful, and attempts at manufacture of a broader line of consumer products were soon spun off as well.

With the retirement of David Sarnoff in 1969, RCA appeared to lose its direction and certainly its competitive edge. His son Robert took the helm and soon wound down the company's struggling computer venture after a loss exceeding \$500 million (some reports suggested \$2 billion). In turn, he pursued acquisitions that blurred the company's technology focus and was forced out

in 1975, to be followed by two further CEOs, each of whom pursued a different strategy while being unable to staunch the growing flow of red ink. Subsidiaries were bought and sold, often at a loss. Divisions of the firm (most particularly the Princeton, New Jersey-based research center) pulled in different directions or overlapped in their efforts. An attempt to revive the company's great consumer electronics successes-with a video disc recording system-failed as the technology was already dated. After two short-lived predecessors, board member (since 1972) Thornton Bradshaw took over the reins of RCA in mid-1981. RCA's NBC network was struggling, profit margins had declined in color television, and many nonelectronic acquisitions were put on the block, some after only a handful of years. Under Bradshaw, RCA refocused on its technology core.

By this time RCA had become a potential takeover target, thanks in part to more than \$2 billion in cash from the sale of subsidiaries. Break-up value of the company was several times its share price. In December GE made a friendly takeover deal to RCA, which both company boards quickly approved, as did shareholders, despite controversy about the price (\$6 billion) paid. Thus, within 15 years of David Sarnoff's death, RCA disappeared into the GE conglomerate, its name preserved merely as a marketing vehicle for the French Thomson consumer electronics combine.

See also radio industry; telecommunications industry; television industry.

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Christopher H. Sterling

radio industry Radio is a lifestyle medium. Today the business of radio is that of a mass media industry targeting audiences with similar characteristics and interests. Radio programming goes where you go and fits into your schedule and whatever you are doing. There are more than five radio sets per household and more than 12,000 stations, and revenues total more than \$18 billion per year.

The foundation of this industry was a revolutionary technology. The earliest historical period of significance to the foundations of radio broadcasting ranges from the mid-1800s to the turn of the century. This pre-broadcast period was a fascinating time in U.S. history. It followed the Civil War. It was a time of massive population growth and urbanization. For the first time in the history of this nation, its manufactured goods were worth more than its agricultural products. This era of U.S. history is known as the Industrial Age. It had such an effect on society that many of the names that dominated the age are still familiar today: Andrew CARNEGIE, Russell Herman Conwell, Andrew Mellon, J. P. Morgan, John D. Rockefeller, William Randolph Hearst, and Joseph Pulitzer. Adding the names of the electric and electronic media pioneers of the same era-James Clerk Maxwell, Heinrich Hertz, Guglielmo Marconi, Reginald A. Fessenden, and Lee De Forest-communicates some idea of the environment in which radio began. These radio pioneers, whose names are obviously not well known, worked in the shadow of the industrial giants. Radio was almost entirely new compared with other evolving industries (such as manufactured goods), but it began within the ideology of the same Industrial Age.

The TELEGRAPH was the most important development of the electronic media in the Industrial Age. During the mid-1800s, telegraphy—the transmission of coded signals—provided the world's first instantaneous information service. The telegraph was the first practical medium that kept the agrarian and the growing urban communities throughout the nation in touch with the rest of the world. The telegraph enhanced the currency of the frontier press by overcoming the obstacles of time and distance. The audience's interest in rapidly delivered information inspired the growth of commercial enterprises.

Samuel F. B. MORSE is credited with the development of the telegraph system, which he patented in 1840. The frontier success of the telegraph naturally led the way for voice communication telephony. Alexander Graham BELL is credited with developing the analog transmission of the human voice over wire. Bell's early experiments led to several important contributions: the carbon microphone, the magnetic receiver (the basis for loudspeakers), and the electronic tube amplifier. Bell announced his successful voice transmission experiments in 1874 and patented his work shortly thereafter. Bell not only produced important technological developments for the electric media, but also founded the AMERICAN TELEPHONE AND TELEGRAPH CO. (AT&T), which would later make significant contributions to the foundations of electronic communication.

Early telecommunication experimentation was not limited to telegraph land lines. The telegraph grew to include transmission of the human voice-telephony and wireless telegraphy evolved into radio telegraphy. There were several inventors whose individual contributions would be combined to produce an over-the-air radio signal. James Clerk Maxwell, a Scottish physicist, was first to publish a theory of radiant energy, which remains the basis of the modern concept of electronic media. Maxwell's ideas attracted the attention of German physicist Heinrich Hertz, who first demonstrated Maxwell's theories by projecting a signal into the air-paving the way for radio. Hertz's achievement is recognized by the use of his name as the unit of measurement for radio frequency. Guglielmo Marconi was the most prominent and well-known experimenter in the industrial history of radio. Marconi, however, was more than an inventor, he was also an entrepreneur. He established the British Marconi Corporation, the Canadian Marconi Corporation, and the American Marconi Corporation. In 1901, in his most famous experiment, he succeeded in sending a signal through the windy skies from Cornwall, England, to Newfoundland, Canada. Marconi was the first person to use radio as a device to both send and receive information.

Reginald A. Fessenden, a Canadian, took his work to the United States. He was, like most of the earlier radio pioneers who preceded him, primarily an inventor. While Marconi was sending wireless Morse code signals, Fessenden was the first to be successful at voice and music transmission. His first broadcast was from Brant Rock, Massachusetts, on December 24, 1906.

Lee De Forest, who also worked with voice transmission, is often referred to as the "father of radio"—a title he gave himself. He developed the Audion tube, a three-electrode vacuum tube that facilitated voice transmission. In his most famous experiments, he projected speech via radio. He conducted a number of tests in New York and in Europe—his most famous from the Eiffel Tower. This transmission, produced in 1908, was reported to have been received as far as 500 miles away. De Forest, like many of his forerunners, was an inventor and not a business person.

At the turn of the 20th century, several major corporate players were beginning to emerge, including the GENERAL ELECTRIC CO., whose engineer, Charles Steinmetz, developed the alternator to assist Fessenden in his first voice experiments; American Telephone and Telegraph, which eventually acquired the Audion tube from De Forest; and the Marconi companies. These corporations were primarily interested in the commercial value of the patent portfolio. They had the financial resources to see the patents developed into systems-a goal beyond the reach of most of the individual experimenters, who had the vision but lacked adequate financial backing. The prehistory of broadcasting was a complex period of lawsuits, counter-suits, litigation, financial development, competition, and experimentation. Everyone, inventors and corporate interests alike, seemed to hold patents to one or another important element of radio technology, and few were willing to share. Radio at this stage was still a laboratory experiment, but its importance as a means of point-to-point information communication—particularly in marine and ship-to-shore communication—was becoming increasingly apparent.

The first dramatic illustration of wireless radio as a maritime technology was produced by the sinking of R.M.S. *Titanic* on April 15, 1912. There was a ship near the *Titanic*, but its radio operator was not on duty when the *Titanic* struck an iceberg. By the time contact was established, the airwaves were jammed with irrelevant signals. This disaster riveted the nation's attention on the new technology, which was thus catapulted into prominence. The Radio Act of 1912, which governed radio for the next 15 years, was a direct result of the *Titanic* disaster.

As World War I approached, the applications for radio technology shifted. Business and industry were nationalized and focused on war production. On April 6, 1917, when the United States entered World War I, all wireless stations were closed. On April 7, they were reopened under the control of the U.S. Navy. Spurred by its military importance and with rivalries set aside, the technology advanced rapidly.

Following the war radio came into a new era-the Roaring Twenties. The pooling of patents to facilitate the war effort brought together previously competitive ideas and set the stage for commercial development. The move transformed the nature of radio from maritime and defense communication into commercial broadcasting in the 1920s. The radio industry grew rapidly during this decade, producing increased chaos on the air. Rival stations interfered with one another's signals by alternating wavelengths, increasing power, and changing hours of operation at will. The result was the passage of the 1927 Radio Act and the Communications Act of 1934, which regulated radio for the next 62 years.

The 1920s increased the influence of corporate radio. In an effort to protect the United States against a growing British monopoly in radio, which was controlled by Marconi, after World War I the American government pushed for the sale of Marconi's American interests to General Electric. With that sale GE, on October 17, 1919, organized the RADIO CORPORATION OF AMERICA (RCA) to manage what had been Marconi investments. In other words, a British monopoly was exchanged, with government approval, for a U.S. monopoly. Shortly thereafter, RCA formed alliances with Western Electric and its parent corporation, AT&T. Corporations were now a part of the radio landscape, and each operated a pioneering station. Most prominent among the stations were KDKA and WJZ, owned by Westinghouse; WEAF, owned by AT&T; and WJZ, WJY, and WDY, owned by RCA. There were other stations, but those owned and operated by corporations played key roles in the development of network broadcasting.

KDKA Pittsburgh earned a place in the history of radio with its broadcast of the November 2, 1920, election returns. KDKA claimed this broadcast was "the world's first scheduled broadcast," but other stations were experimenting at the same time. Charles D. Herrold pioneered sta-



Father and daughter listening to the radio, ca. 1930 (LIBRARY OF CONGRESS)

tion KQW in San Jose, California, with intermittent broadcasts beginning as early as July 1909. Professor E. M. Terry of the University of Wisconsin set up station WHA (with call letters 9XM, which designated experimental status) to broadcast weather and market reports. Station WWJ, owned by the Detroit News, went on the air August 22, 1920, with voice and music. CFCF in Montreal, Canada, and PCGG in the Netherlands both began broadcasting in November 1919. Historian Asa Briggs noted that during 1920, "regular concerts began to be broadcast in Europe from the Hague." Although the focus is generally on KDKA, other stations were claiming "firsts." Wireless experimentation was evolving throughout the world.

WEAF, the AT&T flagship station, led advances in technology and operational patterns. Its technical operations contributed to the development of an important tool that today we take for granted: the control board, which routes, balances, mixes, and controls the audio. The New York station made more significant advances that would have a national impact: It started to sell advertising, and it was the first station to conduct network broadcasting. WEAF was licensed to operate a toll station (to sell commercial time) on June 1, 1922. On August 28, 1922, WEAF conducted the first commercial program. It was a 10minute speech for real estate company the Queensboro Corporation. The broadcast was so controversial that the trade magazine Radio Broadcast editorialized against it. Despite the debate, little seemed to stem the tide. No station during the 1920s was well financed by advertising revenue, but WEAF's toll broadcast set an important precedent and gave the fledgling broadcast industry an impetus-a financial reason to improve. By the end of the decade, an important precedent had been established and continues today: advertising support for commercial media development.

Besides inaugurating the toll broadcast, WEAF was first to provide network broadcasting. AT&T already had telephone lines spreading all over the country. Linking chains of stations together for purposes of programming seemed only logical. Thus the first network was born. AT&T's first experiment was to link two stations—WEAF New York and WNAC Boston together on January 4, 1923. Other network experiments followed, but the one that focused public attention was a 22-station national hookup that linked stations coast-to-coast. The broadcast occurred in October 1924 and featured a speech by President Calvin Coolidge. By the end of 1925, AT&T had 26 stations linked into the network.

At the same time AT&T was making its debut into network broadcasting, RCA, under the leadership of David SARNOFF, was starting its system. The first RCA network broadcast was in December 1923, between stations WJZ, the RCA-owned New York City station, and WGY of Schenectady, New York, owned by General Electric. In September 1926, RCA formed a separate unit to conduct its broadcast and network operations: the National Broadcasting Company (NBC). Shortly thereafter (1926), AT&T sold its broadcast interests to RCA in an attempt to improve relations with RCA, Westinghouse, and General Electric. The sale immediately placed RCA in the dominant position. With the combination of its own operation based on its station WJZ and the newly acquired and financially successful WEAF, NBC now had two major network chains. The newly purchased WEAF-based AT&T network became known as the NBC Red network, and the older WJZ-based RCA network became known as the NBC Blue. Although the two networks would become similar in size during the mid-1930s, the Red network held the dominant position.

The creation of NBC's chief rival of the time, the COLUMBIA BROADCASTING SYSTEM (CBS), began with George A. Coates. Coates was a promoter who had taken up radio's cause and became involved in the anti-ASCAP (American Society of Composers, Authors and Publishers) controversy. Coates, along with the newly formed National Association of Broadcasters (NAB), was seeking to free the struggling broadcasters from the financial demands placed upon them by ASCAP for music rights on material performed on the radio. He teamed with Arthur Judson, the business manager of the Philadelphia Orchestra, who had been turned down when he tried to sell programming to RCA. The two of them formed a network, the United Independent Broadcasters, Inc. UIB debuted September 18, 1927, but its financing was weak, so it was soon looking for additional backing. The joining of UIB and Columbia Phonograph Corporation was motivated by Columbia's desire to sell records. Columbia was afraid that RCA would merge with the Victor Talking Machine Company and then dominate the record industry (RCA did merge with Victor in 1929). So, UIB and Columbia merged on April 5, 1927, creating a 16-station lineup. The agreement gave UIB a temporary financial boost and a name change-to the Columbia Phonograph Broadcasting System (CPBS-UIB).

The Congress Cigar Company of Philadelphia was one of the successful advertisers at CPBS. The vice president of that company was William S. Paley. Paley and his family purchased the network in September 1928, and by 1929, thanks to some creative financing, the company was showing a profit. The name Columbia was retained. It purchased its first key station, WABC New York, in 1928; a decade later the Columbia Broadcasting System (CBS) purchased the stock of the American Record Corporation, and several other record labels.

The programming schedule offered by NBC, CBS, other smaller networks, and individual independent stations was irregular at first, but it grew with the stations and the audience during the 1920s and 1930s. Historically, programming included sporting events, political speeches, and the personalities of radio programming. But early programming was primarily live music. Performers were willing to appear in hopes that the publicity would increase their own popularity. The networks even had their own live orchestras in the studio. The programs were designed for studio performance. Large studios were draped with curtains; although the performers would not be seen, they dressed in formal attire for the program events. Programming schedules occupied primarily the evening hours and expanded with the increased audience and the capability of the technical operation.

Radio had a significant effect on those living during the Great Depression and into World War II. Broadcast historians most often call this period radio's "golden age." The comedy and drama programs, such as Suspense, Amos 'n' Andy, The Shadow, Little Orphan Annie, One Man's Family, the March of Time, the Lone Ranger, and a host of others propelled the popularity of radio. During the 1930s and into the early 1940s, radio was beginning to attract more and more advertisers, while other industries continued to struggle. In the politically charged climate of the Depression and war, radio was a popular source of respite and entertainment and the major platform for the discussion of issues. It was a window on the world, a break from a provincial existence and the difficult challenges of the day. President Roosevelt used radio and his Fireside Chats to inspire an audience during troubled times. The episode of Orson Welles's Mercury Theater of the Air broadcast on October 30, 1938-an adaptation of H. G. Wells's War of the Worlds-was a dramatic example of the power of entertainment and news-styled programming.

During the 1930s, the NEWSPAPER INDUSTRY began to worry about radio detracting from its readership. Some historians have referred to this competition as the "press radio war." It was really a state of intense business rivalry. In 1933, newspapers began to put pressure on the radio industry to eliminate and/or limit news programming. The consensus reached was called the Biltmore Agreement, and while it curtailed news, both NBC and CBS continued with their commentary programs. By December 1938, the Biltmore Agreement fell apart, and the commentators and their support staffs were transformed into news organizations that would cover the events of World War II. Commentators became news anchors and reporters, providing eyewitness accounts and observations about the war.

Radio news was the major program innovation of World War II. Radio newspeople filled the airwaves with reports from the front. Edward R. Murrow, later known as the "dean of broadcast news," took the sounds of the war into every American home. Elmer Davis, H. V. Kaltenborn, Robert Trout, Douglas Edwards, William L. Shirer, Chet Huntley, and other commentators turned to reporting the events of the war. They portrayed the war as they saw it. It was the nation's first eyewitness radio news. As the war expanded, so did the news organizations at NBC and CBS. They established news bureaus throughout the globe, their staffs expanded, and the number of program hours dedicated to news grew dramatically. By the end of the war, CBS radio alone had grown from a mere handful of commentators to almost 170 reporters and stringers, who filed almost 30,000 broadcast reports. World War II marked the beginning of a new era for radio journalism and information gathering. Today radio and television networks program and use the organizational principles they developed.

During the war the radio industry grew slowly. FM technology was still in its pioneering stages, and both FM and television growth were frozen by the FEDERAL COMMUNICATIONS COMMISSION. Edwin Howard Armstrong is considered the father of FM (frequency modulation) broadcasting. He was born December 18, 1890. Early in his career, Armstrong and a rival were working on similar circuitry and wound up in a bitter patent conflict. However, Armstrong's primary concern, and his contribution to the science of radio, was his effort to eliminate the static that interfered with the transmission of AM (amplitude modulation) radio.

Armstrong worked on FM throughout the 1920s and applied for patents on FM in 1930. The patents were granted in December 1933. His FM radio demonstrations were impressive. There

was no static in his signal. Armstrong was dedicated to his system and promoted it as a replacement for AM radio. The impact of FM radio was not immediately confrontational; some scientists saw it as an improvement of the existing signals but gave little thought of it replacing AM. Sarnoff opposed FM. RCA already had two AM radio station networks, but RCA did couple FM with television audio. However, as Armstrong pushed his position, those who had a financial investment in AM radio began to fight back. The conflicts prompted legal delays in the allocation of spectrum space, and as corporate engineers began developing other systems, more conflict resulted. Armstrong spent most of his fortune defending his FM system as a revolutionary technology that would make AM obsolete. FM's development was so slow that Armstrong became despondent, and in 1954 he took his own life. FM would be delayed several decades before it would achieve Armstrong's vision and replace AM.

Today's FM radio audience share is about 75 percent. When the programs of radio's golden age converted to television, radio switched to music. New music styles and formats created programming suitable to every lifestyle. The AM radio audience is primarily limited to news and talk radio. Contemporary radio is characterized by intense competition, with each station competing for a smaller share of the general audience market but a more sizable share of a specific target audience. For example, the audience who supports country-western music. The radio networks of historical significance are gone. They provided only news programming through the last half of the century. Today's radio networks, such as Westwood One, and group owners, such as Infinity Broadcasting, provide satellite-linked music and talk programming to stations across the nation on a contract basis. Perhaps the most prominent trend in the current radio industry is group ownership. The passage of the Telecommunications Act of 1996 removed the old FCC restrictions on ownership. This new REGULATION promoted an immense exchange of radio station properties. Owners who were previously limited to a handful of stations now own hundreds of them.

The technology of radio continues to grow as does its popularity. Satellite radio offers 24-hour service. Digital radio offers CD-quality sound to the car, home, and office. Radio goes where audiences go and has its strengths in localism and an ability to fit into a personal way of life.

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railroads As a form of transportation, railroads had been experimented with since the late 18th century. They became practical only with the development of the steam engine. Originally, railroads were powered by horses or, in some cases, sails, but only when steam engines were introduced did rail lines begin to be constructed. At first, railroads competed with canals and TURNPIKES for freight and passengers, but by 1828, when the first American passenger railroad, the Baltimore & Ohio, opened, railroads slowly began to overtake the canals and develop into the predominant form of transportation.

The railroads built in the 1840s overtook canals in mileage, although the steam engines were imported from Britain. Wood, rather than iron, was used extensively in construction of the roads themselves. By 1850, an estimated \$300 million was invested in railroads, making them the most capital-intensive industry in the coun-

try. New England accounted for the most miles completed in the 1850s, when the railroads began to expand from the Northeast into the Midwest. By 1860, more than 30,000 miles had been completed and capital investment tripled. Building was very slow during the Civil War but intensified once the conflict was over. Transcontinental links were of paramount importance during the late 1860s, and the first coast-to-coast link was completed at Promontory, Utah Territory, in 1869, when the Central Pacific and the Union Pacific lines were joined. The rapid building helped link the country's distant markets and also helped develop several midwestern cities as major centers of commerce, notably Chicago.

Rapid expansion also gave rise to scandal and controversy. The management of the ERIE RAILROAD by Jay GOULD and Jim FISK in New York and the famous "Erie wars" gave the railroads a bad reputation. They distributed more than \$1 million to members of the New York legislature to gain passage of laws favorable to them. Also, the Crédit Mobilier scandal, beginning in 1872 during the Grant administration, was a major blemish upon congressional funding of a transcontinental rail link. The scandals gave the impression that the only investors who profited from the railroads were senior management, who were often accused of looting them, while ordinary investors earned only a normal return. The capital intensiveness of the railroads finally led many of them to enter pooling arrangements after the Civil War, whereby price rigging of freight rates became common. As the railroads expanded westward, the controversy grew.

After the Civil War, the Pennsylvania Railroad grew to be the largest in the country. It grew mainly by consolidating with other lines. Serving all markets was not practical for the railroads as their routes became longer, extending through many states. Farmers began to organize to fight what they considered to be unfair treatment by the railroads, since the rate schedules were often illogical and cost small farmers more money than larger customers who received more favorable rates. The Grange movement opposed the railroads and precipitated several lawsuits against them, charging monopolist behavior in setting rates. The Supreme Court ruled favorably for the Grangers in *Munn v. Illinois* in 1877 but later reversed itself in *Wabash Railway Co. v. Illinois* in 1886. In 1877, a national railroad strike occurred when the Pennsylvania Railroad and several others cut wages of their workers by 10 percent. The stoppage became the first in the country that could be classified as a general strike; it lasted about a month.

Railroads made significant strides toward uniformity of equipment and safety in the 1880s, anticipating federal regulation of some sort. Despite the court cases favorable to the farmers,

REGULATION was in the hands of the states in the absence of federal antimonopoly laws and railroad regulation. The growing power of the railroads finally led Congress to create the INTERSTATE COMMERCE COMMISSION (ICC) in 1887. The body became the first government-created regulatory agency designed to curtail the power of the private sector, if necessary. The immediate impact of the commission was muted by the Panic of 1893, which created a depression forcing many railroads into BANKRUPTCY along with thousands of other businesses. Although the ICC was not a powerful body, it nevertheless marked a significant shift toward the beginnings of regulation in the United States. The continued opposition to big business by farmers and organized labor also



The Potomac railroad yards in Alexandria, Virginia (LIBRARY OF CONGRESS)

gave rise to the Populist movement in the late 19th century.

During the first decade of the 20th century, the railroads suffered several setbacks, including an unfavorable ruling in U.S. v. Northern Securities (1904). The ruling dismembered a monopoly that controlled much of the rails in the Pacific Northwest. The Hepburn Act (1906) and the Mann-Elkins Act (1910) gave the ICC increased powers, and the federal government operated the railroads during World War I. After the war, the railroads began to slowly decline as other forms of transportation vied for freight and, later, passengers. The U.S. Post Office granted airlines the right to carry long-distance mail in the 1920s, creating airmail. The passing of the Interstate Highway Act in 1956 also helped diminish railroads' importance as long-distance trucking began to capture a larger and larger share of freight hauling. Congress overhauled the rail system by creating the National Railroad Passenger Corp. in 1971 (Amtrak) and the Consolidated Rail Corporation in 1976 (Conrail). DEREGULATION of the rails was completed in 1980, when the STAGGERS RAIL ACT was passed. Large mergers of several rail systems followed as the railroads fought to consolidate and maintain their portion of freight haulage.

Further changes to the regulatory environment occurred in 1996, when the ICC was abolished and replaced by the Surface Transportation Board (STB). By the end of the 20th century, the railroads were mainly large, consolidated systems formed by merger. Passenger transportation was mainly in the hands of Amtrak and related stateoperated systems.

See also Harriman, Edward Henry; Hill, James J.; Scott, Thomas A.

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Raskob, John J. (1879–1950) *businessman* Born in Lockport, New York, Raskob's father and grandfather were cigar makers. Upon graduating from high school, he attended a business college and studied accounting and stenography, afterward getting a job as a stenographer at a manufacturing company. In 1898, he took a job in Nova Scotia with a steel company before returning to the United States two years later. He was introduced to Pierre DuPont, who at the time worked for the Johnson Company in Ohio. DuPont took a liking to him and hired him as his secretary.

When DuPont became the treasurer of the reorganized DUPONT DE NEMOURS & CO. in 1902, he made Raskob his private secretary. DuPont taught his secretary how to reorganize the firm and also showed him the intricacies of corporate organization. The two created the new DuPont Company's accounting department. In 1914, he became the company's assistant treasurer and then was elected to the company's board and the executive committee. Raskob then invested in GENERAL MOTORS, which was undergoing a change in organization and management. He joined the board of General Motors in 1915 and served as the company's vice president of finance from 1918 to 1928 while still serving as DuPont's chief financial officer. He also became a close colleague of William C. DURANT.

After GM was reorganized again in 1920, Raskob played less of a role in the company but still helped design its dividend policy and some other financial policies as well. He remained with DuPont until he retired in 1946 but resigned from GM in 1928 to pursue other interests. From 1928 to 1932, he served as chairman of the Democratic National Committee. After serious differences of opinion with the administration of Franklin D. Roosevelt, he resigned the position and became a founder of the American Liberty League, a conservative political organization opposed to many New Deal policies. He also was the major force, with Al Smith, behind the construction of the Empire State Building in New York City. The building, the world's tallest upon completion, was built following the construction of the Chrysler Building by Walter CHRYSLER.

Raskob was also associated with the stock market in the 1920s. Raskob was an active investor during the market's historic rise in 1929. An interview, published in the *Ladies' Home Journal* in August 1929 was entitled "Everyone Ought to be Rich," and Raskob gave his reasons why the stock market was a sound place to make one's fortune.

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recession Slowdown in the rate of economic growth, as reflected in the gross domestic product (GDP), from previous levels. Traditionally, a recession has been defined in the financial markets as two consecutive quarters of negative growth in the leading economic indicators, suggesting that the economy has slowed considerably from previous quarters. As part of the business cycle, it has been assumed that a recession would normally occur about once every seven years as the economy moved through stages of expansion before naturally slowing down.

In the post–World War II era, recessions have occurred in 1945–46, 1949, 1954, 1956, 1960, 1970, 1980–83, 1991–92, and in the year follow-

ing the bursting of the stock market bubble beginning in 2000. Previously, the stock market crash of 1929 had caused the Great Depression, when economic growth remained at low levels for three years before rebounding modestly in the mid-1930s, only to plunge again in the late 1930s. The term *depression* has been applied only to the economic slowdown of the 1930s. Prior economic slowdowns used a different terminology, but no single term was used consistently.

The United States suffered severe economic slowdowns several times before the Civil War. During the 19th and early 20th centuries these events were known as "panics." Slowdowns, or panics, occurred in 1807, 1837, 1857, 1873, 1882, 1893, 1903, 1907, and 1920. Traditionally, these periods were known as panics because they followed significant stock market declines, which at the time were attributed to a loss of investor confidence. Some were clearly more severe than others, with the Panics of 1837, 1857, 1873, and 1893 the most severe and longest. Many of the problems were exacerbated by the lack of a central bank in the United States, which made the supply of money inelastic and unresponsive to economic conditions.

The difference in terminology reflects the state of economic information in the 20th century versus that in the 18th and 19th. The federal government improved its compilation of economic statistics markedly in the 20th century, and the results were a better understanding of those factors capable of causing an economic slowdown. In the 18th and 19th centuries, much of the information surrounding panics was anecdotal or based solely upon banking and stock market performance. As a result, a complete picture never emerged of the root causes of many slowdowns, and many commentators instead relied on anecdotal evidence or attributed panics to the actions of individuals such as the ROBBER BARONS or shrewd stock market operators.

Beginning in the 1920s, Herbert Hoover asked the newly formed National Bureau of Economic Research, a private research group, to begin providing more raw data and analysis of the economy. Other private companies, such as the AMER-ICAN TELEPHONE & TELEGRAPH CO., also kept their own surveys and analyses of the economy—and the modern period of studying the economy was born. The term *panic* disappeared from serious studies of the economy and instead was used to describe stock market plunges.

Considerable debate has centered on recessions and depressions. Some arguments credit the application of John Maynard Keynes's theories by various administrations, beginning with Franklin D. Roosevelt, as helping to prevent further depressions after the Great Depression of the 1930s. Regardless of the debate, recessions continue to occur, although a depression of the magnitude of the 1930s has not been witnessed again in the United States. But the recession of the late 1970s and early 1980s proved to be one of the most enduring since the 1930s. It also was accompanied by high inflation, a relatively rare occurrence during a recession. For that reason, the term stagflation was coined, indicating a recession beset with inflation at the same time.

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Reconstruction Finance Corp. (RFC) Government agency founded in 1932 during Herbert Hoover's administration to help maintain economic stability during the Depression. The original purpose of the RFC was to aid financing in small business, agriculture, and industry. The scope of the agency was expanded during Franklin D. Roosevelt's first administration. Its first loan, to a Chicago bank, was controversial, evoking charges of cronyism and political favoritism, although the agency would exist for 25 years.

During FDR's first two administrations, the agency became the major lender to many businesses both large and small. Its chairman was Jesse Jones, who presided over the agency for most of the NEW DEAL and until World War II began. It merged with two other agencies to form the Federal Loan Agency, which made billions of dollars in loans to industry and business during World War II. Jones became secretary of commerce in 1940, and Henry Wallace became head of the agency in 1945, when it was returned to the Federal Loan Agency. After the war, a congressional investigation was held after charges of political favoritism were leveled at the agency. As a result, its status as an independent agency was abolished in 1953, and it was transferred to the auspices of the Department of the Treasury. It was out of business a year later and totally abolished in 1957.

Throughout the 1930s and World War II, the RFC was the major lender in the country, dispensing more than \$50 billion worth of loans to all types of companies, large and small. It was one of the few agencies able to change its function from peacetime to war and then switch back to peacetime again while keeping within its original mandate. Its activities dominated finance for more than a decade, often supplanting banks and Wall Street as a provider of funds during the later 1930s and 1940s.

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regional stock exchanges Boston, Philadelphia, Chicago, San Francisco, Los Angeles, and Cincinnati are homes to the regional equity exchanges that remain in operation in this country. Most of these exchanges came into existence to trade a specific type of security (for example, those of oil, gold, timber, mining companies) many years ago, and these are the survivors. At one time, exchanges also existed in Hartford, Pittsburgh, Baltimore, Washington, D.C., New Orleans, Denver, Seattle, Portland, Detroit, and a number of other locations that have long since faded from memory.

The remaining regionals are a result of MERG-ERS of two or three exchanges that could not exist on their own. The regional stock exchanges for many years were havens for transactions that a major investor might not want to execute on the New York or American exchanges. It was a way to trade "around the book"; in other words, to avoid the notoriety of a big trade in New York. In 1975, with the advent of the Securities Amendments Act, which for the first time eliminated fixed-rate commissions, the regionals came into their own as national exchanges that were part of the National Market System. They listed most of the issues traded on the New York and American exchanges. Through a new communication system that linked all exchanges, called the Intermarket Trading System, they could guarantee any customer using their floor an execution at or better than the displayed quote on the major exchanges. When they did not wish to trade at or better than the displayed market, they could forward the order through the Intermarket Trading System (ITS) to the displaying exchange and fill the order at the best bid or offer.

With this capability in hand, they then turned and offered major broker-dealers the opportunity to become specialists on their respective floors. As many of these firms took advantage of these opportunities and internalized the order flow from their own customers in issues in which they specialized, regional volume expanded, and many new players were attracted to these growing market centers. These developments cost the NEW YORK STOCK EXCHANGE almost 20 percent of its order flow and made the regionals a viable group of markets in the emerging marketplace. The revenues from this enhanced activity allowed two of them, Philadelphia and the Pacific, to venture into listed options with separate exchanges and enhance their revenue through these ventures. Many of the significant changes in the marketplace came from the innovations created by the regional retail executions and continuous net settlements.

The role of the regionals continues to change as technology has created many more competitors than just the New York and American exchanges. The Pacific Exchange has merged its equity business with a major electronic communications network. The Chicago Exchange ventured into the NASDAQ world of over-the-counter dealer issues. The Cincinnati Exchange has become an all-electronic automated marketplace, and Boston and Philadelphia continue to discuss affiliation with other entities in the business.

See also NATIONAL ASSOCIATION OF SECURITIES DEALERS; STOCK MARKETS.

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Lee Korins

regulation The practice of using laws to control the activities of certain industries or sectors of society. Attempts at government regulation began shortly after the Civil War and initially were aimed at the RAILROADS. As the country expanded, certain industries were expanding quickly, posing problems for the states and the federal government. In an attempt to control the private sector, many government units began passing laws designed to control railroads in, or passing through, their jurisdictions.

The first significant government attempt to regulate the railroads came with the establishment of the INTERSTATE COMMERCE COMMISSION in 1887. From the last quarter of the 19th century to the beginning of World War I, the idea of regulating industry was fostered by the Progressive movement, and many of its general ideas found their way into federal legislation. As Congress moved to enact labor laws at the behest of the labor movement, pass antitrust laws, and create the FEDERAL RESERVE, the influence of government in the private sector became more extensive. By the 1920s, it was clear that the LAISSEZ-FAIRE attitude of the 19th century was no longer viable as society grew larger and more complex.

In the aftermath of the stock market crash in 1929 and the Great Depression that followed, the administration of Franklin D. Roosevelt began in 1933 to institute more federal regulation over industry than had ever been experienced before. The banking, securities, and UTILITIES industries all had stringent regulations imposed by Congress, while workers in general benefited from Social Security legislation passed during FDR's first administration. At the same time, some states also passed their own laws aimed at regulating certain industries, some of which, such as the INSURANCE INDUSTRY, were regulated primarily at the state rather than the federal level. In many cases, industries were regulated at both the federal and state levels.

During the Depression, it also became obvious that the role of government would have to be stronger in the future to avoid the industry abuses that many believed were the root causes of the economic downturn. The economic theories of John Maynard KEYNES in particular emphasized government spending as a means of stimulating the economy; his ideas became popular for more than a generation since they dovetailed with the general trend toward regulation.

As many industries became larger, they found themselves regulated closely. Airlines and other forms of interstate transportation were closely regulated, as were communications, energy, financial services, and some technologies. Often the regulation extended to imposing curbs on ownership by foreign investors, while at other times regulation was more closely related to the NEW DEAL model of regulation over domestic ownership and control of certain types of activities, such as the pricing or selling of goods and services. Many government agencies became involved in the regulatory process, including the FEDERAL COMMUNICATIONS COMMISSION, the FEDERAL TRADE COMMISSION, the Securities and Exchange Commission, the Federal Reserve, the Interstate Commerce Commission (later the Surface Transportation Board), the TENNESSEE VALLEY AUTHORITY, and the Office of Thrift Supervision.

Beginning in the 1970s and carrying through to the 1990s, DEREGULATION became popular as Congress sought to allow many industries greater freedom than before. As the population grew and many businesses grew larger as well, theory leaned toward more self-regulation than close government supervision. Often, there were too many businesses in some industries to regulate them effectively, and self-regulation was seen as a practical remedy to government supervision, which often was bureaucratic and time consuming. In some cases, especially that of the securities and banking industries, the original New Deal regulations were thought to be outdated and ineffective. The new deregulatory environment did not wipe out regulations but did allow many companies greater self-regulation and freedom to operate.

Often when regulations were relaxed or rolled back, merger trends appeared, allowing any company to merge with others or the consolidation of entire industries in the name of greater economies of scale and efficiencies, which smaller companies found hard to achieve.

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Resolution Trust Corporation (RTC) An agency of the federal government created by the FINANCIAL INSTITUTIONS REFORM, RECOVERY, AND

ENFORCEMENT ACT (FIRREA) on August 9, 1989, and designed to fund the cleanup of the savings and loan crisis. During the 1980s, the savings and loan industry suffered its worst disaster since the Great Depression. By the end of the decade, hundreds of technically failed institutions were still open and awaiting resolution.

The federal deposit insurance fund for savings and loans, the Federal Savings and Loan Insurance Corporation (FSLIC), the thrift institutions' equivalent of the FEDERAL DEPOSIT INSUR-ANCE CORPORATION, had become insolvent and thus unable to complete the failure resolution process. The RTC was assigned this task. Before it ceased operations on December 31, 1995, the RTC closed 747 institutions with \$402.6 billion in assets—at a cost of \$87.5 billion. Taxpayers provided \$81.9 billion to cover this cost, with the remainder provided by private funds.

During its brief existence, the RTC faced enormous challenges and generated considerable controversy. The process of getting failed institutions back into private hands involved managing and selling houses, apartments, office buildings, shopping centers, hotels and motels, raw land, and more. Yet the RTC was required to do this while simultaneously maximizing sale values, minimizing disruptions to local real estate markets, and maximizing preservation of affordable housing. As if this was not difficult enough, the necessary funds had to be authorized by Congress. Initially, only \$50 billion was authorized. This quickly proved insufficient. Congress authorized additional funds, but only after needless and costly delays. By the late 1990s, it was estimated that the total cleanup bill exceeded \$150 billion.

Early in the resolution process, it became clear that RTC procedures and controls were deficient. This led to a controversy over how best to avoid extra costs from being incurred. Although the RTC did help clean up the savings and loan mess, no public accounting was ever made to enable a determination of how much extra taxpayers paid due to unnecessary funding delays and inappropriate disposition practices.

See also SAVINGS AND LOANS.

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James R. Barth

Reuther, Walter P. (1907–1970) *labor leader* Born in Wheeling, West Virginia, into a German immigrant and trade unionist family, Reuther was originally a die maker by trade. At a young age, he moved to Detroit to finish his education and take a job at a Ford plant. He worked for the FORD MOTOR COMPANY from 1927 to 1932 and then worked abroad for three years, including time in a Soviet factory designed by Henry FORD.

After returning to the United States, he helped organize workers for the UNITED AUTOMOBILE WORKERS (UAW) when the union was founded in 1935. Two years later, he and other UAW organizers were assaulted by Ford security guards outside a Ford plant in a bloody confrontation that made him a national figure. His slogan during the strike, "Unionism, not Fordism," was a direct challenge to industry and sealed his reputation as a champion of workers' rights.

He rose quickly in the UAW hierarchy and became vice president in 1942. Four years later he became president. In 1945, he led a strike against GENERAL MOTORS, demanding a 30 percent pay raise for his workers and also demanding that the company open its books for outside scrutiny, an unheard of demand at the time. Reuther was a long-time advocate of negotiated pension and worker benefits and wages tied to productivity. While president of the union, he held the post of president of the Congress of Industrial Organizations. He also helped orchestrate the merger of the two largest unions. When the CIO merged with the AMERICAN FEDERATION OF LABOR in 1955, he became vice president of the combined organization, a post he held until 1967. The UAW withdrew from the AFL-CIO in 1968 but rejoined in 1981.

Throughout his life, Reuther championed workers' causes and was a member of the noncommunist left. He was one of the first labor leaders to lend his support for putting industry on a wartime footing during World War II. He also supported Lyndon Johnson's Great Society programs and the Civil Rights movement of the 1960s and opposed American involvement in Vietnam. Acting as an emissary for the union movement, he traveled extensively around the world preaching the virtues of trade unionism. He served as an adviser to several Democratic presidents.

Reuther survived several attempts on his life throughout his career. One attack left an arm severely injured. He died in an airplane crash in Michigan in 1970. He is remembered as one of the major figures in American labor.

See also Gompers, Samuel; Lewis, John L.; Meany, George.

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Revson, Charles (1906–1975) *cosmetics manufacturer* Charles Haskell Revson was born in Somerville, Massachusetts, on October 11, 1906, the son of Russian immigrants. After passing through public schools in Manchester, New Hampshire, he relocated to New York City to sell dresses for the Pickwick Dress Company. After a brief stint in Chicago as a salesman he returned to New York to sell nail polish for the firm Elka. In 1932, when the company refused to appoint Revson a national distributor, he left to found his own cosmetics firm in concert with chemist Charles Lachman. At that time, nail polish was restricted to the color red, but Lachman had devised a new formula-creamy, opaque, and nonstreak-that could hold a variety of different colors. Revson immediately perceived a decisive sales advantage, so in 1932 he and Lachman founded the Revlon Company. The firm arrived in the midst of the Great Depression but nonetheless flourished owing to the popularity of the permanent wave hair style. Because this, in turn, led to a dramatic increase in beauty salons, Revson catered solely to that market instead of smaller distributors. He also insisted on charging top dollar for an extremely high-quality product. Revlon sales boomed accordingly, and by 1941, Revson enjoyed a near monopoly of lipstick sales to 100,000 salons. His success skyrocketed again when he introduced different colored lipsticks reflecting the season or mood of the wearer. He then orchestrated a brilliantly conceived advertising campaign entitled "matching lips and fingertips" that promoted color-coordinated lipstick and nail polish for the first time. Women found the combination appealing, and by the end of World War II, Revlon was the number two cosmetics producer in the United States behind Estee Lauder.

The decade of the 1950s witnessed the true marketing genius of Revson come of age. Counter to the staid, prudish mores of the time, he adopted ads and themes that bordered on the sexually explicit. The best example of this was the "Fire and Ice" campaign of 1952, orchestrated to usher in a new line of makeup, which succeeded brilliantly. Revson also recognized the marketing power of the new television milieu, and in 1955, he became sole sponsor of the popular quiz show *The \$64,000 Question*. The show closed down five years later amid the general scandal involving prearranged answers, but Revson was never implicated. The impact on

makeup sales proved dramatic, however, and the company stock rose by 200 percent by 1956.

Throughout the 1960s Revson again sought to trump the competition by greatly diversifying his product line. Eventually he manufactured and marketed skin-care products, shampoo, hair spray, perfume, lotions, and even a line of men's products. Once Revson became cognizant of the need for cheaper perfumes to cater to younger women, he introduced an inexpensive scent named "Charlie," which became one of the most successful items in cosmetics history. He also displayed considerable business acumen by acquiring the U.S. Vitamin and Pharmaceuticals Company for \$67 million and within a few years completely diversified its product line. A decade later, the gamble paid off handsomely, and the new firm accounted for 27 percent of Revlon's annual income.

One secret to Revson's surprising success was his unyielding emphasis on quality. He personally oversaw the manufacture, testing, and marketing of virtually thousands of products-and usually tried most of them on himself. He was also relentlessly demanding upon his staff and workers, and Revlon earned the reputation of a "revolving door company" with a high turnover of workers and staff. Revson himself deliberately cut a larger than life figure with an opulent lifestyle that included expensive yachts, lavish parties, sumptuous residences and-what he relished most-numerous high-profile enemies in the cosmetics industry. By the time Revson died in New York City on August 24, 1975, he had transformed Revlon from an \$11,000 company into an international cosmetics giant grossing \$606 million annually-one of the 200 most profitable corporations in America.

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John C. Fredriksen

robber barons Term given to industrialists and bankers of the 19th century. It was originally used by journalist Matthew Josephson in a 1934 book of the same title to describe the careers of Cornelius VANDERBILT, JAY GOULD, J. P. Morgan, and Andrew CARNEGIE, among others.

As portrayed, a robber baron was an extremely wealthy, successful industrialist who created large industries without much consideration for the public welfare. The descriptions are replete with example after example of how the wealthy cajoled and connived their way to power and how they flaunted it once they became established. This was done in the absence of federal laws limiting corrupt behavior, and continued even after many of the laws were passed.

The concept was very similar to the earlier work of journalist Gustavus Myers, whose own book, *The History of the Great American Fortunes*, was one of the first comprehensive muckraking books. The popularity of the easily recognized term can be seen in its continuing general use since the Josephson book was published. More recently, individual works have reexamined the careers of many of the robber barons and concluded that both Myers's and Josephson's critiques were too left of center and often slanted. However, they were an integral part of muckraking literature and strongly reflected both the Populist and Progressive traditions.

Since World War II, the term *muckraking* has faded and has been replaced by investigative journalism. While not as ideological as some muckraking exposes, investigative journalism also attempts to uncover hidden business practices and motives. More recently, the term *robber barons* has been attacked as being ideologically charged against business and deceptive, since many of the so-called barons also were major contributors to industrial growth and were sometimes major philanthropists. The acceptable side of capitalism in these cases has been omitted from the critique in favor of sensationalist headlines and groundless attacks.

See also MUCKRAKERS; NEWSPAPER INDUSTRY.

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Robinson-Patman Act An act named after Senator Joseph T. Robinson of Arkansas and Representative Wright Patman of Texas, who proposed legislation directed at large CHAIN STORES, particularly the GREAT ATLANTIC & PACIFIC TEA CO. (A&P). Small grocers and other retailers, who were politically well organized, convinced Congress that these large chains were forcing suppliers to sell to them at a significantly lower price than the smaller dealers could obtain. This injured competition by driving the smaller dealers out of business, leaving the large chains with near monopolies.

The statute, which amended part of the 1914 CLAYTON ACT, actually made it unlawful for a seller to sell the same commodity to two different business buyers at different prices when the two buyers competed with each other. For example, it forbade Farmer Brown from selling milk to A&P for 10 cents per gallon while charging smaller grocers 15 cents per gallon. As the statute was initially proposed, the violator of this "price discrimination" provision was Farmer Brown, even though the farmer was supposedly yielding to the buying power of the large chain store. However, a late amendment to the Robinson-Patman Act made it unlawful for a buyer to induce the unlawful price discrimination.

The act, which became law in 1936, reflected the revolution in product distribution that

occurred before and during the New Deal era. Large merchandisers who owned multiple stores were able to purchase goods in quantity at low prices, and thus undersell traditional family owned stores. Further, the Robinson-Patman Act reflected Congress's policy conclusion that injuring small dealers was a bad thing, notwithstanding the general benefit obtained by consumers from lower chain store prices. Thus, the Robinson-Patman Act is considered to be the most "special interest" of all the ANTITRUST statutes and has been severely criticized by both moderate and conservative antitrust scholars. The statute remains on the books, however, and is actively enforced by private plaintiffs.

See also predatory pricing; Sherman Act.

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Herbert Hovenkamp

Rockefeller, John D. (1839–1937) *industrialist and philanthropist* Born near Ithaca, New York, Rockefeller was the son of a peddler with a spotty work history. At age 14, his family moved to Cleveland, and two years later, Rockefeller began working for a small produce firm. The city provided him with a new interest since it was the home of the early oil industry. Before entering the oil business, he first formed a partnership in the grain business with a friend, Maurice Clark, selling his interests soon after and using his profit to become an oilman.

Rockefeller and Clark began trading in oil several years after it had been discovered in Titusville, Pennsylvania, in 1859. In 1863, Rockefeller bid \$72,000 for a Cleveland refinery and made the transition from commodities to the oil refining business. The oil business brought many railroads to Cleveland, and many of the lines soon began competing for business by offering favorable rate schedules, which Rockefeller and his partners, Henry FLAGLER and Samuel Andrews, used to their full advantage. Flagler in particular negotiated favorable rates, but it was depressed economic conditions in the new industry that helped Rockefeller expand the business.

A recession after 1869 caused economic hardship in the oil business but presented Rockefeller with an opportunity. Borrowing heavily, he began buying many smaller oil companies that faltered during the hard times. In 1870, a new company was formed in Ohio, with the existing partners being the new shareholders. Rockefeller's plan was to offer new shares in the company only when capital for expansion was needed. The Standard Oil Company was born with Rockefeller, Flagler, William Rockefeller, Andrews, and William Harkness as the only shareholders. Its capital was \$1 million, and the company controlled 10 percent of the industry's refining capacity.

Standard Oil and some other oil producers joined with several railroads in a venture called the South Improvement Company. Their objective was to set favorable shipping rates for themselves while precluding other competitors. When the arrangement became public knowledge two years later, there was a loud outcry against the companies involved for rigging freight prices. But the clandestine arrangement proved successful for Standard Oil since it allowed Rockefeller to effectively double his company's market share in a short period of time. In 1882, the Standard Oil Trust was established in Ohio. By using the trust form of organization, Standard Oil was able to own the out-of-state companies also owned by Rockefeller. Standard Oil was able to expand even more, and Rockefeller and his partners became extremely wealthy as a result.

In 1889, Standard Oil was sued by the attorney general in Ohio for antitrust violations, and the trust finally was dissolved by Ohio in 1892. The

company subsequently shifted its headquarters to New Jersey, where corporate laws were more lenient, allowing the company to own out-of-state companies. A holding company was used to control the vast enterprises. In 1899, Standard Oil of New Jersey was reorganized to become the holding company for the Standard Oil enterprises. The holding company held stock in 37 various companies. It became the largest company in the world and remained so until the establishment of U.S. STEEL in 1901. By the end of the 19th century, it controlled an estimated 90 percent of domestic oil production and distribution.

Rockefeller began to retire from the oil business in the mid-1890s. Like Andrew CARNEGIE, he began philanthropic activities. In 1890, he established the University of Chicago and had donated \$35 million to its development by the beginning of World War I. He was drawn back into an active defense of his company when it was sued by the Justice Department for antitrust violations. A campaign had been mounted over the years by politicians and the press, arguing that the company violated ANTITRUST laws and needed to be made accountable. The rates demanded by the company from the RAILROADS over the years and accounts of the company forcing smaller competitors out of business eventually saw the company charged with predatory pricing policies. But it was only with the presidency of Theodore Roosevelt that the company successfully was challenged in court.

In 1906, in the heyday of the trust busting era, the company was charged with violating the SHERMAN ACT. The U.S. Supreme Court ordered the breakup of the company in 1911 in a landmark decision. Standard Oil was ordered to divest itself of 33 of its companies, which were ordered to become independent and with no corporate ties to each other. Standard Oil of New Jersey remained the largest of the new, independent entities. In 1972, the company adopted its current name, the Exxon Corporation. Other notable companies created at the time of the divestiture were the Atlantic Richfield Company,



John D. Rockefeller (NEW YORK PUBLIC LIBRARY)

Chevron, Amoco, and the Mobil Corporation, the latter of which merged again with Exxon in the late 1990s to form Exxon Mobil.

Like many other industrialists of his day, Rockefeller held that competition was ruinous and inefficient. He shared this view with Andrew Carnegie and J. P. Morgan, among others, although his philanthropic activities help temper public opinion of him, especially after he began to withdraw from active management of the company. In addition to the University of Chicago, Rockefeller founded the Rockefeller Foundation in 1913 with a grant of \$100 million. The purpose of the foundation was to provide assistance for international humanitarian needs and to promote peace. He also established the Rockefeller Institute for Medical Research in New York City in 1901. It was the first institution in the United States devoted solely to biomedical research. It subsequently was renamed Rocke-feller University.

Many members of the Rockefeller family also made a contribution to business and public life, continuing the family dynasty. His only son, John D. Rockefeller Jr., bought the land on which the United Nations stands in New York and also developed another city landmark, Rockefeller's grandson, served as governor of New York from 1959 to 1973 and as vice president under Gerald Ford. The elder Rockefeller lived a long life and saw many of his children succeed in business on their own. He died in 1937.

See also EATON, CYRUS; MORGAN, JOHN PIERPONT.

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Rothschild, House of French banking house with branches in Britain and Germany that was a major supplier of investment funds to the United States in the 19th century. Although the family owned and operated bank was primarily a European institution, it nevertheless helped finance much of the early American infrastructure along with BARING BROTHERS, the British merchant bank. N. M. Rothschild & Sons, the English branch of the European bank, was founded in 1798 by Nathan Rothschild, who had been sent to Britain to deal in cotton for the family interests. It was the English branch that became the conduit for much of the European money that was to find its way to North America. The bank performed what today are called merchant banking operations, and one such operation was to act as agent for many Continental investors who wanted to invest in the United States. After the War of 1812, the bank competed with Baring when investing in the United States, mostly in state and city government bonds, U.S. TREASURY BONDS, and other foreign investments.

Like most foreign banks, the Rothschilds did not establish branches in the United Sates but preferred to appoint a domestic agent who would act on their behalf. Until 1837, Rothschild's main agent in the United States was L., J., & S. Joseph, a New York bank that failed during the Panic of 1837. The business was then assumed by a young employee of the Rothschilds who was in New York waiting to make a connecting voyage to Cuba, August Belmont. Belmont stayed in New York establishing himself as the bank's New York agent through August Belmont & Co. and became a popular figure on Wall Street.

Over the next 50 years, Belmont invested money supplied by the Rothschilds in many infrastructure investments, mainly state and U.S. Treasury bonds as well as in RAILROADS, shipping, and real estate. The bulk of the investment was done before the Civil War, especially in state and local government bonds.

The bank's influence began to wane with the death of Belmont in 1890, although the Belmont bank continued under the guidance of his son, August Belmont II. By World War I, that influence had almost completely disappeared as the United States began exporting capital rather than importing it. The Rothschild bank would remain prominent in European and international, rather than American, financial affairs after that time.

See also Belmont, August; Belmont, August, II; foreign investment.

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rubber industry The rubber industry in the United States dates back to the 19th century. In 1839, Charles Goodyear discovered that natural rubber, when mixed with sulfur powder at high temperatures, created an elastic and durable material. The process he named vulcanization made practical the use of rubber for a variety of purposes. Following this discovery, rubber companies began to proliferate in New England. The rubber industry of the 19th century consisted of small companies that focused primarily on the manufacture of rubber footwear and raincoats, but also produced hosing, belts, and insulating material. The rubber industry was dominated by small firms until 1892, when the United States Rubber Company (later Uniroyal) was created through the combination of 11 smaller companies and soon became the largest rubber company in the United States.

Decades after the rubber industry originated in the Northeast, the rubber tire industry emerged in Akron, Ohio, Dr. B. F. GOODRICH established the first rubber company in Akron in 1870, focusing initially on the manufacture of pneumatic bicycle tires. The bicycle craze of the late 19th century created a mass market for rubber tires and encouraged new competitors to enter the field. Akron quickly became the center of the rubber tire industry. By 1909, Akron was home to 14 rubber manufacturing companies. With the spread of automobile ownership, the manufacture of automobile tires became an increasingly important segment of the industry. Concentration of the industry in the Akron area increased through the 1920s such that, by 1930, approximately two-thirds of all tires produced in America came out of Akron.

During the 1930s, the rubber industry suffered from a decline in demand along with most producers of durable goods. The decade also witnessed the first successful attempt to create a union among the workers in the industry. Rubber manufacturers were staunchly antiunion and had successfully fended off earlier attempts to organize their industry. This changed during the 1930s following the passage of the National Industrial Recovery Act of 1933, which granted workers the right to join unions and bargain collectively with management. Soon, rubber workers were flocking to join the newly formed United Rubber Workers (URW). The URW successfully organized the industry, but only after a fierce battle with management that witnessed the first use of the sit-down strike, an aggressive tactic soon adopted by organizing drives in other industries. For the next 50 years, the URW acted as a powerful bargaining organization in the industry.

Since its emergence in the 19th century, the rubber industry had relied on the importation of natural rubber. Both World War I and World War II heightened concern in the United States about dependence upon imports of this crucial raw material, most of which came from Southeast Asia. Limited research on synthetic rubber had been conducted in the 1920s and 1930s. However, on the eve of World War II the American rubber industry still produced 99 percent of its product from crude rubber. When the war in the Pacific cut off supplies from Southeast Asia, the United States had stockpiles of crude rubber to last about a year. The war thus provided the impetus for intensive chemical research to develop an improved synthetic rubber. The federal government launched a synthetic rubber program in which it invested \$673 million to fund the construction of plants to produce GR-S (government rubber-styrene); by late 1943, American factories were turning out synthetic rubber. The federal government constructed 44 synthetic rubber factories during the war, which were operated and later purchased by leading

rubber manufacturing firms. Synthetic rubber became established as the primary raw material for the industry in the 1950s, as rubber manufacturers invested in laboratories to further research the development of improved synthetic rubber and rubber-based products.

Another major technological advancement in the American rubber tire industry came about in the late 1960s with the conversion to radial tires. American tire manufacturers had traditionally constructed tires on a bias principle, with plies of rubber fabric arranged at an angle of between 25 and 40 degrees. In France, Michelin had built radial tires since the 1940s, but American manufacturers were slow to embrace this method of construction and the capital investment it necessitated. Radial tires, in which plies are arranged at a 90-degree angle and reinforced with a rubbercoated steel belt, had advantages over bias tires. Radial construction reduced friction on the road, thus lessening wear on the tire and improving fuel efficiency, a consideration that was especially important during the 1970s.

For most of the 20th century, the rubber tire industry was one of the most centralized industries in the United States. Decentralization of the industry was a protracted process. The first steps occurred in the 1930s with the expansion of branch factories and establishment of new factories in the South and Midwest. The governmentbuilt factories constructed during World War II continued this pattern. Although still the major center of tire manufacturing, Akron's share of rubber tire production declined as newer factories increased total production. This pattern accelerated after the 1960s as firms began to close existing factories in Akron. The new factories constructed for the manufacture of radials in the 1970s and 1980s were concentrated in the South and other parts of the Midwest. The rubber industry gradually abandoned Akron, with its aging and inefficient plants and high-wage unionized labor force. Akron, while retaining the major research facilities and corporate headquarters, produced fewer and fewer tires. By the mid1980s, tire manufacturing had become concentrated in the South, and no major tire factories were in operation in Akron.

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Susan Allyn Johnson

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Salomon Brothers Investment banking firm founded by Arthur, Percy, and Herbert Salomon in 1910 in New York City. The original firm began as a money broker between brokerage houses and banks on Wall Street and slowly began trading in bonds during World War I. The firm became a primary dealer in Liberty loans during and after the war, while it continued to expand its operations in the corporate bond market.

The firm became known as Salomon Brothers & Hutzler after taking in Morton Hutzler as a partner in the first year of its operations. He owned a seat on the NYSE and became the firm's link to the wider stock business, although its primary emphasis remained bonds. It arranged for its first corporate bond underwriting during the Depression, but it was not until the late 1950s that its business began to boom. In the 1970s, the firm helped develop the market for mortgage-backed securities for the federally related mortgage assistance agencies and became the leader in that burgeoning field. In 1981, it was acquired by commodities trader Phibro (formerly Philipp Brothers) and became Phibro Salomon. In 1985, Salomon bought out the Phibro stake

and again became Salomon Brothers, now a publicly traded company.

In 1991, Salomon ran afoul of the FEDERAL RESERVE and the Treasury because of its behavior at an auction for U.S. Treasury notes when it cornered the market for the issue. The firm received relatively mild sanctions, but its management structure was changed, with Warren Buffett, a major investor, helping to reorganize the firm. Although the firm was rebuked, it did not lose any of its important Fed designations as a primary dealer in Treasury securities, which would have made it difficult to continue in the Treasury bond business.

In 1997, Salomon was acquired by the Traveler's Group, the insurance company run by Sanford WEILL, which also owned broker Smith Barney, and the two firms were combined to form Salomon Smith Barney. When Traveler's merged with CITIBANK to form Citigroup a year later, Salomon became the investment banking subsidiary of the new financial conglomerate, Citigroup. In 2003, the name was finally dropped by Citigroup after Citigroup was included in a \$1.4 billion settlement with regulators over irregularities in its business practices during the stock market bubble of the late 1990s. The Smith Barney unit continued under its own name.

See also INVESTMENT BANKING.

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Sarbanes-Oxley Act Officially known as the Public Company Accounting Reform and Investor Protection Act, this law was passed by Congress in 2002 in response to several accounting and financial scandals at major U.S. corporations, among them ENRON and WORLDCOM. During the late 1990s, it was discovered that these companies and several others had overstated their earnings, using questionable and fraudulent accounting techniques to inflate their earnings during the bull market in stocks. As a result, new legislation was proposed to strengthen the existing securities laws to prevent further problems. The bill was sponsored by Senator Paul Sarbanes, Democrat of Maryland, and Representative Mike Oxley, Republican of Ohio.

The law addressed the problem of accounting by public corporations and the responsibility of auditors to investors. The law created the Public Accounting Oversight Board, which has the broad responsibility of administering the act. The board is required to have five "financially-literate" members, appointed for five-year terms. Two of the members must be or have been certified public accountants, and the remaining members must not be and cannot have been CPAs. The board's members serve on a full-time basis. No member may receive money from an accounting firm while sitting.

The board's main responsibility is to govern public accounting firms that audit public companies and prepare their financial statements. The board, under section 103 of the act, is responsible for registering public accounting firms and establishing, or adopting by rule, "auditing, quality control, ethics, independence, and other standards relating to the preparation of audit reports for issuers." It also is empowered to conduct inspections of accounting firms, conduct investigations and disciplinary proceedings, and impose sanctions if necessary. The chairman of the oversight board is selected by the Securities and Exchange Commission.

In addition to the regulations governing accountants, the law also requires the SEC to establish standards for lawyers practicing before the commission. It also prohibits attorneys, accountants, or anyone involved with financial statements to "impede, obstruct or influence" federal investigation of irregularities. This was inserted into the law because of the problems at the Enron Corporation, especially when employees were discovered to have destroyed financial and other documents prior to the firm's bankruptcy in late 2001.

On the company side of the law, all company audit committees must have at least one financial expert as a member. Accountants serving as auditors cannot provide any other financial service to the companies they serve while completing the audit—an attempt to reduce conflicts of interest, especially when auditors also provided consulting services to companies at the same time they served as auditors.

See also Financial Accounting Standards Board; Generally Accepted Accounting Principles; Securities Act of 1933; stock markets.

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Sarnoff, David (1891–1971) *broadcasting executive* Born in Russia, Sarnoff moved with his

family to New York in 1900, where he left school at age 15 to help earn money for their support. Despite his lack of formal education, Sarnoff is considered the father of both radio and television in the United States. He went to work for the Marconi Wireless Telegraph Co. of America as an office boy and soon became a telegraph operator. He was on duty at the company when the *Titanic* sank in 1912 and was the first to receive messages from the S.S. *Olympic*, the rescue ship that was first on the scene. For the next three days, he was the sole source of information about the survivors, as all other telegraph stations were forced off the air by a presidential order.

In 1915, Sarnoff proposed a radio music box that would receive broadcasts over the airwaves. He suggested that it be sold for \$75 or less so that all homes could purchase one. It was not until 1919 that his vision began to be taken seriously, when the Marconi Co. became the RADIO CORPO-RATION OF AMERICA, owned by GENERAL ELECTRIC. In 1921, he was appointed general manager of the company that was first headed by Owen YOUNG of GE. He also created the first sports broadcast when he had the company cover a prizefight between Jack Dempsey and Georges Carpentier in New Jersey. A year later, the National Broadcasting Co. was proposed as the official broadcast arm of RCA, and the company was officially incorporated in 1926. The fight broadcast helped to sell radios, and by the end of the 1920s the company's sales were more than \$200 million.

In 1932, an antitrust decree from the Justice Department ordered a separation of RCA from GE, allowing RCA and its broadcasting company to emerge as an independent. Sarnoff became president of RCA in 1930. At the 1939 World's Fair in New York he predicted widespread television broadcasts. Experiments had already proven successful, but a better technology was required to make it universally popular. From 1939, Sarnoff was in direct and often fierce competition with William Paley, the driving force behind the COLUMBIA BROADCASTING SYSTEM, and the competition produced many innovations in television programming.



David Sarnoff (LIBRARY OF CONGRESS)

Sarnoff served with the U.S. Army Signal Corps during World War II and left the service with the rank of brigadier general—after which he was fond of being called "general." After the success of black and white television, color television was introduced in 1954 using the standards RCA had developed rather than those of its major competitors. Sarnoff retired from RCA in 1970 and died in New York in 1971.

See also RADIO INDUSTRY.

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savings and loans Also referred to as thrift institutions, savings and loans traditionally are

limited service banks that take customer deposits and make mortgage loans. Because of their limited functions, they have not been considered banks by the FEDERAL RESERVE but have been treated as institutions that provide long-term funds to the mortgage market and not as part of the money creation process, as are commercial banks.

The first savings and loan, or S&L, in the United States was the Oxford Provident Building Association, established in Philadelphia in 1831. Modeled after similar British institutions, the early associations were local or regional in nature and took deposits from members of an association or trade group. Most of the associations were also mutual rather than stock companies, meaning that they were owned by their depositors.

S&Ls were state chartered until 1932, when Congress created the FEDERAL HOME LOAN BANK BOARD. The board itself comprised 12 regional home loan banks around the country, similar in organization to the Federal Reserve. The board, located in Washington, D.C., has regulatory authority over thrifts that choose to join. Federally chartered thrifts, as they are called, may borrow from their regional bank and have their reserve requirements set by it as well. Those that do not join are referred to as state chartered.

The thrifts maintained a close hold on residential mortgage lending, but their numbers declined over the years. More than 7,000 existed in the mid-1930s, but their numbers declined to about 3,500 by the late 1980s. Consolidation of the industry and several crises helped reduce their numbers. Their first serious postwar crisis occurred in the late 1970s as savers began to withdraw their deposits in search of higher interest rates in money market mutual funds. The thrifts could not respond by offering higher rates because the amount of interest they could pay was limited by banking regulations. As a result, many of them became disintermediated, and the entire industry lost money in 1980-81, causing the DEPOSITORY INSTITUTIONS ACT of 1982 to be passed. Although

the legislation liberalized thrift assets and liabilities and allowed them greater flexibility in their activities, poor management, fraud, and imprudent investments led to another crisis in 1988. Losses on commercial real estate lending and JUNK BONDS led to another industry-wide shakeup when the FINANCIAL INSTITUTIONS REFORM, RECOVERY AND ENFORCEMENT ACT (FIRREA) was passed in the summer of 1989.

The FIRREA imposed new, more stringent requirements on the thrifts, and many more went out of business or were acquired by larger financial institutions. As a result, the industry was seriously shaken as many thrifts changed their charters to that of savings banks, allowing them greater flexibility in their borrowing and lending activities, but still not converting to fullfledged commercial bank status. Today, the thrifts still make mortgages and take deposits but also generally make commercial real estate loans, consumer loans, and issue CREDIT CARDS. They now also extend across state lines and are larger than their predecessors on average, having access to a wider customer base and thus to greater funds.

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Schiff, Jacob (1847–1920) *banker* Born into a prominent family in Germany, Schiff began his working career at age 14 as an apprentice in a commercial firm in Frankfurt. He traveled to the United States in 1865 to work in a New York brokerage office and became a citizen in 1870. In 1872, he decided to return to Germany, where he became the manager of a branch bank. In 1875, he married the daughter of Solomon Loeb of the Kuhn Loeb banking house and returned to the United States in that same year as a full partner in KUHN LOEB & CO.

Schiff was raised in a tight-knit Jewish social circle that included the Rothschild and Warburg banking families, and he learned the principles of close-relationship banking from them during his early years. He carried the same principles to New York when he emigrated. He quickly became one of the best-known bankers of his generation and a leader of the American Jewish community.

The period 1890-1920 became known as the "Age of Schiff." He was the most prominent banker of his generation, especially after J. P. Morgan died in 1913. He became the managing partner of Kuhn Loeb and helped the firm establish its reputation, initially in railroad financing. He also helped E. H. HARRIMAN gain control of the UNION PACIFIC RAILROAD and helped arrange financing for the Southern Pacific Railroad, Royal Dutch Petroleum, Shell Transport and Trading, and most notably the Pennsylvania Railroad. He financed more than a billion dollars worth of securities for the railroad, including its tunnel under the Hudson River and its Pennsylvania Station in New York City. He also was an adviser to Theodore Roosevelt, although, like many other German-American bankers, he opposed the establishment of the FEDERAL RESERVE.

Schiff helped the Japanese government raise money during the Russo-Japanese War of 1904–05 and had various interests in life insurance companies in New York that were the subject of the Armstrong investigations in 1905. He was also a strong believer in the GOLD STANDARD. He opposed the massive Anglo-French loan, led by J. P. Morgan & Co. in 1915, on the grounds that the proceeds might fall into the hands of the Russian government, which had a strong record of anti-Semitism before the Russian Revolution of 1917. His opposition earned him and his firm enmity in some quarters, where he was labeled as a German sympathizer. Throughout his tenure at the bank, Kuhn Loeb was known primarily as a bond house and participated in few equity financings.

Schiff was a strong supporter of Jewish causes in both the United States and Europe. Schiff is also remembered for his philanthropy, especially to Harvard University, Tuskegee Institute, the American Red Cross, and to many Jewish causes, including the Hebrew Union College in Cincinnati.

See also investment banking; Lehman Brothers.

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Schwab, Charles M. (1862–1939) *industrialist* Born in Williamsburg, Pennsylvania, Schwab attended St. Francis College in Loretto before taking an unskilled laborer job at the Edgar Thomson Steel Works, a subsidiary of the Carnegie Steel Company. After beginning his career as a stake-driver at \$2 per day, he steadily worked his way through the ranks. In 1887, he was made superintendent of the Homestead Works in Pennsylvania and superintendent of the Thompson plant two years later. He was put in charge of repairing relations at Homestead after the bitter riot in 1892. Five years later he was named president of Carnegie Steel Co. and was earning more than \$1 million per year.

It was a speech by Schwab in 1900 that prompted J. P. Morgan to make his bid to buy Carnegie Steel, paving the way for the formation of U.S. Steel. After the U.S. STEEL CORP. was formed in 1901, Schwab became its first president; after subsequent disagreement with Elbert GARY, he became disillusioned and resigned in 1903. In 1904, he reemerged in the industry by buying a small steel maker named Bethlehem Steel. He intended to make the small company a major competitor of U.S. Steel.

Bethlehem grew and became very successful after Schwab introduced the open-hearth process of making steel at his plants. His greatest success came during World War I, when he traveled to Britain under an assumed name to sell his products to the British. After consulting with Lord Kitchener, the war secretary, he obtained a large order for steel, and later submarines, to be supplied by Bethlehem. Since American companies were forbidden to sell finished war products to Britain, he sold the parts for the submarines instead.

During the war, Bethlehem Steel took orders exceeding \$500 million from the Allies. During the 1920s, he remained salaried at Bethlehem, although he began making other investments as well. He invested in International Nickel and Chicago Pneumatic Tool, among others. But his investments in stocks were uniformly disastrous, and by the early 1930s he had lost almost all of his \$200 million fortune. He died in penury in New York City.

Under Schwab's direction, Bethlehem emerged as a major steel producer, although U.S. Steel would remain the largest firm in the industry. The company was finally liquidated in 2003, a victim of imported steel and declining capital investment.

See also CARNEGIE, ANDREW; STEEL INDUSTRY.

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Scott, Thomas A. (1823–1881) railway executive Born in Fort Loudon, Pennsylvania, Scott's father was a tavern owner. He left school at age 16 to work as a clerk in a general store until he secured a job working for Major James Patton, his brother-in-law and the collector of tolls in Pennsylvania for public roads and canals. He was chief clerk in the state toll collector's office from 1847 until 1850, when he went to work for the Allegheny Railroad.

In 1860, he was named vice president of the Pennsylvania Railroad. When the Civil War began, he was asked by the secretary of war to transport men and munitions between Baltimore and Harrisburg, Pennsylvania. The railroad connecting the two points, the North Central, was vital to protecting Pennsylvania from attack, and Scott took a telegrapher named Andrew CARNEGIE with him on his journey. In 1861, he was named an assistant secretary of war in charge of RAILROADS and transportation. The next year he was named an assistant quartermaster general for the government. A year later, Scott helped Carnegie found the Keystone Bridge Company.

Under the guidance of J. Edgar Thompson as president and Scott as vice president, the Pennsylvania Railroad grew substantially. Scott personally helped consolidate the railroad, especially in western Pennsylvania and the Midwest, in order to counter Jay Gould's attempts to expand the ERIE RAILROAD. In 1871, the Pennsylvania Railroad expanded into the South by taking over lines extending south of Richmond, Virginia. In the same year, the troubled UNION PACIFIC RAILROAD was also brought into the Pennsylvania's control when Scott assumed the presidency of the line. When Thompson died in 1874, Scott succeeded him as president.

When Scott assumed the presidency, the Pennsylvania was the largest railroad line in the world. Upon assuming the office, he helped the company's finances by paying off and restructuring its debt and reducing its operating costs. But a ruinous battle with John D. Rockefeller damaged his reputation and the railroad's preeminence. In 1877, Rockefeller declared that he would no longer use the railroad for shipping the Standard Oil Company's products because of a prior dispute. As a result, the Pennsylvania lost almost 70 percent of its oil shipping revenues. Rockefeller gave the business to the New York Central and the Erie.

A serious strike by workers in 1877 also damaged the railroad's reputation. Scott decided to cut workers' wages and increase tonnage on the trains, prompting workers to strike. Militia were called in to aid local police in quelling the disturbance; they fired on strikers, causing many deaths and further strikes. A year after the disturbance, Scott suffered a stroke and died in 1881.

Scott was considered the greatest railroad manager of his day and the organizational force behind the Pennsylvania Railroad. After the Civil War, he also became an astute capitalist, investing in oil producing properties in Pennsylvania and California. One of his investments later became the Union Oil Company of California.

See also GOULD, JAY.

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Sears, Roebuck & Co. Merchandise catalog company and mass retailer founded in Chicago by Richard W. Sears (1863–1914) and Alvah Roebuck in 1886 as the R.W. Sears Watch Co. The company changed its name to Sears, Roebuck & Co. in 1893 and began to expand into the mail order sale of household items and clothing. The initial thrust of the effort was aimed at rural areas where retail stores were in short supply. The company's major competition came from Aaron Montgomery WARD, whose Chicago-based Montgomery Ward practiced the same business strategy. By the mid-1890s, the company was producing large catalogs full of every conceivable consumer good.

Juilius Rosenwald was hired from the clothing business as a vice president to help in expanding the operation, and he and Sears sold stock in the company in 1906. The stock issue was an enormous success, underwritten by Rosenwald's friends at LEHMAN BROTHERS and GOLDMAN SACHS. The 1920s were a pivotal period in the company's history, as rural areas began to decline in population and their inhabitants moved to the cities. The company stock was added to the Dow Jones Industrial Average in 1924. Sears's expansion was led by a vice president, Robert E. Wood. As a result, Sears opened its first retail store in 1925, and within four years, there were more than 300 operating. By 1933, 400 were in operation.

The company maintained the catalog in addition to the stores. Its success led it to expand into other areas. In 1931, it opened the Allstate Insurance Co., which also used a branch system to reach customers. In the 1970s, it added the financial service company and broker Dean Witter and real estate company Coldwell Banker. It also developed a new credit card named Discover, in addition to its already famous Sears credit card, which provided installment credit to shoppers on a revolving basis and was designed to compete with Visa and Mastercard.

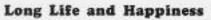
After suffering competition from newer, rapidly expanding chains such as Wal-Mart and K-MART, the company revamped its operations, selling Allstate, Dean Witter, and Coldwell Banker. It also built the Sears Tower in Chicago, at that time the world's tallest building, to serve as its headquarters but later moved its operations out of Chicago. The company began to suffer slower sales in the 1990s, and much of its revenue came from its credit card division rather than from retail sales. It was dropped from the Dow Jones Industrial Average in 1999 and replaced by Home Depot. With Sears still losing ground to the likes of Wal-Mart and Target, the management of K-Mart announced in 2004 that it would merge with Sears to make the third largest retailer in the United States.

See also CHAIN STORES; WALTON, SAM.





Killie



To get the full share of Good Health, Long Life and Happiness for yourself and kiddles, to get the most out of life as our Creator intended it should be, A HOME OF YOUR OWN is an absolute necessity.

It promotes happiness and contentment, for it is the most pleasant and natural way to live. It has the correct environment made up of the natural instead of the artificial.

Green grass, trees, shrubbery, flower and vegetable gardens all your own, provide a pleasant pastime, and an abundance of the things we all crave. It is the real life that leads to happiness, for you, and those you love.

Best of all, a home of your own does not cost you any more than your present mode of living. Instead of paying monthly rental, by our Easy Payment Plan you may have all these luxuries at a lower cost and, in the end, have a beautiful home instead of worthless rent receipts.

Our plan is simple. It has already enabled thousands of people to get out of the renter's class. This plan will put you in your own home and give you your independence.

On the following pages you will find over 100 designs of homes. Some of them will sarely meet with your ideas of what a real home should be.

We will gladly tell you all about any house in this book and will show you how easy it is to own a hears on our Easy Payment Plan. Write us. An information Blank has been placed in the back of this book for your convenience.

Be sure to read about our Ready-Cut System on pages 10 and 11, and how this system will save about one-half of your carpenter labor.

Information Blank on Page 141



Be Independent in Old Ag



Page from the Sears, Roebuck catalog selling kit homes, 1928 (LIBRARY OF CONGRESS)

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Securities Act of 1933 The first federal securities REGULATION was passed in March 1933 in response to congressional hearings into stock market practices. The act required corporate issuers of new securities to register the issue with the (then) FEDERAL TRADE COMMISSION. After the Securities Exchange Act was passed in 1934, jurisdiction for new issues passed to the newly created Securities and Exchange Commission (SEC).

Before the act was passed, the only protection against the sale of fraudulent securities was bluesky laws. The first blue-sky law was passed in Kansas in 1911 as a reaction to unscrupulous stock salesmen selling sham securities. Other states then began to pass their own laws, especially since no comparable federal regulations existed. About two-thirds of them had similar laws on the books by 1920.

The laws were a product of the Progressive Era, when the rural, agricultural states of the Midwest and far West looked askance at Wall Street and financiers in general. Many stock promoters would sell worthless stock in these states to unsuspecting investors. After the Securities Act of 1933 was passed, the federal government assumed the prominent role in controlling the sale of securities interstate, but the local laws remained. The act was first referred to as the federal blue-sky law. As part of the process of selling new corporate securities, investment bankers refer to the process of registering with the individual states as "blue-skying." Most of the bluesky laws remain in effect today.

Historically, the laws were the first to attempt to control the securities markets in the absence of federal law. At the same time, several states in the Midwest also enacted legislation to control insurance sold within their jurisdictions, partly in response to scandals occurring in the New York insurance market before 1910. Although most of the blue-sky laws could restrict only the securities sold within a state's borders, they were a clear attempt to protect citizens from the sort of fraudulent securities dealing in which only the "blue sky" was being sold to unsuspecting investors rather than securities of any tangible value. When combined with other attempts to protect investors and savers in some states from the sale of bogus insurance policies, they remained the cornerstone of what regulation did exist in the United States prior to the passing of New Deal legislation.

With the passing of the Securities Act, standard procedures were adopted. Before new issues of corporate securities could be sold, a registration statement had to be filed with the SEC, which required a company to fully disclose its financial position. In addition, a prospectus had to be prepared making all relevant details of the company's business and finances available to the public. Failure to disclose relevant information, or the dissemination of deliberately misleading information, or fraud were proscribed and accompanied by penalties, both for the issuing company and its investment bankers and auditors.

In addition to domestic corporate securities, the issues of foreign companies and governments were also included in response to problems encountered after the 1929 crash, when many foreign bonds defaulted on their interest to American investors. Many were found to have been issued with minimal information provided by either the borrowers themselves or their investment bankers. As a result of the act, due diligence was given a legal basis, meaning that a company must be properly vetted before it enters the marketplace for public securities. A significant requirement of the act was publication of a tombstone ad after a new securities issue has been sold. A tombstone ad is a type of financial advertising that lists in a box advertisement the basic details of a new issue of stock or bond. "Tombstone" derives from the language used in the ads, which are usually printed in the newspapers after the securities mentioned have been sold, that is, after the deal has been completed. The ads require all issuers of corporate securities to follow certain procedures when first selling them to the public. The tombstone ad is one of the last steps in the process.

In addition to the basic details of the new issue, tombstone ads also list the underwriters in a new securities deal. Those at the very top of the list are the major bankers to the deal, while those below are ordinary underwriters, members of the syndicate arranged especially for the deal itself. The top left spot in the list is for the manager that arranged the transaction with the issuer of the securities. Keeping track of tombstone ads, especially in determining which investment bank arranged the deal, is a major preoccupation on Wall Street, where prowess in underwriting is closely monitored.

Tombstone ads are also required when municipal securities are sold and are also used in certain types of banking transactions, especially for large loans that are syndicated among participating banks. In the past, securities regulators have closely studied tombstone ads over a period of time to detect patterns among investment bankers, mostly to determine whether syndicates are formed for the occasion or whether they contain the same underwriters over the years.

One of the areas affected by the new law was initial public offerings, or IPOs—the sale of shares in a company for the first time. Previously, companies' capital was held in private hands. The sale of an IPO allows companies to grow and also to limit the liabilities of the individual owners. Traditionally, new issues of stock are sold by investment bankers, who charge a fee to the companies for their services.

IPOs usually grow exponentially in strong STOCK MARKETS, when investors search for new companies and ideas. They are distinct, however, from venture capital-money provided by investors to help a company develop its products or services. The money usually is provided on a private basis for a limited period of time, after which the company normally is expected to sell stock. The investors' return can be measured by the amount they take away from the company versus their original investment. Venture capital is the riskiest investment ordinarily made in a company but also the one with the highest potential return. If the investment should fail at an early stage, there is little outlet for investors other than to find other buyers at lower prices. Nevertheless, venture capital plays a significant role in helping many companies establish themselves early in their development.

The Securities Act helped revolutionize Wall Street, establishing regulatory control over the new issues process for the first time. It also helped establish uniform accounting (GENERALLY ACCEPTED ACCOUNTING PRINCIPLES) standards used for financial reporting. It marked the beginning of greater transparency in the corporate securities markets, in which all financial statements are assumed to contain all the relevant information that is known about a company when it files.

See also Financial Accounting Standards Board; investment banking; Sarbanes-Oxley Act.

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Securities and Exchange Commission See Securities Exchange Act of 1934.

Securities Exchange Act of 1934 Passed the year following the milestone banking and securities acts of 1933, this act was designed to provide federal regulation of the organized stock exchanges for the first time. Previously, the exchanges had regulated themselves, and their practices were subject only to state securities laws.

The act provided a regulator for the new issues market for corporate securities, in addition to the self-regulation practiced by the various stock exchanges. It created the Securities and Exchange Commission (SEC), the regulator of the exchanges that would also oversee the registration procedures outlined in the SECURITIES ACT OF 1933, assuming the authority for new issues registration from the FEDERAL TRADE COMMISSION. All organized securities exchanges in the country were required to register with the new SECwith the exception of the over-the-counter market, which was not considered to be an organized exchange with a central location. Stock exchange procedures were also made uniform, and strict rules were written to control stock market practices such as short selling.

The SEC consists of five members. Joseph P. KENNEDY was the first chairman, and James Landis, Ferdinand Pecora, George Matthews, and Robert Healy were the other original commissioners. The first commissioners spent most of their time organizing the SEC's agenda and making sure that Wall Street accepted its first national regulator. Subsequent commissions have played a strong role in enforcing the securities laws and prosecuting those accused of insider trading and other securities infractions.

The new law also gave the FEDERAL RESERVE the right to set margin requirements for stock market investors. Previously, margin requirements were set by the brokers themselves, who often extended their customers too much credit, contributing to the Crash of 1929. Since margin money was often loaned to the brokers by banks, the ability to regulate that form of bank lending naturally fell to the Fed as the regulator of the nation's credit.

Over the years the SEC's effectiveness has ranged from weak to very strong. It has constantly attempted to adapt its rules to the needs of the marketplace so as not to become an ineffective regulator. One of its most important changes occurred in the 1980s, when it adopted Rule 415b, also known as the shelf registration rule. This refers to the process of registering new corporate securities with the SEC, which bypasses the traditional procedures outlined in the Securities Act of 1933. According to the 1933 act, new securities could not be sold until 20 days after registration in order for the potential new issue to be vetted properly by the SEC. During that waiting period, underwriters were able to form syndicates in order to sell the securities once they were approved for sale.

The 20-day cooling-off period was proving to be too slow for new issues to reach market. In response, the SEC began a new procedure under Rule 415b called shelf registration. A company could preregister its potential issues with the SEC, which would then put the registration "on the shelf." When a company wanted to get to market quickly, it would present its interim financial statements to the SEC and would then be allowed to proceed to market immediately rather than wait. The procedure quickened access to the new issues market and allowed companies to take advantage of conducive market conditions.

The rule also helped many companies use new defenses against the hostile takeover, which was becoming common in the 1980s. Companies would register new issues of bonds and preferred stocks and then issue them quickly if a hostile takeover was detected. The resulting leverage from the new issue would help ward off unwanted corporate raiders. The quick access to market provided by Rule 415b proved advantageous for corporate defenses as well as more traditional capital raising activities. Although a Wall Street practice confined to the new issue of securities, Rule 415b was seen as a part of the DEREGULATION trend that affected many industries in the 1980s and 1990s. It was especially significant on Wall Street, since the securities industry is one of the most regulated industries in the country and changes in SEC practices and procedures traditionally came very slowly.

In the wake of the trading scandals of the early 2000s, the SEC became more of an activist agency than in the past. During the tenure of Arthur Levitt, named by President Clinton to be chairman, the agency took strong stands on accounting practices and small investor fraud but was often drowned out by the clamor created by the bull market that finally collapsed in 2000. After Harvey Pitt resigned, the commission began a series of active investigations headed by William Donaldson.

Along with the Securities Act of 1933, the Securities Exchange Act provides the cornerstone of securities regulation in the United States. The 1933 act regulates the primary market for securities, while the 1934 act regulates the secondary market for registered securities.

See also National Association of Securities Dealers; Sarbanes-Oxley Act; stock markets.

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Seligman & Co., J. & W. Investment banking house founded by Joseph Seligman (1819–80) in Lancaster, Pennsylvania, originally as a dry goods and general merchandise store. Seligman immigrated to the United States from his native Germany in 1837 and went to work for Asa Packer, who manufactured canal boats. After working for Packer for a short period, he saved enough money to bring two of his brothers to the United States and with them opened the general merchandise store in Lancaster in 1841.

Shortly thereafter, the store moved to Selma, Alabama, where it remained until the firm opened a branch in New York City in 1846. By the beginning of the Civil War, the firm had changed its business to general merchant banking and in 1864 fully converted to a banking business, as did several other Jewish-American merchant houses, including Lehman Brothers. The firm was aided greatly by the Seligmans' friendship with Ulysses S. Grant, who they had met while he was a lieutenant in the peacetime army. They did a thriving business supplying the army with merchandise but were also impressed by the success of Jay COOKE in selling war bonds to the public. As a result, they used their European connections to begin selling bonds, and the business began to shift.

After the war, the firm began to underwrite securities in gas companies and RAILROADS. They also provided financial support for Mary Todd Lincoln after her husband was assassinated. Several of the brothers also posted bond for Jay GOULD when he was jailed for his activities at the ERIE RAILROAD in 1868. A tutor hired by Joseph Seligman to teach his children—Horatio Alger used the family as his model for hard work and success, and Alger's stories of young men working their way to success in America became some of the best-selling books of the century.

The firm enjoyed its greatest success between the 1890s and the 1920s. It participated in all major Wall Street financings, including the reorganization of GENERAL MOTORS during the 1910s, when it was led by William C. Durant. The Seligmans remained firmly in the INVESTMENT BANKING business through the 1920s, when they began to offer MUTUAL FUNDS in addition to their other banking services at the suggestion of a nonfamily partner, Francis Randolph. The firm offered its first, called the Tri-Continental Corp., a year before the Crash of 1929, and it was a resounding success. After 1929, the firm moved closer to the funds business and further from investment banking and finally became known as an investment company, offering mutual funds rather than investment banking.

See also KUHN LOEB & CO.

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sewing machine See Singer Sewing Co.

Sherman Act First ANTITRUST legislation passed by Congress, in 1890. Senator John Sherman of Ohio proposed the statute that bears his name, but the people most responsible for the bill that finally emerged were Senators George Edmunds of Vermont, James George of Mississippi, and George Hoar of Massachusetts. The most important provisions of the Sherman Act condemned contracts, combinations, and conspiracies in restraint of trade, and also condemned monopolization.

Nominally, the two provisions were intended to federalize state common law in regard to trade restraints, thus enabling courts to reach firms such as Standard Oil Co., which operated in many states. But judicial interpretation of the Sherman Act soon abandoned common law principles, beginning with the Supreme Court's 1897 conclusion in the Trans-Missouri Railroad case that the act reached "every" restraint of trade, and not merely unreasonable restraints. By the 1920s the modern structure of antitrust law was largely developed, with the simple CARTEL condemned automatically, more complex joint ventures involving coordination of production condemned only if unreasonable, and anticompetitive conduct by dominant firms condemned only in the presence of economic power plus one or more anticompetitive acts.

Much of the recent scholarly debate about the Sherman Act has concerned its ideology, intended beneficiaries, and economic consequences. Beginning in the 1960s some scholars argued that Congress's goal in passing the Sherman Act was to encourage economic efficiency from low-cost production and competitive markets. Others argued that Congress was really concerned about high prices and wished to protect consumers from being gouged. But the most persuasive arguments are that Congress was mainly concerned with protecting small businesses from aggressive competition and innovation by larger firms, perhaps at the expense of high consumer prices. Standard Oil and the sugar trust, frequently named as villains in the legislative history, had both produced dramatically declining prices during the 1890s-hardly suggesting that Congress was obsessed with high prices.

Scholarly interpretation of the antitrust laws has fallen into three different camps, or "schools." On the political left, the Columbia School advocated an antitrust policy sensitive to antitrust's common law origins, solicitous of small business and relatively noneconomic in its approach. This view was prominent from the late New Deal through the 1950s but is clearly in eclipse today. On the right is the Chicago School, whose views were developed by Chicago School economists in the 1950s and 1960s, practically applied to antitrust policy by Richard A. Posner in the 1970s, and popularized by Robert H. Bork. Chicago School adherents believe that markets are extremely robust, that consumers are well informed, and that government intervention rarely benefits consumers in the long run. They favor a minimalist antitrust policy focusing on collusion and MERGERS that create monopolies. In the middle is the Harvard School, championed by Edward Chamberlain in the 1930s, Joe S. Bain in the 1950s, and Phillip E. Areeda and Donald F. Turner in the 1970s and 1980s. In common with the Chicago School, the Harvard School employs sophisticated economic methodologies, but the economics is more complex, inclined to take strategic behavior and game theory more seriously, and doubts that markets are quite as robust as the Chicago School makes them out to be. As a result, it finds more room for intervention than the Chicago School does, but considerably less room than the Columbia School.

See also CLAYTON ACT; ROBINSON-PATMAN ACT.

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Herbert Hovenkamp

shipbuilding industry Shipbuilding is one of the oldest manufacturing industries in the United States, and the nearly constant competition with foreign producers provides many insights into American business history. Technology has been dominant throughout and defines the three major periods in the evolution of shipbuilding.

The first oceangoing ship built in the United States dates to 1631. The abundance of excellent timbers close to the seacoast fostered the establishment of many small shipyards throughout New England, with a notable concentration in Maine. Other shipyards later appeared in the Delaware River Valley and in Chesapeake Bay, until a total of 125 existed by the end of the colonial period. To build warships, the Royal Navy established naval shipyards at Portsmouth (now in New Hampshire) and at the fine harbor of what later became Norfolk Navy Yard. This last yard marked the southern limit of the shipbuilding industry. Although ship repair facilities came to the U.S. South by the end of the 19th century, no major shipyards appeared there until the 20th century.

During the colonial period, the abundance of low-priced lumber meant that building ships in America, in spite of higher wages for workers, cost 30 to 50 percent less than in Britain. Onethird of British tonnage came from the colonies, and American-built ships were present in all the major trade routes of the British Empire. The quality of American ships, however, was not always satisfactory, and the largest and finest vessels came from Britain.

Independence from Britain in 1783 brought challenges to a new republic that was no longer enjoying the benefits of imperial protection. In what became a permanent characteristic of U.S. policy, the government tried to foster shipping and shipbuilding simultaneously. In 1789, the U.S. Congress approved a ship registry that limited the U.S. flag to ships built in the United States; this law was intended to protect domestic shipbuilding from foreign competition. Congress increasingly restricted the participation of foreign ships in the "coastwise" trade (among U.S. ports); after 1817, only vessels flying the U.S. flag and built in domestic shipyards could carry cargo and passengers in the coastwise trade. These two protectionist measures have remained the foundation of maritime policy and have guaranteed markets to both shipping companies and domestic shipyards. In reality, the low price of U.S. wooden ships made the laws unnecessary.

More effective than U.S. laws were the foreign Navigation Acts. To protect their own shipbuilding industries, Britain and other foreign countries prohibited or hindered the purchase of U.S.-built ships. Thus, the only market left for domestic shipbuilders was U.S. shipping, which enjoyed its greatest period of expansion and prosperity from independence until the 1850s.

Maine became the most important shipbuilding state. The Boston yards remained very active, but the rest of New England declined. First the Hudson River and then the ERIE CANAL brought lumber from inland forests to New York City, which became a new shipbuilding center after 1830. Throughout the age of wood, shipyards remained small personal ventures, without any large organization; changes in location to take advantage of nearness to timber stands were not unheard of. In a distinct category were the large U.S. Navy shipyards. The U.S. Navy had taken over the old shipyards of the Royal Navy at Portsmouth and Norfolk and eventually established new yards at Philadelphia and New York. In the early decades of the 19th century the naval shipyards moved from ship repair to the construction of warships, a tradition of building that lasted until 1967.

The great shipbuilding boom of 1847-57 was the climax of the age of wood and sail. New shipyards appeared, while existing yards labored under a backlog of orders. Shipbuilders strove to design and produce the best and fastest wooden ships in the world. For the North Atlantic trade, shipbuilders launched packet ships to carry cotton and to return from Europe with passengers and manufactured goods. Less profitable but more spectacular were the famous clipper ships. In response to the California gold rush of 1848-49, shipbuilders constructed the long and narrow clippers with their towering masts to achieve the maximum speed. The financial Panic of 1857 ended the 11-year boom. Even during the boom years, the price of lumber had been steadily climbing, and scarcity had forced builders to employ inferior woods. Labor costs had been rising, too, while shipyards remained undercapitalized and lacked the equipment available in British yards that were rapidly converting to a new technology.

The shipbuilding boom of 1847–57 had disguised the stagnation in the industry. Shipbuilders refused to experiment with the steam engine. The U.S. Navy did realize that warships needed to have steam power, and thus only naval shipyards fitted steam engines to wooden vessels. The Civil War (1861-65) gave one last boost to the construction of wooden ships, but the shipbuilders did not use their wartime profits to fuel a gradual transition to iron and steam, even though the classic naval battle between the Monitor and the Merrimack had already shown that armor plating and steam engines were indispensable for warships. Britain, meanwhile, had taken the lead in replacing wood first with iron and later with steel in the 1880s. The compound engine and then the triple-expansion engine had made steam power competitive with sailing ships. Britain was producing a large number of economical steamships that would dominate the trade routes of the world after the Civil War.

The end of the Civil War dried up new ship orders, yet wooden shipbuilding continued in the United States until the early 20th century, declining at a steady tempo. Few shipbuilders of the age of wood made the transition to steam, the Cramp yards being the only notable exception. The new shipyards that emerged in the 1870s grew out of machine and engine shops. Labor costs remained higher than in Britain, and steel cost more than in Britain because of the monopoly practices of the U.S. STEEL INDUSTRY. Depending on the vessel type, shipbuilding prices were 25 to 50 percent higher in the United States than in Britain. Ship orders came primarily from the coastwise trade, which expanded after the Spanish-American War of 1898 to include the islands of Hawaii and Puerto Rico. The discovery of large oil fields in Texas created a demand for U.S.-built tankers to carry oil to the Northeast.

The expansion begun by the U.S. Navy in the late 1870s provided the single most important customer for domestic shipyards. Although the U.S. Navy wanted to rely exclusively on its own yards, private owners, most notably John Roach, lobbied aggressively to obtain navy contracts. Roach's shipyard became the largest in the United States, but its owner's bankruptcy in 1885 passed the leadership to the Cramp shipyard. The latter struggled to survive but in its weak financial position could not prevent New York Shipbuilding from becoming the most prominent U.S. shipyard by the turn of the century. In spite of its name, New York Shipbuilding was in the Philadelphia area, near the Cramp and Roach yards. Like the other yards, New York Shipbuilding also obtained contracts from foreign navies such as Argentina's. Unlike with merchant ships, U.S. yards were able to reduce the price differential for warships, sometimes to only 10 percent more than British yards.

From the Civil War to World War I, foreign ships, usually built in British yards, carried almost all the foreign trade of the United States. The outbreak of World War I in Europe in 1914 created an acute shipping shortage, and high freight rates easily covered the higher prices of U.S.-built ships. The domestic yards were swamped with orders and had a backlog of many years. Another shipbuilding boom, reminiscent of that during the Civil War, had begun, but builders could not produce ships fast enough to end the crisis. Cries for government intervention and support were insistent. The opposition to government ownership of commercial ships delayed the congressional creation of the U.S. Shipping Board until September 1916, and even then little activity took place. Only on April 17, 1917-after the U.S. declaration of war on Germany on April 6-did the U.S. Shipping Board establish the Emergency Fleet Corporation to build and to operate merchant ships. The new corporation opened government yards to build ships. The most famous was the Hog Island yard in Philadelphia, which pioneered mass-production techniques to build ships in series.

World War I ended unexpectedly in November 1918, when the construction program was barely underway. Most ships of the program entered service after the war had ended and produced a glut in tonnage throughout the world. After 1920, shipbuilding slowly slipped into a depression as the new yards of World War I closed and the old yards dramatically shrank. The greatest shock came in 1927, when the by now venerable Cramp shipyard ceased operations. Even with timely naval contracts, New York Shipbuilding struggled to survive. The Great Depression paralyzed the surviving shipyards, and not until the naval rearmament program of the late 1930s did shipbuilding start to revive.

The outbreak of World War II in Europe in 1939 brought another wartime shipbuilding boom. Just as during previous wars, the United States now hurriedly rushed to create a shipbuilding capacity. After U.S. entry into the war in December 1941, the United States Maritime Commission (the successor to the U.S. Shipping Board) took full control of shipbuilding. Besides supporting the enlargement of existing shipyards, the Maritime Commission offered lucrative contracts to lure businessmen into opening shipyards. As during World War I, the Maritime Commission built merchant ships in series, most notably the Liberty and the Victory types. The commission also built many warships and military craft, but navy yards constructed most of the large warships. Again, as after World War I, the end of the war in 1945 left world shipping glutted with surplus tonnage.

The surplus ships were much more numerous than after World War I and depressed world shipbuilding for more than a decade. U.S. shipbuilding again was in crisis. Surplus ships invaded even the shrinking coastwise trade, which had lost to pipelines the profitable tanker route between Texas and the Northeast. Government funding ("construction differential subsidies") helped land orders for U.S.-flag vessels in the foreign trade, but increasingly ferocious competition checked the expansion of U.S. shipping companies. The Maritime Administration, the successor of the United States Maritime Commission, made one last attempt to save both shipbuilding and shipping. In coordination with the individual shipping companies, the Maritime Administration designed and financed the Mariner class of fast merchant vessels. Produced



A floating dry dock in Louisiana, 1903 (LIBRARY OF CONGRESS)

in series in the 1950s, the Mariners were the last major commercial success of U.S. shipyards.

Since the 1880s, steel has remained the basic material for shipbuilding, and in the 1920s the diesel began to replace the steam engine in world shipping. The United States resisted this trend and instead shifted to the steam turbine, which powered the Mariners but was costly to operate. The appearance of containers in the 1960s marked an urgent need to build a new type of ship. The Maritime Administration, the shipyards, and the shipping companies failed to devise a comprehensive response to the new technological environment. The export of oil from Alaska to the continental United States provided a substitute for the lost Texas trade; otherwise, coastwise shipping continued to decline and virtually disappeared among U.S. continental ports.

As the U.S.-flag fleet in the foreign trade dwindled, the U.S. Navy increasingly took on the principal role in keeping the private shipyards alive. In 1967, the navy assigned all future ship orders to private builders and kept its own yards as a reserve in case of emergency. The end in 1981 of the subsidy for building in private U.S. yards left them at the mercy of naval construction. The program to build a 600-ship navy, which started in 1981, did bring a sorely needed respite to the beleaguered shipbuilding industry. But the 600-ship program was the last gasp of the cold war; as it and the 1980s faded away, U.S. shipyards were left with little work to do. Of 23 major shipyards in 1985, almost a dozen had folded or were in BANKRUPTCY by 1990. A major loss was the bankruptcy of Todd Shipyards, with installations in three cities. Repeatedly referred to as a dying industry, shipbuilding in the United States, one of the oldest manufacturing industries, faces bleak prospects in the 21st century.

See also KAISER, HENRY J.

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René De La Pedraja

shipping industry The transportation of goods and passengers aboard oceangoing ships has been fundamental to the economic expansion of the United States. Two stages constitute the history of shipping in the United States.

The merchants owned and controlled the cargo and the ships during the first 200 years of U.S. shipping history. In the colonial period the modest economy of the agrarian society required little specialization. Thus, shipping formed an intrinsic part of mercantile activities. Using small ships, merchants handled the trade of the many towns along the East Coast. The merchants owned the merchandise they sold at each town and bought a town's commodities for shipment either to other colonial cities or to Britain.

No large investment was necessary because of the low price of U.S.-built ships. The abundance

of seamen at low wages and the relatively simple technology of the small wooden sailing vessels made entry into shipping easy for merchants. Residents in the ports often bought "shares" in a merchant's ship and thus spread the risks. As the colonial economy grew, British merchants came to provide a major part of the capital invested in ships.

Independence from Britain did not change the fundamental structure of U.S. shipping. Britain excluded U.S. shipping from all its possessions, but alternate opportunities, such as the formerly forbidden Asia trade, readily appeared. The long period of European warfare from 1789 to 1815, although disruptive, did provide ample profits for U.S. shipping. After 1815, the construction of roads and canals began to expand the hinterland of each major city on the U.S. coast, and the growth of the economy increased the volume of cargo and the number of ships. The moment was rapidly approaching when entrepreneurs could specialize in carrying the cargo of merchants and producers.

The westward territorial expansion of the United States and the opening of new regions to agricultural settlement vastly increased the cargo pouring into the growing cities of New York, Boston, Philadelphia, and Baltimore. No longer did the economy of the United States hug the shore line. The construction of the first railroad lines provided feeders to bring even more goods into the port cities. Many owners of merchandise preferred to export abroad themselves, without having to go through merchant middlemen. Shipowners had traditionally been eager to carry the goods of other persons, but only if extra space was available on the ship. Merchants who dispatched cargo irregularly or in small lots did not want to make the large outlay of buying and maintaining a ship. The demand was rising for a scheduled service offering to carry anyone's goods across the sea.

The Reciprocity Treaty of 1815 opened British ports to U.S. ships without discrimination and made possible the establishment of the Black Ball Line in 1818. The Black Ball Line, the first successful packet service in the North Atlantic, emphasized dependable departure dates for its sailing vessels from New York City. Eastbound, the voyage to Liverpool averaged 24 days depending on weather and wind. On the westbound trip, the adverse winds made for a longer voyage on the average of 38 days, with a range from 17 to 55 days. In a break with the centuriesold tradition of carrying mainly the owner's cargo, the Black Ball Line existed primarily to carry the merchandise of others. Merchants or producers now knew that at New York City (and later at other ports) ships were waiting and willing to take merchandise to Europe. In addition, as ships became more plentiful, owners of large amounts of cargo now began to enjoy the new option of renting ("chartering") a ship ("tramp vessel") for a single voyage or for a longer period.

As the shipping function separated itself from trading after 1830, the owners of cargo ("shippers") could now concentrate on trading or producing while leaving transportation to specialists. Charging a fee to carry cargo or passengers became the fundamental activity of world shipping. The success of the Black Ball Line encouraged imitators, starting with the Red Star Line in 1822 and many foreign competitors afterward. To lure passengers and cargo, the new shipping companies offered new routes, increased the frequency of departures, and sought faster crossing times. The craze for speed culminated in the deployment of the fast clipper ships, whose small carrying capacity limited their profitability to periods of acute demand, such as during the California Gold Rush of 1848-49.

The years from 1830 to 1857 marked the golden age of U.S. shipping, which reached a dominance, prestige, and profitability never again seen. In spite of the improvements to the wooden sailing ship, the variability of the winds still prevented the on-schedule delivery of merchandise to both sides of the North Atlantic. Shipping awaited the appearance of a new technology to achieve a superior level of performance.

The introduction of the steam engine and steel started a new stage in world history but also had the unfortunate effect of crippling U.S. shipping. U.S. shipyards continued to experiment with ingenious designs for wood and sail vessels, whose production continued into the early years of the 20th century. Long before then, shipping supremacy had passed from the United States to Britain, whose corporations dominated the world's sea lanes for almost a hundred years. The large capital requirements of steel steamships gave the British a decided advantage over U.S. competitors who struggled to find investors. The British government provided steamship subsidies for decades, while the U.S. government only haltingly and sparingly offered subsidies. The price of ships, until then the greatest comparative advantage of U.S. shipping, became in the age of steel and steam the most serious disadvantage. The price of steel steamships was between 25 to 50 percent higher in the United States than in Britain, and to try to overcome this hurdle, shipping companies constantly pleaded for permission to register foreign-built ships under the U.S. flag. The struggle for "free ships," as they were known, raged until 1914, when, under the pressure of war in Europe, the U.S. Congress temporarily agreed as an emergency measure to register foreign ships in the United States.

As the struggle for "free ships" dragged on after the Civil War, U.S. shipowners quietly shifted to foreign flags, usually as the final step toward abandoning ocean transportation. As the ships built during the Civil War became obsolete, U.S. shipowners invested their capital and their talents into profitable ventures on land. Entire routes, such as those in the North Atlantic, became the preserves of European (mostly British) steamship companies. In contrast to the marked decline of the fleet in the foreign trade, coastwise shipping continued its steady rise in importance. In 1820, the tonnage in the coastwise fleet for the first time exceeded that in foreign trade and continued to rise afterward. Without any foreign competition, the wooden sailing vessels in the coastwise trade gradually gave way to modern steamships built in domestic shipyards. As coastwise service extended to the South, several companies scheduled calls in Latin American ports, particularly in Cuba and in Mexico, as part of their regular service.

The only truly successful U.S.-flag steamship company prior to 1914 was the Pacific Mail Steamship Company. Established in 1848 to unite California with the East Coast, Pacific Mail began a transpacific service in 1867. The slower pace of technological change in the vast Pacific Ocean gave the company time to adopt the new steel steamers. By a reliance on Chinese crews the company helped offset the higher price of U.S.built ships. Extremely diligent management exploited every opportunity to expand, and Pacific Mail's successful career continued after 1893, when the Southern Pacific Railroad bought the company. In contrast to the often hectic career of Pacific Mail, "proprietary companies" (those that owned the cargo and the ships) relied on dependable foreign-flag ships (usually British) for their transportation needs. The proprietary companies were the linear descendants of the merchants who had owned the cargo aboard their wooden sailing ships. For complex and changing reasons, proprietary companies, such as petroleum companies or the UNITED FRUIT COMPANY, have preferred to own and to operate fleets of ships or tankers for their own cargo.

The critical shipping shortage at the outbreak of World War I found the United States without an adequate fleet. Allowing foreign ships to register under the U.S. flag in 1914 provided inadequate relief, and in 1916 Congress created the U.S. Shipping Board to remedy the shortage of vessels. After U.S. entry into the war in April 1917, shipping fell under full governmental control, and the Shipping Board gave all shipowners orders on where to employ their vessels. This total governmental control ended when peace returned at the end of 1918, but the shipbuilding program of the Shipping Board continued for several more years. The resulting glut of ships gave the Shipping Board the opportunity to assign the surplus ships on almost giveaway terms to new operators. Many new shipping companies, such as Lykes Brothers and United States Lines, appeared on routes previously not served by U.S.-flag vessels.

The wartime construction program had given U.S. shipping the boost indispensable for competition in the world routes. But by the late 1930s, as the surplus ships became old, U.S. shipping again was in decline. The outbreak of World War II in 1939 started another shipping revival. After U.S. entry into the war in 1941, the government created the War Shipping Administration to control all U.S. ships, in a manner similar to what the Shipping Board had done in World War I. Another crash shipbuilding program, just as in World War I, had a decisive impact on U.S. shipping. So many were the surplus ships after 1945 that the U.S. government sold them not only to U.S. firms but also to foreign countries, thus partially offsetting the benefits to U.S. shipping companies. As foreign competition from low-wage operators became intense in the 1950s, the Maritime Administration teamed up with individual companies to design and to finance the Mariner class of merchant vessels. The Mariners, with their high speed, were a major commercial success and temporarily halted the decline of U.S. shipping companies, already completely dependent on operating subsidies to remain in business.

The effective partnership between government and the private sector for the Mariners was not repeated in the much more crucial transition to containers and diesel engines. The spread of diesel engines had begun worldwide in the 1920s, but the United States had resisted that tendency. Because of their smaller size and lower operating costs, the diesels were superior to steam engines in merchant ships. The appearance of containerships in the early 1960s made obsolete almost all existing merchant ships, but not all U.S. shipping companies grasped this obvious truth. The subsidies were no longer enough to offset the blunder of a tardy and partial transition to containerships. The long delay in the adoption of diesels also worsened the financial weakness of U.S. shipping companies. The high capital investment in new containerships required large cargo volumes to make them profitable and made consolidation of the smaller firms inevitable. What did not have to be inevitable was the almost complete disappearance of U.S. shipping companies during the last quarter of the 20th century, sometimes in sudden bankruptcies, such as that of United States Lines in 1986. Military cargo, traditionally limited to U.S.-flag shipping, allowed some small companies to eke out a survival.

Coastwise trade remained the backbone of U.S.-flag operators, but competition from RAIL-ROADS, trucks, and airplanes largely eliminated the coastwise trade in the continental United States. The coastwise trade remained important only on the routes for Alaska and for the island portions of the United States, such as Hawaii and Puerto Rico. U.S. shipping, which once played such a fundamental role in the expansion of the United States, was no longer a vital force in the economy and faced very poor prospects at the start of the 21st century.



Steamship loading hides in New Orleans, Louisiana, 1903 (LIBRARY OF CONGRESS)

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René De La Pedraja

short selling See STOCK MARKETS.

Siebert, Muriel (1932–) financial executive Muriel Siebert was born in Cleveland, Ohio, in 1932, the daughter of a dentist. She attended Case Western Reserve University to study accounting but dropped out after her father died from cancer in 1954. Despite her lack of a degree, she packed all her belongings into an old car, relocated to New York City, and began looking for work as a securities analyst. At length she was employed by the firm Bache and Company and encountered numerous instances of sexism and anti-Semitism on the job. She especially resented that fact that male coworkers often received 50 to 100 percent more for the same work she performed. Determined to succeed, Siebert left Bache in 1957 and spent the next decade working efficiently at a number of Wall Street firms. Despite obvious talent, she remained banned from investment clubs due to gender discrimination, although in 1960 she became a partner in a brokerage firm. By 1967 Siebert was successful as an analyst and sought to do what no woman had ever done previously-buy a seat on the NEW YORK STOCK EXCHANGE. This all-male institution vigorously resisted the move, and several months lapsed before Siebert found an institution that would

loan her the \$445,000 for her seat. Nonetheless, on December 28, 1967, she became Wall Street's first female floor broker, breaking a male monopoly that had lasted since 1792. Two years later, she followed up this success by establishing her own brokerage, Muriel Siebert and Company, which remains the only female-owned and operated brokerage firm on Wall Street. Despite ongoing discrimination from colleagues and businesses, Siebert performed as efficiently as possible and accumulated a small fortune. In May 1975, she was among the first companies to advertise discount stocks to the public-an act that outraged many contemporaries at the time. Since then stock advertisements and discount commissions have become standard fare.

Siebert's conspicuous success prompted New York governor Hugh Carey to appoint her to the post of state banking commissioner in 1979another first for a woman. More surprisingly, Carey, a Democrat, appointed Siebert, a lifelong Republican, to the task. At that time many banks across the country were facing insolvency, and Siebert imposed her usual no-nonsense approach to fiscal and accounting discipline on a bewildering array of banks, credit unions, and savings and loan associations. Amazingly, after five years not a single bank failed-a bravura performance considering how perilous the New York monetary system had become. In 1982 Siebert sought to expand her celebrity by entering politics, and she ran for the U.S. Senate from New York, finishing a strong second in the primary. Afterward she took her firm out of a trust fund and resumed the chair of Muriel Siebert and Company.

The decade of the 1980s proved tumultuous, but Siebert's good performance enabled her to stave off several buyout offers, and by 1985, she proved solvent enough to acquire two of the firms in question. By that time she had also become closely identified with numerous civic and philanthropic concerns, especially the National Woman's Forum for successful business women. In 1990, she founded the Siebert Philanthropic Foundation, which uses her own assets to give to charitable purposes. And, mindful of her own experience in the business world, Siebert also established the Women's Entrepreneurial Foundation to assist female-owned small businesses. Muriel Siebert and Company continued as one of Wall Street's premier brokerage firms, so in 1996 she took the company public as the Siebert Financial Corporation with additional offices in Los Angeles, California, and Boca Raton, Florida. Politics remain an area of interest, so she maintains and funds the WISH List, intending to support Republican women candidates nationwide. She remains highly sought after as a speaker at such prestigious business schools as Harvard and New York University and is the recipient of numerous awards and citations from around the world. Siebert, however, shrugs off her celebrity status and contentedly plies the treacherous waters of the stock market well past her retirement age. Her reputation as a legendary and successful maverick of Wall Street is secure.

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John C. Fredriksen

Singer Sewing Co. Founded by I. M. Singer (1811–75), the company became the largest and best-known manufacturer of sewing machines in the world. Borrowing \$40, Singer founded his company in 1851, selling an improved version of a machine that had been used for stitching boots. A previous machine developed by Orson C.

Phelps of Boston was already being manufactured under license from John A. Lerow. The machine was not very practical, operating on a circular motion. After examining the machine, Singer decided that the job could be done better by a needle that moved up and down in a more efficient manner.

In order to offset the relatively high purchase price of \$75, Singer introduced the first installment payment plan. The company was incorporated as the Singer Manufacturing Company in 1853 in New York City. The machines became an immediate hit and became even more popular after the 1855 Paris World's Fair, where the machine won a first prize. When the Civil War began, Singer was producing more than 3,000 units per year. By 1875, when he died, output had reached 250,000 units per year and five years later topped 500,000.

His successor, Inslee Hopper, opened a manufacturing facility in Scotland in 1867 to meet increasing worldwide demand, making Singer one of the first multinational companies. The company had already opened offices in Scotland and Germany. In 1880, an Edison-developed electric motor was added to the machines, making them motor driven, although it took nine more years to develop practically. By 1903, sales exceeded a million units annually.

In 1908, the company opened the Singer Building on Broadway in New York. At 47 stories, it was one of the tallest SKYSCRAPERS in the city.

In 1958, the company reached \$500 million in annual sales. By 1970, annual sales reached \$2 billion, and the company was at the height of its power. By the late 1970s, however, the firm was losing money as demographics changed and sewing at home became less popular. Beginning in 1975, the company, under new management, began an aggressive diversification into the aerospace business, manufacturing flight simulators and defense equipment, and the Singer Sewing Machine Co. was spun off as a separate entity. Other products produced included appliances and television sets that were sold worldwide. Despite its financial setbacks, the company still held about 30 percent of the market for sewing machines worldwide.

Another series of financial setbacks led the company to file for Chapter 11 bankruptcy protection in 2000, and the NYSE suspended trading of its stock. The post-bankruptcy Singer has reduced operations to half its former size. The company remains the best-known and largest maker of sewing machines in the world, with exposure in more than 100 countries.

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skyscrapers A uniquely American style of architecture seeking to expand a building's capacities by adding height rather than breadth. Skyscrapers abandoned the European style of office building in favor of a building that reached upward and was built around a steel frame. They began being erected in the late 19th century in Chicago and New York and depended for practicality upon the invention of the safety elevator by Elisha Graves Otis.

Otis's first electric elevator was introduced in 1889, supplanting the steam-operated elevator introduced in the late 1850s. It coincided with the opening of the 160-foot-high Tower Building, the first New York skyscraper, at 50 Broadway. The early tall buildings used a steel frame designed by Andrew CARNEGIE as their basic component. Three years earlier, a nine-story building, the Home Insurance Building, had been opened in Chicago. Many more tall buildings would be built in New York, which became the home of the skyscraper, in part due to the firm bedrock that supports Manhattan.

Other skyscrapers of various design were opened in succeeding years. The Flatiron Build-



Empire State Building at night, 1937 (LIBRARY OF CONGRESS)

ing (285 feet) was opened in 1902, the Singer Building in 1908 (612 feet), the Metropolitan Life Building (700 feet) in 1909, and the Woolworth Building (792 feet) in 1913. The Woolworth Building held the distinction of being the world's tallest building until the 1920s, when it was surpassed by the Bank of Manhattan Building on Wall Street (927 feet). When the Chrysler Building was built in midtown Manhattan a few years later, it was short of the Bank of Manhattan by two feet, until a steel spire was added to the Chrysler, allowing it to claim the distinction as the tallest.

The most famous American skyscraper, the Empire State Building, was built in 1930 and 1931 and opened on May 1, 1931. Its developers were Al Smith, the former governor of New York, and John J. RASKOB, a former DuPont and General Motors executive. The building, at 1,250 feet, was built in 15 to 16 months by approximately 3,000 workers. When it opened, the 1920s boom was over, and the Great Depression had begun. For the first 10 years of its life, the building was referred to as the Empty State Building because of a lack of tenants. During World War II, the RECONSTRUCTION FINANCE CORP. took an interest in renting part of it, underlining how slowly occupancy rates rose during its first 15 years.

The Empire State was eventually surpassed by the twin towers of the World Trade Center in lower Manhattan in the 1970s. They, in turn, were surpassed by the Sears Tower in Chicago as the country's tallest building at 1,454 feet. The Sears Tower retains that distinction.

Skyscrapers are an original American contribution to architecture and have been built as a testament to the strength and unlimited reach of business. In all cases, they have been sponsored by corporations, with the exception of the World Trade Center, which was built and operated by the Port Authority of New York and New Jersey and was originally conceived to revive New York's position as the center of international trade. The original skyscrapers in particular were built by industrialists to showcase the success of their companies

See also Singer Sewing Co.; Woolworth, Frank Winfield.

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slavery Slavery is an economic phenomenon. Throughout history, slavery has existed where it

has been economically worthwhile to those in power. The principal modern example is the U.S. South. Nearly 4 million slaves worth close to \$4 billion lived there just before the Civil War. Masters enjoyed rates of return on slaves comparable to those on other assets; sea captains, cotton consumers, slave traders, banks and insurance companies, and industrial enterprises benefited from slavery as well. In fact, U.S. slavery was one of the most sophisticated and encompassing economic institutions of the antebellum era.

Not long after Columbus sailed for the New World, French and Spanish explorers brought personal slaves with them on various expeditions. But a far greater percentage of slaves arrived in chains in crowded, sweltering cargo holds, with the first arriving in Virginia in 1619 aboard a Dutch vessel.

Commanders of slave ships and their financial backers made fortunes from the Atlantic trade. Transporting slaves was a major industry in the 17th and 18th centuries, with the Royal African Company a principal player for five decades. David Galenson's study of the company uncovered a picture of closely connected competitive markets in Africa and America that responded quickly to economic incentives. Despite its size, the company was hardly a monopoly. Hordes of small ship captains found the trade worthwhile, with prospective rates of return of 9 to 10 percent, comparable to returns on alternative ventures.

Other interests also profited. European banks and merchant houses enjoyed substantial profits as they helped develop the New World plantation system through complicated credit and insurance mechanisms. Well-placed African dealers also benefited. In sickening cycles, early Sudanic tribes sold slaves for horses, then used horses to obtain more slaves. Later tribes similarly traded slaves for guns, then used guns to hunt more captives. Early New England industry—cotton textiles, shipbuilding, and the like—had strong connections to the slave trade as well. Among the beneficiaries were the Brown, Cabot, and Faneuil families. From 1500 to 1900, approximately 12 million Africans were forced westward, with about 10 million completing the journey across the Atlantic. Yet very few ended up in the British colonies and the young American republic. By 1808, when the transatlantic slave trade to the United States officially ended, only about 6 percent of African slaves landing in the New World had come to North America.

Colonial slavery started slowly, particularly in the North. By 1775, fewer than 10 percent of the half-million slaves in the thirteen colonies resided in the North, working mostly in agriculture. Scholars have speculated as to why, without coming to a definite conclusion. Some surmise that indentured servants were fundamentally better suited to the northern climate, crops, and tasks at hand; some claim that antislavery sentiment provides the explanation.

Throughout colonial and antebellum history, slaves lived primarily in the South. They constituted less than a 10th of the South's population in 1680 but grew to a third by 1790. After the American Revolution, the southern slave population exploded, reaching about 1.1 million in 1810 and more than 3.9 million in 1860. Despite their numbers, slaves typically made up a minority of the local population. Most southerners owned no slaves, and most slaves lived in small groups rather than on large plantations.

How did the U.S. slave population increase nearly fourfold between 1810 and 1860, given the demise of the transatlantic trade? They experienced an exceptional rate of natural increase due to relatively high birth rates and relatively low mortality rates. Unlike elsewhere in the New World, the South did not require a constant infusion of immigrants to keep its slave population intact. In fact, by 1825, 36 percent of the slaves in the Western Hemisphere lived in the United States.

Market prices for slaves reflected their substantial economic value. Price evidence comes from censuses, probate records, plantation and slave-trader accounts, and proceedings of slave auctions. These data reveal that prime field hands sold for \$400 to 600 in 1800, \$1,300 to \$1,500 in 1850, and up to \$3,000 just before Fort Sumter fell. Even adjusting for inflation, slave prices rose significantly in the six decades before secession. Slavery remained a thriving business on the eve of the Civil War: By one estimate, average slave prices by 1890 would have increased more than 50 percent over their 1860 levels. No wonder the South rose in armed resistance to protect its enormous investment.

Slave markets existed across the antebellum South. Private auctions, estate sales, and professional traders facilitated easy exchange. Established dealers such as Franklin and Armfield in Virginia, Woolfolk, Saunders, and Overly in Maryland, and Nathan Bedford Forrest in Tennessee prospered alongside itinerant traders who operated in a few counties, buying slaves for cash from their owners, then moving them overland in shackles to the lower South. More than a million slaves were taken across state lines between 1790 and 1860, with many more moving within states. Some of these slaves went with their owners; some were sold to new owners. In his monumental study, Michael Tadman found that slaves who lived in the upper South faced a significant chance of being sold for profit. Along with slave sale markets came farseeing methods for coping with risk, such as warranties of title, fitness, and merchantability.

The prices paid for slaves reflected two economic factors: the characteristics of the slave and the conditions of the market. Important individual features included age, sex, childbearing capacity for females, physical condition, temperament, and skill level. In addition, the supply of slaves, the demand for products produced by slaves, and seasonal factors helped determine market conditions and therefore prices.

Prices followed a life-cycle pattern. Infant slaves sold for a positive price because masters expected them to live long enough to make the initial costs of raising them worthwhile. Prices rose through puberty as productivity and experience increased. In 19th-century New Orleans, for example, prices peaked at about age 22 for females and age 25 for males. Girls cost more than boys up to their mid-teens. The genders then switched places in terms of value. After the peak age, prices declined slowly for a time, then fell off rapidly as the aging process caused productivity to fall. Compared to full-grown men, women were worth 80 to 90 percent as much. One characteristic in particular set some females apart—their ability to bear children. Fertile females commanded a premium. The motherchild link also proved important for pricing in a different way: People sometimes paid more for intact families.

Skills, physical traits, mental capabilities, and other qualities also helped determine a slave's price. Skilled workers sold for premiums of 40 to 55 percent, whereas crippled and chronically ill slaves sold for deep discounts. Slaves who proved troublesome—runaways, thieves, layabouts, drunks, slow learners, and the like also sold for lower prices. Taller slaves cost more, perhaps because height acted as a proxy for healthiness. In New Orleans, light-skinned females (who were relatively more popular as concubines) sold for a 5 percent premium.

Prices fluctuated with market conditions as well as with individual characteristics. U.S. slave prices fell around 1800 as the Haitian Revolution sparked the movement of slaves into the southern states. Less than a decade later, prices climbed when the international slave trade was banned, cutting off legal external supplies. Interestingly, many southern slaveholders supported closing the Atlantic trade. The resulting reduction in supply drove up prices of slaves already living in the United States and, hence, their masters' wealth. U.S. slaves had high enough fertility rates and low enough mortality rates to reproduce themselves, so southerners did not worry about having too few slaves to go around.

Demand helped determine prices as well. The demand for slaves derived in part from the demand for commodities and services that slaves provided. Changes in slave occupations and variability in prices for slave-produced goods therefore created movements in slave prices. For instance, as slaves replaced increasingly expensive indentured servants in the New World, slave prices went up. In the period 1748–75, slave prices in British America rose nearly 30 percent. As cotton prices fell in the 1840s, southern slave prices also fell. But as the demand for cotton and tobacco grew after 1850, slave prices increased as well.

Differences in demand across regions led to transitional regional price differences, which in turn meant large movements of slaves. Yet because planters experienced greater stability among their workforce when entire plantations moved, 84 percent of slaves were taken to the lower South in this way rather than being sold piecemeal.

Demand sometimes had to do with the time of year a sale took place. For example, slave prices in the New Orleans market were 10 to 20 percent higher in January than in September. September was a busy time of year for plantation owners, and the opportunity cost of their time was relatively high. Consequently, prices had to be relatively low for them to be willing to travel to New Orleans during harvest time.

One additional demand factor loomed large in determining slave prices—the expectation of continued legal slavery. As the Civil War progressed, prices dropped dramatically because people could not be sure that slavery would survive. In New Orleans, prime male slaves sold on average for \$1,381 in 1861 and for \$1,116 in 1862. Burgeoning inflation meant that real prices fell considerably more. By war's end, slaves sold for a small fraction of their 1860 price.

That slavery was profitable seems almost obvious. Yet scholars have argued furiously about this matter. On one side stand antebellum writers such as Hinton Rowan Helper and Frederick Law Olmstead, many abolitionists, early researchers such as Ulrich Phillips and Charles Ramsdell, and contemporary scholars such as Eugene Genovese, who speculated that American slavery was unprofitable, inefficient, and incompatible with urban life. On the other side are those who contend that slavery was profitable and efficient relative to free labor and that slavery suited cities as well as farms. These researchers stress the similarity between slave markets and markets for other sorts of capital.

The battle has largely been won by the latter group. They have shown that much like other businessmen, slaveowners responded to market—signals adjusting crop mixes, reallocating slaves to more profitable tasks, hiring out idle slaves, and selling slaves for profit. One wellknown instance shows that contemporaneous free labor thought urban slavery worked far too well: Employees of the Tredegar Iron Works in Richmond, Virginia, went out on their first strike in 1847 to protest the use of slave labor there.

Carrying the banner of the "slavery was profitable" camp is Nobel laureate Robert Fogel. Perhaps the most controversial book ever written about American slavery is his Time on the Cross, coauthored by Stanley Engerman. These men were among the first to use modern statistical methods, high-speed computers, and large datasets to answer a series of empirical questions about the economics of slavery. Building on earlier work by Alfred Conrad and John Meyer, Fogel and Engerman used data from probate and plantation records, invoices from the New Orleans slave-sale market, coastwise manifests for shipped slaves, and manuscript census schedules to find profit levels and rates of return. Despite criticism (notably a series of articles collected as Reckoning with Slavery), Time on the Cross and Fogel's subsequent Without Consent or Contract have solidified the economic view of slavery. Even Eugene Genovese, long an ardent proponent of the belief that southern planters held slaves for prestige value, finally acknowledged that slavery probably was a profitable enterprise.

Among Fogel and Engerman's findings are these: Antebellum southern farms were 35 per-

cent more efficient overall than northern ones. Moreover, slavery generated a rate of economic growth in the U.S. South comparable to that of many European countries. Fogel and Engerman also discovered that because slaves constituted a considerable portion of individual wealth, masters fed and treated their slaves reasonably well. Although some evidence indicates that infant slaves suffered much worse conditions than their freeborn counterparts, juvenile and adult slaves lived in conditions similar to—and sometimes better than—those enjoyed by many free laborers of the same period.

One potent piece of evidence supporting the notion that slavery provided pecuniary benefits is this: Slavery replaced other labor when it became relatively cheaper. In the colonies, for example, indentured servitude was common. As the demand for skilled servants (and therefore their wages) rose in England, the cost of indentured servants went up in the colonies. At the same time, second-generation slaves became more productive than their forebears because they spoke English and did not have to adjust to life in a strange new world. Consequently, the balance of labor shifted away from indentured servitude and toward slavery. Georgia offers a compelling example. Its original 1732 charter prohibited ownership of black slaves. Yet by 1750 the trustees of the new colony had to relax the prohibition because Georgia growers simply could not compete with producers elsewhere who used lower-cost slave labor.

The value of slaves arose in part from the value of labor generally in the antebellum United States. Scarce factors of production will command economic rent, and labor was by far the scarcest available input in America. But a large part of the reward to owning and working slaves resulted from innovative labor practices. Certainly, the use of the "gang" system in antebellum agriculture contributed to profits. In the gang system, groups of slaves performed synchronized tasks under the watchful overseers's eye, much like parts of a single machine. Masters found that treating people like machinery paid off handsomely.

Slaveowners experimented with various other methods to increase productivity. For example, they developed an elaborate scheme of "hand ratings" in order to improve the match between the slave worker and the job. Hand ratings categorized slaves by age and sex and rated their productivity relative to that of a prime male field hand. Masters also capitalized on the native intelligence of slaves by using them as agents to receive goods, keep books, and the like.

Masters offered positive incentives to make slaves work more efficiently. Slaves-in contrast to free workers-often had Sundays off. Slaves could sometimes earn bonuses in cash or in goods, or quit early if they finished tasks quickly. Some masters allowed slaves to keep part of the harvest or to work their own small plots. In places, slaves could sell their own crops. To prevent stealing, however, many masters limited the products that slaves could raise and sell, confining them to corn or brown cotton, for example. In antebellum Louisiana, slaves even had under their control a sum of money called a *peculium*. This served as a sort of working capital, enabling slaves to establish thriving businesses that often benefited their masters as well. Yet these practices may have helped lead to the downfall of slavery, for they gave slaves a taste of freedom that left them longing for more.

Masters profited from reproduction as well as production. Southern planters encouraged slaves to have large families because U.S. slaves lived long enough to generate more revenue than cost over their lifetimes. But researchers have found little evidence of slave breeding; instead, masters encouraged slaves to live in nuclear or extended families for stability. Lest anyone think sentimentality triumphed on the southern plantation, let them recall the willingness of most masters to sell if the bottom line was big enough.

One element contributing to profitability was the slave's African heritage. Africans, more than indigenous Americans, were accustomed to the discipline of agricultural practices and knew metalworking. Some scholars surmise that Africans, in contrast to Europeans, could better withstand tropical diseases and, unlike Native Americans, also had some exposure to the European disease pool.

Perhaps the most distinctive feature of African slaves, however, was their skin color. Because they looked different from their masters, their movements were easy to monitor. Denying slaves education, property ownership, contractual rights, and other things enjoyed by those in power was simple: One needed only to look at people to ascertain their likely status. Using color was a low-cost way of distinguishing slaves from free persons. For this reason, the colonial practices that freed slaves who converted to Christianity quickly faded away. Deciphering true religious beliefs was far more difficult than establishing skin color.

Among those who profited from slavery were men who worked as slave catchers and received



A 1780s broadside advertising a slave auction (LIBRARY OF CONGRESS)

fees for returning escaped slaves to their masters. However, because skin color was the principal identifying mark, free blacks also faced the horrifying possibility of capture and sale.

Slavery never generated superprofits, because people always had the option of putting their money elsewhere. Nevertheless, investment in slaves offered a rate of return-about 10 percent-that was comparable to returns on other assets. Slaveowners, slave sellers, and slave catchers were not the only ones to reap rewards, however. So did cotton consumers, who enjoyed low prices, and Northern entrepreneurs who helped finance plantation operations. As antebellum editor James de Bow put it, without slavery "ships would rot at [the New York] docks; grass would grow in Wall Street and Broadway, and the glory of New York . . . would be numbered with the things of the past." Even today evidence is being found in the archives of present financial firms that had dealings in slavery. In 2005, Bank One, now a division of J. P. Morgan Chase, acknowledged that two of its predecessor banks-Citizens Bank and Canal Bank in Louisiana-accepted approximately 13,000 enslaved individuals as collateral on loans and took ownership of approximately 1,250 of them when the plantation owners defaulted on the loans.

So slavery was profitable. Was it an efficient way of organizing the workforce? On this question, considerable controversy remains. Slavery might well have profited masters, but only because they exploited their chattel. What is more, slavery could have locked people into a method of production and way of life that might later have proven burdensome.

Fogel and Engerman claimed that slaves kept about 90 percent of what they produced. Because these scholars also found that agricultural slavery produced relatively more output for a given set of inputs, they argued that slaves actually may have shared in the overall benefits resulting from the gang system. Other scholars contend that slaves in fact kept less than half of what they produced and that slavery, while profitable, certainly was not efficient.

Gavin Wright called attention as well to the difference between the short run and the long run. He noted that slaves accounted for a very large percentage of most masters' portfolios of assets. Although slavery might have seemed an efficient means of production at a point in time, it tied masters to a certain system of labor, which might not have adapted quickly to changed economic circumstances. This argument has some merit. Although the South's growth rate compared favorably with that of the North in the antebellum period, a considerable portion of wealth was held in the hands of planters. Consequently, commercial and service industries lagged in the South. The region also had far less rail transportation than the North. Yet many plantations used the most advanced technologies of the day, and certain innovative commercial and insurance practices appeared first in transactions involving slaves. Slaveowners led in using new inventions, such as the circular saw. What is more, although the South fell behind the North and Great Britain in its level of manufacturing, it compared favorably to other advanced countries of the time. In sum, no clear consensus emerges as to whether the antebellum South created a standard of living comparable to that of the North or, if it did, whether it could have sustained it.

And what of the standard of life for slaves themselves? In terms of material conditions, diet, and treatment, southern slaves may have fared as well in many ways as the poorest class of free citizens. Yet the root of slavery is coercion. By its very nature, slavery involves involuntary transactions. Slaves are property, whereas free laborers are persons who make choices (at times constrained, of course) about the sort of work they do and the number of hours they work.

The behavior of former slaves after abolition clearly reveals that they cared strongly about the manner of their work and valued their nonwork time more highly than their masters did. Even the most benevolent former masters in the U.S. South found it impossible to entice their former chattels back into gang work, even with large wage premiums. Nor could they persuade women back into the labor force: Many female ex-slaves simply chose to stay at home. In the end, perhaps, slavery is an economic phenomenon only because slave societies fail to account for the incalculable costs borne by the slaves themselves.

See also COTTON INDUSTRY.

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Jenny Wahl

Sloan, Alfred (1875–1966) *auto executive* Born in New Haven, Connecticut, Sloan studied electrical engineering at MIT and graduated in 1895 before going to work for the Hyatt Roller Bearing Co. in Newark, New Jersey. The company had great promise because of the importance of roller bearings to the young automobile industry. In 1897, his father invested \$5,000 in the company, and Sloan became its president. While still a young man, he became acquainted with most of the motor industry's giants, such as Walter CHRYSLER, Henry FORD, and William C. DURANT, since the company, of which he was chief executive, supplied parts to the automobile industry.

He sold the company to Durant during the First World War, and it was reorganized as United Motors with Sloan as president. United was purchased by GENERAL MOTORS in 1918, and Sloan eventually became a vice president of the automobile manufacturer. When GM ran into financial difficulties in 1920 with Durant at the helm of the company, it was reorganized by Pierre DuPont and John RASKOB, both of whom were major investors with the assistance of J. P. Morgan & Company. Pierre DuPont became the new president of the company, and Sloan became operating vice president. Sloan became chief executive of the company in 1923, after he had undertaken a study of the operations of GM under DuPont, which quickly became the model used to change the company. Later, it also became a classic business school case study.

Despite the changes made in the company due to the study, Sloan's major achievements at GM centered around marketing. In his first year as president, he doubled GM's manufacturing capacity. He made the credit arm of GM, the General Motors Acceptance Corp., more prominent in the company as it helped to finance consumer sales by providing consumer credit. He was also responsible for introducing the annual model changes that afterward characterized the industry in order to stimulate more sales. This was in distinction to Ford's Model T, which had not changed substantially since it was first introduced. The strategy worked well during the Depression, especially since GM reported a profit every year during the 1930s, although it did lay off workers in order to do so.

Sloan gave up the presidency of the company in 1937 after a confrontation with the United Auto Workers over working conditions and pay. A sit-down strike lasted for many months before Sloan was persuaded to bargain with the union by Franklin D. Roosevelt. After the incident, he became chairman of the company.

Sloan retired from GM in 1956. In the 1950s, a GM executive boasted with pride that "what's good for GM is good for America," attesting to the success his methods had achieved. Most of the company's success was attributed to Sloan and his management techniques that left the company as the largest producer of automobiles in the country, replacing Ford. It also became the world's largest corporation. His philanthropic interests included the Sloan-Kettering Institute in New York and the Sloan Foundation. He died in 1966.

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Small Business Administration (SBA) The Small Business Administration is a federal agency established in 1953 to help firms that are "independently owned and operated." The SBA's definition of "small" varies by industry but generally includes firms with fewer than 500 employees. Agency services include direct loans and loan guarantees, venture capital, management assistance, disaster loans, and procurement preferences for small and minority-owned enterprises.

The SBA was an orphan of the Reconstruction Finance Corporation (RFC), a large lending agency created during the Great Depression to spur economic recovery. President Dwight D. Eisenhower made elimination of the RFC one of his top priorities. Congress, however, insisted on creating the SBA to retain a source of credit for small business. It also transferred disaster lending from the RFC and procurement operations from the Small Defense Plants Administration, an agency that helped small manufacturers secure contracts during the Korean War. The Small Business Administration was the first peacetime agency to represent all types of small business. Originally authorized for only two years, Congress made the SBA permanent in 1958.

With strong congressional backing, the Small Business Administration grew rapidly. In 1958, Congress authorized SBA loans for Small Business Investment Companies (SBICs), privatelyowned firms that provide venture capital to businesses with growth potential. To leverage its resources and reduce losses associated with direct lending, the SBA increasingly relied on loan guarantees issued to banks making loans to small businesses. In fiscal year 2000, total loan authorizations (including SBICs) hit a record \$15 billion.

The Small Business Administration's nonlending programs are less well known. In 1964, the agency established the Service Corps of Retired Executives (SCORE). Retirees offer free management advice to small business owners who request it. The SBA also has the power to set aside government contracts for small firms, thus excluding larger businesses from competing. Set-aside contracts are negotiated (given to an individual firm) or opened to bidding by small businesses. They make up half of all government contracts awarded to small firms. The SBA's Office of Advocacy (established 1974) defends small business interests before congressional committees and federal regulatory agencies. This advocacy role has grown in response to criticism that government regulation is burdensome to small business.

The SBA was a pioneer in race-based affirmative action. In 1964, SBA administrator Eugene Foley persuaded Congress to include Economic Opportunity Loans (EOLs) in the enabling legislation for the War on Poverty. EOLs were available to low-income entrepreneurs regardless of race, but the urban riots of the mid-1960s transformed the program into a de facto preference for minorities. EOLs failed to lift the disadvantaged out of poverty and left many worse off when their businesses folded. Congress cut the program in the 1980s but revived a similar "micro loan" program after the Rodney King riots of 1992.

President Richard Nixon (1969-74) boosted the SBA's minority enterprise programs by advocating "black capitalism," a term that embraced nonwhite minorities, including African Americans, Hispanics, Native Americans, and Asian Americans. The SBA used its authority under Section 8(a) of the Small Business Act to set aside no-bid contracts for "socially and economically disadvantaged" business owners, a euphemism for minorities. Section 8(a) set-asides were enormously controversial as critics charged "reverse discrimination" against white business owners. Since the 1970s, periodic scandals have erupted as journalists and prosecutors uncovered widespread corruption, particularly the fraudulent use of minority "fronts" by white business owners. Two scandals involving SBA minority enterprise programs-Wedtech and Whitewater-embarrassed the presidential administrations of Ronald Reagan and William Clinton, respectively. Nevertheless, Section 8(a) has withstood court challenges. Moreover, 8(a) group eligibility criteria, first developed in 1980, have become the standard for other agencies' affirmative action programs.

Controversy has followed the SBA since its inception. Critics of the Small Business Administration charged that its definition of "small" departed from the public conception of "Mom and Pop." In 1967, for example, the SBA awarded the American Motors Corporation procurement preferences because it was "small" within its industry. Opponents of affirmative action attacked the agency's racial preferences. Fiscal conservatives—including Ronald Reagan, who tried to abolish the SBA in 1985 and 1986—disputed the need for federal assistance to small business. Nevertheless, the Small Business Administration has historically enjoyed broad bipartisan support in Congress, undoubtedly reflecting public esteem for small business.

See also RECONSTRUCTION FINANCE CORP.

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Jonathan J. Bean

Specie Resumption Act See GOLD STANDARD.

sports industry Professional sports represent a large and growing industry in the United States. Combined ticket sales for all professional sports, including those as diverse as football, golf, and auto racing, exceeded \$15 billion in 2000, with another \$10 billion spent on-site for parking, concessions, and merchandise. Factoring in media revenues, sporting goods, licensed apparel, and advertising, the size of the industry easily exceeds \$50 billion per year.

Furthermore, sports affect society in a way that goes beyond simple economics. Championship matches can attract television audiences in the hundreds of millions. Entire cities or countries rejoice or despair upon the outcome of a single game. In 1969, Honduras and El Salvador even fought a short-lived "Football War," sparked by tensions surrounding soccer matches played between the two countries.

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The sports industry can be broken down between "participatory sports," in which individuals actively take part in athletic contests, and "spectator sports," in which individuals watch athletes compete. As incomes have risen substantially over the past century, so too have both participatory and spectator sports as people have had both higher incomes to pay for these activities and an increased availability of leisure time.

Spectator sports can be further broken down into "professional sports," in which the contestants are paid, and "amateur sports," in which the athletes are unpaid. Amateur sports have a long history. Many ancient sports such as archery, horseback riding, and wrestling can be seen as offshoots of military or fitness training. However, other activities can be seen more directly as entertainment. Organized ball games were played in ancient Egypt, the Greeks created the now famous Olympic Games in 776 B.C., and Native Americans played handball in the Mayan empire and a forerunner of lacrosse in what is now the northeastern portion of the United States. While contestants in these games may have been rewarded by government or religious leaders or the spectators themselves for their athletic performance, the rise of the truly professional athlete did not begin until the late 1800s.

The first sport in the United States to give rise to fully professional athletes was baseball. Following codification of the rules of the sport in 1845 by Alexander Cartwright, baseball grew in popularity both as a spectator and participatory sport. While some players on certain teams received compensation for their play, it was not until 1869 that the Cincinnati Red Stockings formed the first team comprised entirely of professional players. Their success on the field led other teams to adopt their strategy, and by 1871 the National Association was formed with nine teams, including the Boston Braves, the forerunner of today's Atlanta Braves.

The first two decades of professional baseball saw a proliferation of teams and leagues. The

National Association collapsed four years after its formation and was replaced in 1876 by the modern National League (NL). Other upstart leagues included the American Association in 1882, the Union Association in 1884, and the Players League in 1890. Competition drove each of these rival leagues out of business and led to consolidation of the four strongest teams of the American Association into the National League in 1890.

The biggest challenge to the established National League came in 1901 with the formation of the American League (AL), which raided many of the top players from the "senior circuit." Agreements between the leagues to honor the other league's player contracts allowed them to peacefully coexist and led to the creation in 1903 of the World Series, pitting the champions from each league against each other. The popularity of Major League Baseball (MLB), the moniker for the united American and National Leagues, has risen steadily since its formation, as has the level of cooperation between the leagues, with the formation of the All-Star Game in 1933, the first amateur draft in 1965, and ultimately with interleague play in 1997.

While competition from rival leagues has lessened since its early days, at least three rival leagues have served to fundamentally change the nature of professional baseball. In 1914, the Federal League was formed to challenge Major League Baseball and took the novel approach of suing the established leagues for antitrust violations. Sports leagues present an unusual problem to antitrust experts since for a game to take place, the two competitors must agree to play each other, and in order for a sports league to run smoothly, a great deal of cooperation between teams, who are nominally competitors, must occur. The Federal League was driven out of business, but in Federal Base Ball Club of Baltimore, Inc. v. National League of Professional Base Ball Clubs et al., 259 U.S. 200 (1922), the Supreme Court ruled that baseball did not qualify as interstate commerce, as the interstate travel was a "mere incident, not the essential thing." Since the federal antitrust statutes apply only to interstate commerce, as opposed to "purely state affairs," this ruling established the infamous "antitrust exemption" enjoyed by MLB since that time.

Rival leagues also led MLB to expand its national footprint. Prior to 1950, no Major League Baseball teams existed west of St. Louis or south of Washington, D.C., and no team had moved to a new market since the early days of the AL/NL merger. While the 1950s witnessed the first franchise moves since 1903, with the Boston Braves heading to Milwaukee, the Philadelphia Athletics moving to Kansas City, and the Brooklyn Dodgers and New York Giants leaving for the West Coast, the league remained at 16 teams, the same as immediately after the 1901 merger. In 1959, the formation of the Continental League was announced. This eight-team league was designed to expand top-level professional baseball to eight new cities, primarily in the West and South, and to eventually join the AL and NL in Major League Baseball. While the plan for the Continental League never came to fruition, it is generally accepted that MLB expansion in the 1960s from 16 to 24 teams was a direct response to this proposed league. Indeed, by 1971, Major League Baseball had come to five of the eight cities proposed by the Continental League either through expansion or relocation. Additional rounds of expansion in 1977, 1993, and 1998 added two teams each year, bringing the total to 30 teams in the United States and Canada. Unlike the other "big four" sports, franchise relocation has been exceedingly rare in MLB since 1970, due in part to MLB's antitrust exemption, which gave owners the power to prohibit any team's move.

For the first 80 years of professional baseball, African Americans were prohibited from playing in the Major Leagues. Instead, talented black athletes played in the Negro Leagues, which competed concurrently with MLB. In 1947, team owner Branch Rickey signed Negro Leagues star Jackie Robinson to MLB's Brooklyn Dodgers. The success of Robinson and other black players on the field led all MLB teams eventually to integrate; faced with the loss of their best players to MLB, the Negro Leagues largely disappeared by the late 1950s.

Until the 1970s, MLB, like most other sports leagues, operated with a "reserve clause" for its players. The reserve clause bound each player to the team for which he originally signed a contract. The team owned the exclusive rights to the services of that player for the player's entire career unless they released the player or traded the contract to another team. Players wishing for the right to negotiate their own contracts with other teams challenged this system on numerous occasions, culminating with the case of Curt Flood v. Bowie Kuhn, the commissioner of MLB, in 1972. While Flood lost his case when the Supreme Court cited the precedent of the 1922 Federal Base Ball decision, his efforts led MLB to adopt a system of arbitration and FREE AGENCY for veteran players. The tension between owners and players did not end with this change, however, as MLB would witness numerous periods of labor strife, including strikes that resulted in the cancellation of numerous games in 1981 and 1994-95.

Most recently MLB, like many other sports, has entered a period in which media revenues have become increasingly important, and a concerted effort has been made to replace aging stadiums with newer facilities, often financed at significant taxpayer expense and designed to provide more amenities and enhance revenue through the sale of luxury box seats.

Football, like many modern sports, has its origins in ancient games. The game was popular enough in the British Isles by the 14th and 15th centuries that Kings Edward III of England and James I of Scotland passed laws to suppress the sport, as it was a distraction from military exercises. As the rules for football became codified in the early 19th century, two versions of the game emerged: rugby football, named after Rugby School, where its rules were drawn up, in which carrying the ball with the hands was permitted, and association football, also known as soccer from an abbreviation of "association," in which handling the ball was not allowed. The modern game of American football derived from the rugby rules.

The first formally organized game of what would become American football was played between rival universities Princeton and Rutgers in 1869. Collegiate athletes were, and continue to this day to be, amateur players who receive no direct compensation for their performance, although they may receive subsidized tuition for their participation on college teams.

Professional play did not come about until the 1890s, when former Yale All-America guard William (Pudge) Heffelfinger became the first professional football player by accepting \$500 from the Allegheny Athletic Association to play in a game against the Pittsburgh Athletic Club in 1892. Five years later, the Latrobe Athletic Association football team became the first club to field an entirely professional lineup. While many professional clubs formed in the first 30 years of professional football, no significant league arose to organize the sport until the creation of the American Professional Football Association in 1920, which brought together in a single organization 10 existing clubs, including the Chicago Cardinals and Decatur Staleys, today's Arizona Cardinals and Chicago Bears, respectively. In 1922, the league changed its name to the National Football League (NFL).

The first 15 years of the league witnessed a great deal of team turnover. Between 1920 and 1935, more than 50 teams played at least one season in the NFL, 43 of them folding or relocating by the end of that era. The teams with the most solid financial bases realized that their own profitability depended on the financial success of the other teams in the league and therefore adopted what became the strongest system of revenue sharing among the "big four" sports leagues. Home teams shared 40 percent of game day rev-

enue with the visiting team, and all broadcast media revenue was evenly shared among all teams in the league. Initial media revenues were small, following the experimental broadcast of the first televised NFL game in 1939, but this revenue stream grew consistently for the next six decades, reaching a record high in 1998 for an eight-year, \$17.6-billion national television deal.

As in baseball, rival leagues surfaced periodically to challenge the NFL's dominance, which often resulted in MERGERS or acquisitions. In 1950, the NFL absorbed three franchises of the All-America Football Conference, formed four years earlier. Similarly, the American Football Conference, a 1960 start-up, merged with the NFL in 1966, leading to the first Super Bowl in January 1967. A notable exception to this trend was the case of the United States Football League (USFL). For three seasons from 1982 through 1985, the USFL challenged the NFL for players, fans, and media attention and filed an antitrust suit against the established league. In July of 1986, a month before the league was to begin its first fall season, the USFL won its suit against the NFL but was awarded just one dollar in damages. Faced with mounting debts, the league folded soon after. The NFL has faced less labor strife than other leagues but did suffer strikes in both 1982 and 1985.

Basketball was invented in Springfield, Massachusetts, by James Naismith in 1891 as an alternative indoor winter sport to gymnastics. Like football, basketball was widely played at the collegiate level long before professional leagues became well established. Numerous professional leagues were formed in the first half of the 20th century, including the National Basketball League (NBL) and American Basketball League, but none established itself as a major league until the formation of the 11-team Basketball Association of America (BAA) in 1946. This new league merged with the existing NBL in 1949 and changed its name to the National Basketball Association (NBA). As with the NFL, the early years of the league involved significant instability. By 1954, only eight of the original 23 teams from the NBL and BAA remained, and four of those were to relocate over the next six years.

Like other sports, the NBA faced competition from rival leagues, most notably the American Basketball Association (ABA), which was formed in 1967. The ABA competed somewhat successfully with the NBA for nine years, attracting many of the top stars such as Julius "Dr. J." Erving. Ultimately the league folded in 1976, with the NBA agreeing to accept four of the top ABA franchises.

Perhaps more than any other team sport, basketball has derived its popularity from a small handful of elite players. While the NBA steadily expanded from eight teams in 1954 to 22 teams by 1976 and developed popular players such as Bill Russell and Wilt Chamberlain, the league suffered from the combination of a lack of competitive balance (the Boston Celtics won 11 of 13 league titles between 1956 and 1969) and a reputation as a haven for drug-using athletes. The league began its turnaround in 1979 with the signing of Earvin "Magic" Johnson by the Los Angeles Lakers and Larry Bird by the Boston Celtics. Their rivalry throughout the 1980s as well as the later success of six-time NBA champion Michael Jordan lifted the NBA to record financial success.

Hockey, the smallest of the "big four" sports, is unique in that Canadian teams have had a profound influence on the development of the game in North America. Five Canadian-based teams formed the National Hockey League in 1917 as a reorganization of an existing league. American teams were added to the league in the 1920s, and by 1946, the NHL consisted of the Boston Bruins, Chicago Blackhawks, Detroit Red Wings, Montreal Canadians, New York Rangers, and Toronto Maple Leafs, also known as the "Original Six." The number of teams in the league increased through major expansion in 1967 and through a merger with the rival World Hockey Association in 1979. The 1990s and 2000s saw an increasing number of European players, as the league established itself as the world's top hockey league, and the introduction of the NHL into nontraditional markets in the southern and western United States through expansion and the relocation of franchises from Canada and the Northeast.

Other team sports have achieved more limited financial success in North American, including soccer, the most popular team sport in Europe and Latin America. As with other sports, numerous minor professional leagues formed with fleeting success. In 1967, the North American Soccer League (NASL) was formed. The league flourished briefly and signed many well-known international stars, including the Brazilian great, Pele. Overexpansion, a lack of competitive balance, and dearth of home-grown American stars led to the league's demise by 1984. Following their success in hosting the World Cup in 1994, soccer boosters tried again with the formation of Major League Soccer in 1996. Although the league remains in business through 2004, the owners lost in excess of \$250 million in the first eight years of the league. Other upstart sports such as lacrosse, arena football, team volleyball, and indoor soccer have realized only minor financial success.

Professionalism is not limited to team sports. Indeed, boxing rivals baseball as the first sport to give rise to the truly professional athlete, and among the first professional sports icons were boxers, such as "Gentleman" Jim Corbett of the 1890s. Historically, huge numbers of fans attended championship bouts. The 1926 Jack Dempsey-Gene Tunney fight attracted a record 145,000 spectators to Chicago's Soldier Field and was heard by an estimated 50 million by radio, the largest radio audience in history to that point. Despite the popularity of such boxing notables as Joe Louis and Muhammad Ali, the sport's popularity began to wane in the second half of the 20th century due to its violent nature, a reputation for corruption and gambling, and a lack of promotional organization.

Tennis and golf have risen over this time period to replace boxing. While competitive tennis has been played since at least the era of the first Wimbledon championship in 1877, the first professional tennis was played in 1926, when Suzanne Lenglen was paid \$50,000 by a promoter to make a professional exhibition tour of the United States. While professional tours and tennis leagues existed for the next 40 years, the age of professional tennis truly arrived in 1968, when the major tournaments such as Wimbledon and the U.S. Open began to accept professional players.

Similarly, golf had a long history as a recreational sport before giving rise to professional players. Indeed, amateur players such as the American Bobby Jones regularly won major tournaments until the 1930s. The Professional Golfers Association (PGA) was formed in 1916 but represented primarily club pros who worked as instructors rather than tournament players who earned their living through prize winnings. The post-World War II period gave way to the first generation of highly successful professional golfers as average PGA tournament prizes rose to more than \$10,000 for the first time. Not until Arnold Palmer reached the mark in 1968 did any golfer's career prize earnings exceed \$1 million. The increased popularity of the game both as a participatory and a spectator sport, as well as the recent phenomenal attraction of Tiger Woods, has led to huge increases in tournament prizes and player earnings. By the 2000s, top players regularly earned well over \$1 million each season in prize money as well as multiples of this in sponsorship earnings. Tiger Woods's \$100 million contract signed with Nike in 2000 was the largest endorsement contract in any sport in history and put Woods among the world's highest paid athletes.

Professional athletes also compete, although generally to lesser public appeal and monetary reward, in distance running, track and field, bowling, bicycle racing, beach volleyball, figure skating, downhill skiing, and extreme sports among other activities.

With the exception of a few notable performers such as multisport star Babe Didrikson

Zaharias and figure skater Sonja Henie, professional sports has been historically dominated by men. However, due in part to changing societal norms as well as enforcement of Title IX, which mandated equal athletic opportunities for women at publicly funded educational institutions, female participation in interscholastic sports increased 10-fold at the high school level and five fold at the collegiate level between 1971 and 2002. Growth in women's sports participation has led to some strides in promoting professional sports for women athletes. American success in the 1999 Women's World Cup of soccer led to large crowds and significant media attention as well as a short-lived professional women's league. The Women's National Basketball Association (WNBA) has also attracted modest crowds, although the league remains dependent on subsidies from its parent, the NBA. The Ladies Professional Golfers Association (LPGA) also maintains a successful tour, although with prizes that typically average roughly one-quarter those of the men's PGA tour.

Only in tennis have women achieved a measure of parity with men. Beginning in 1973 with the famous "Battle of the Sexes" in which top female player Billie Jean King defeated the aging former Wimbledon champion Bobby Riggs in the most-watched tennis match in history, tournament purses have steadily risen for women so that, at least at the U.S. and Australian Opens, purses are similar for both sides of the bracket.

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Staggers Rail Act (1980) Legislation passed to deregulate the RAILROADS in order to allow them to compete more freely with other forms of freight traffic. Since the creation of the interstate highway system, beginning in the 1950s, truck haulage had become more popular than railway shipping, and the industry began to lose its appeal as a shipper.

Previous regulations from Washington had curtailed the railroads' ability to flexibly price their rates, causing them to lose money and become outdated. As a result, the act centered around establishing reasonable rates and allowing railroad management to be in charge of the roads rather than regulators. The regulations passed against the railroads 50 years earlier were aiding in the decline of the industry, along with the rise of shipping by truck and by airplane.

Specifically, the Staggers Act allowed railroads to price routes and services differently, reflecting the demand for them rather than using a predetermined formula. It also allowed them to enter into confidential contracts with shippers. The power of the INTERSTATE COMMERCE COMMISSION (later succeeded by the Surface Transportation Board) was also expanded to exempt some rail traffic from REGULATION. It also allowed the railroads greater flexibility when closing unused rail lines or selling them.

As a result of the act, railroad freight revenues began to rise after 1980, and the railroads' financial performance improved. Before it was passed, approximately 25 percent of the nation's rail freight was being carried on bankrupt railroads. Equally, train accidents and employee related injuries declined, and capital expenditures increased. Since the Interstate Commerce Commission (ICC) was created in the 19th century, the railroads had complained about its inflexibility when determining rates. The Staggers Act was passed, somewhat belatedly, to remedy the situation. The ICC itself passed out of existence in 1996, succeeded by the Surface Transportation Board.

The Staggers Act is one of the major pieces of deregulatory legislation passed in the last 20

years of the 20th century. It recognized that rail transportation was losing serious ground to trucking as a major method of freight transportation in the United States.

See also DEREGULATION.

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steel industry In the United States, this industry owes its existence to the invention of the Bessemer process. Before Henry Bessemer's discovery in 1858, steel could be made only in small batches. By blowing air through pig iron to manipulate the amount of impurities, steelmakers could make large amounts of this useful metal, chemically related to iron but much stronger. The engineer Alexander Holley perfected practical Bessemer steelmaking when he designed the Edgar Thomson Steel Works in Pittsburgh, Pennsylvania, for Andrew CARNEGIE's firm in 1875. Because of this technological advantage and its championship of other innovations, Carnegie Steel grew to dominate the industry by out-producing and underselling its competitors. The lockout at Carnegie's Homestead mill in 1892 came to symbolize the declining importance of skilled workers during the industrialization of this and many other industries.

Steel was a vital component of American industrialization. Steel rails produced in the 1870s and 1880s made the railroad boom in the trans-Mississippi west possible. Beginning in the 1880s, steelmakers built large structural shapes that formed the skeletons of large city buildings and pieces of bridges. Later, abundant steel made the spread of automobiles possible. Firms in this industry made steel for screws and razors,



The Carnegie Steel Plant, Homestead, Pennsylvania, 1905 (LIBRARY OF CONGRESS)

stretched steel into wire, molded it into nails, and coated it with tin and sold it as roofing material. In short, the presence of the steel industry was a necessary precursor for many other industries.

J. P. Morgan bought out Carnegie in 1901 and merged Carnegie Steel with his own holdings to form the U.S. STEEL CORP., history's first billiondollar company. Although U.S. Steel dominated the market for a wide range of steel products, it did not use its power to drive the competition out of business. Instead, it set its prices annually and let other companies gain market share at its expense by charging lower prices. This is why the corporation survived an antitrust suit against it, settled in 1920. Along these same lines, U.S. Steel's first president, Elbert GARY, formed the American Iron and Steel Institute (AISI) in 1909 to encourage good relations within the industry and prevent destructive competition.

American steelmakers continued to work closely together during the Great Depression under the auspices of the AISI and the National Industrial Recovery Act. In the late 1930s, however, labor relations drove a wedge between U.S. Steel and its largest competitors. Faced with an organizing drive by the Steel Workers Organizing Committee, U.S. Steel recognized the union without a fight in 1937 so that labor strife would not interrupt the company's returning prosperity. Bethlehem Steel, Republic Steel, and other large firms refused to go along until forced to do so by the government during World War II. By the end of the war, an industry that had been almost entirely nonunion since 1892 faced one of the strongest unions in America.

Bad labor relations were one of several reasons for the industry's downfall after World War II. The steel industry faced five nationwide strikes between 1946 and 1959. Each one contributed to a greater wage and benefit bill that made American steel expensive in comparison to foreign competition. The industry was also slow to innovate during the postwar period, holding on to old technologies when firms in other countries had built more-productive mills using recent innovations. Because of foreign competition, American steel companies closed plants and laid off workers by the thousands during the 1970s and 1980s in an effort to remain profitable in a new economic environment. Many of the towns where these plants were located, such as Youngstown, Ohio, and Homestead, Pennsylvania, have yet to fully recover.

Recently a new kind of steel company has emerged in the United States. Minimills are erected by small firms that recycle scrap steel by melting it down in electric furnaces. The resulting product is less expensive than new steel and competitive with foreign steel because these companies tend to ship only to local markets and tend to operate on a nonunion basis. At present, minimills produce approximately one-third of the steel made in the United States and represent the only new capacity in the market since the 1960s.

See also Morgan, John Pierpont; Schwab, Charles M.

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Jonathan Rees

Stetson, John B. (1830–1906) *hat manufacturer* Born in Orange, New Jersey, Stetson had little formal education and suffered from various ailments in his youth. As a result, he traveled West in an attempt to restore his health. While traveling to Pike's Peak, he designed a shelter tent from a design he had learned from his father, a master hat maker, and later designed a hat in the same manner, made of felt. He sold the hat to a local cattle driver in Central City, Colorado, for \$5 and began a tradition of hat making that made him famous.

Returning to the East, he used \$100 to establish himself in Philadelphia in 1865 in rented quarters and slowly began designing a hat based on his original design. He originally called it "Boss of the Plains," intending that it would protect the wearer from the elements. The hat became known as the "ten-gallon" hat, and its popularity quickly outstripped his ability to manufacture them. Building upon his early success, he formed the John B. Stetson Company, and it soon became the largest manufacturer of hats in the world.

His hats were worn by many western personalities, including General George Custer, and soon became identified with the American cowboy and the West. The traveling shows of people such as Buffalo Bill Cody and Annie Oakley also made the hat popular and provided much advertising for the design. Although the company manufactured many other styles, the Stetson hat became the symbol of the company and, like the Colt revolver, made its originator a household name forever linked with the West and frontier life. Although he is most often associated with the ten-gallon hat, Stetson made dozens of styles of hats for various occasions, both formal and informal.

Stetson was a generous contributor throughout his life to Baptist causes. He endowed the DeLand University in Florida, and in 1889, it changed its name to Stetson University. The company continues as a successful hatmaker and today is headquartered in St. Joseph, Missouri. Its hats are bought for both practical and nostalgic reasons since the ten-gallon hat has come to be a long-lasting symbol of the American West.

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Stevens, John (1749–1838) *inventor and engineer* Born in New York City, Stevens graduated from Kings College (today Columbia University) in 1768. His father was a ship owner and merchant who had extensive land holdings in New Jersey. After graduating from college, he spent three years studying law but never practiced. Stevens would later serve as treasurer of New Jersey during the Revolutionary War and collected money for the Continental Army in New Jersey.

Around 1788 he became interested in the development of a steamboat, and he immersed himself in the design of boilers and a steam engine. He was also instrumental in launching the first U.S. patent office, chartered by Congress in 1790. He was one of the first recipients of a patent from the bureau, for a boiler and a steam engine. In 1797, he joined with Robert LIV-INGSTON and Nicholas Roosevelt in developing a steamboat that could provide ferry service in and around New York Harbor. Despite a partnership agreement between them, Livingston took up the ambassadorship to France in 1801 and afterward allied himself with Robert FULTON in operating steamboats around New York Harbor and on the Hudson River. Livingston obtained the exclusive rights to operate a steamboat service in and around New York, a monopoly that eventually was overturned in the case of Gibbons v. Ogden. Robert Fulton began steamboat service to Albany, and the two services omitted Stevens, who instead sent his latest boat to Philadelphia, becoming the world's first ocean-going steamboat. The boat, the *Phoenix*, began a regular service between Trenton and Philadelphia.

Before the War of 1812, Stevens turned his attention to applying the steam engine to railways. He helped persuade the New Jersey state legislature to create a state railway line in 1815, and eight years later he was commissioned by the Pennsylvania legislature to build one for that state. The state did not have ample resources to make the venture successful, however, and Stevens turned to developing an experimental steam locomotive that he ran on his estate in Hoboken, New Jersey. It was the first American attempt at steam locomotion.

Stevens was also ahead of his time by proposing several other engineering innovations that would take some years to reach fruition. He proposed an elevated rail system for New York City, a tunnel under the Hudson River, and armored naval ships to replace those made of wood. One of his sons, Robert Stevens, invented the T-rail, the standard form of railroad track used throughout the world. Another son, Edwin, helped develop ironclad battleships for the navy. When he died in 1838, Edwin's will provided for an engineering institute to be founded in Hoboken bearing the family name, which today is the Stevens Institute of Technology.

See also VANDERBILT, CORNELIUS.

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Stewart, Martha (1941–) *entertainment executive* Martha Kostyra was born in Jersey City, New Jersey, on August 3, 1941, the daughter of a pharmaceutical salesman. At an early age she displayed aptitude for cooking and gardening, traits that carried over into her adult life. Kostyra attended Barnard College in New York City and supported herself by modeling. After graduating in 1963 with a degree in art, she married a Yale law student, Andrew Stewart. Stewart then settled into the lifestyle of a young wife and mother until she grew restless and began looking for moneymaking ventures. In 1968, she became, a stock broker on Wall Street, amassed a small fortune, and bought an old house in Westport, Connecticut. After spending several years renovating it, Stewart-who loved to cook-turned her attention to the gourmet catering business in 1976. She proved phenomenally successful and by 1979 employed a full-time staff with an annual budget of \$1 million. She also began acquiring a national reputation by authoring articles on food in the New York Times and columns in various magazines. The turning point in her career happened in 1980, when she was approached by Crown Publishing to write about recipes and decor. The resulting book, Martha Stewart's Entertaining, was an overnight success that sold 600,000 copies and rendered her a nationally recognized authority on homemaking.

Stewart followed up on her publishing success by releasing a score of equally successful titles on gardening, fashion, and interior decorating. She was also contracted to appear in various television shows and videos. Stewart became such a household icon that in 1987 she signed on as an official spokesperson for the K-Mart chain of retail stores. In this capacity she was allowed to design and market her own line of signature towels, sheets, and other domestic impedimenta under the K-Mart label. However, the toll of too many hours of work resulted in her divorce in 1990. Divested of household concerns, Stewart devoted her considerable energies into establishing her own commercial empire. In 1990, she commenced publishing Martha Stewart Living, a glossy bimonthly magazine, through the auspices of Time-Warner, Inc. Its circulation peaked at 2.1 million subscribers by 1997 and also gave rise to a weekly syndicated television program with an audience of 5 million viewers.

By 1997, Stewart was well positioned to officially proffer herself as America's "diva of domesticity" through the establishment of Martha Stewart Living Omnimedia. She was both chair-

person and the company's leading trademark. This was a large, multifaceted corporation promoting Stewart's products, advice, and-above all-her carefully guarded reputation as an exacting perfectionist. It is estimated that revenues from her line of K-Mart products, media programming, personal Web site, and publications approached the \$1-billion mark, establishing Stewart as the most successful female entrepreneur in history. She clearly reveled in her role as America's most recognizable symbol of both good taste and the good life. However, her reputation was sullied in 2002 when the government accused her of insider trading on Wall Street-a potential felony. Government prosecutors maintain that Stewart-acting on the advice of her broker-illegally sold off several thousand shares of ImClone, a failing biochemical interest, before their value declined. Stewart vigorously and vociferously denied all allegations and professed her innocence. But in June 2003, the government announced its intention to prosecute Stewart on felony charges. Such bad publicity exerted a negative impact on her business empire, and she was summarily dropped as a K-Mart spokesperson. In March 2004, a jury found Stewart guilty, and she was sentenced to five months in prison and five months in home confinement, along with having to pay a \$30,000, fine. As a result of the guilty conviction, Viacom pulled Martha Stewart Living from its television lineup. That same month Stewart resigned from the board of Martha Stewart Omnimedia. In October 2004 Stewart reported to a minimum security prison to serve her five-month sentence. An additional five months of home confinement ended in August 2005. Her current projects include two new television series.

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John C. Fredriksen

stock markets Markets where the shares of existing companies are traded. In the United States, there are two types of stock market: organized exchanges with central locations such as the NEW YORK STOCK EXCHANGE (NYSE), and over-the-counter markets such as the NATIONAL ASSOCIATION OF SECURITIES DEALERS Automated Quotations (NASDAQ) system, a market where stocks trade on a centrally linked computer system between dealers. Technically, centrally located markets are called exchanges, while the NASDAQ, due to its widespread character, is referred to as a market only.

The New York Stock Exchange is the country's oldest market, dating to an agreement made among traders in 1792. It was not until 1817, when the market moved indoors and renamed itself the New York Stock and Exchange Board, that it began to take on a structure that would be recognized today. One of the most significant developments of the 19th century was the introduction of the TICKER TAPE to instantly report trades as they were made, greatly adding to information flow.

The second-largest exchange, the AMERICAN STOCK EXCHANGE, began in 1953, after changing its name from the New York Curb Exchange. Until 1921, the curb had been an outdoor market, conducted around the intersection of Broad and Wall Streets in lower Manhattan. Other exchanges also developed in Philadelphia, Los Angeles, Boston, and Chicago and were referred to as REGIONAL STOCK EXCHANGES. They all adopted the same sort of selling system used by the NYSE—namely, a specialist system for auctioning stocks.

In a specialist system, one floor trader is designated as the specialist and devotes his time to maintaining a market price for the stock(s) under his aegis. Other traders on the floor of the exchange trade with him for their customers. The "book" of that stock's prices is constantly maintained by the specialist, who is charged with maintaining orderly trading in the stock. In the NASDAQ environment, a central location is not possible, but various dealers around the country are designated as "market makers." They are responsible for making and maintaining prices in those stocks and are linked by a central computer, which, in effect, is the market.

Stock market performance traditionally has been viewed as either a bull or bear market. The term bull market is given to strong performing financial markets, in which prices continue in an upward trend. Although the exact origin of the term is not known, it is generally assumed to refer to the running of bulls, whereby investors tend to follow each other in bidding prices up, especially in the stock market. Certain periods in stock exchange history have been characterized as bull markets, while others, in which prices tend to fall and stay depressed for relatively long periods of time, are referred to as bear markets.

Since World War I, bull markets have occurred in the 1920s, 1950s, and 1960s when the stock indexes all rose substantially. After the inflationary period of the 1970s and early 1980s, another bull market began in 1982 and continued well into the late 1990s, interrupted by a market drop in 1987. In many cases, the markets ended with major scandals on Wall Street, acting as preludes to the bear markets that followed. Both terms still form a strong part of market folklore and are commonly cited in the press, although advances in stock price reporting and the rapid transmission of news allow more technical analysis of the trends that the terms represent.

Bear markets usually follow periods of strength in market indexes and lead to lower asset prices. As a result, previous market highs usually are not reached again for a relatively long period of time. Traditionally, in a bear market, prices fall about 20 percent from their previous levels, affecting investor confidence and the number of new stock issues coming to market as well. The term *bear* derives from traders of the 19th century who were said to be bears because they "tore" open the markets by clawing at them through short-selling, or selling stocks they did not own hoping that the prices would drop so that they could purchase them at a lower price. Increased short-selling forced prices down and caused the markets to lose confidence, leading to prolonged periods of depressed prices and slow economic activity.

Since the Civil War, bear markets have been evident in 1869, 1873, 1893, 1907 and the period following the stock market crash in 1929, when prices remained depressed until the end of World War II in 1945. Recently the late 1970s and early 1980s as well as the period following the stock market collapse in 1987, were also considered bear markets. After the Internet bubble of the late 1990s collapsed, the stock markets again entered a bear phase, fueled by a drop in corporate earnings, accounting scandals, and several Wall Street scandals. Today the phenomenon is no longer primarily the product of short-selling or wild market speculation by unregulated traders but is indicative of the aftermath of a rapid increase in prices whereby high stock valuations cannot be maintained in the face of falling profitability or productivity.

The markets changed dramatically when the Securities Exchange Act was passed in 1934. The new law enabled the Securities and Exchange Commission (SEC) to enforce more equitable practices on the exchanges, eliminating many abuses of the past. One of the most notable was the prohibition against insider trading, the term given to someone who sells securities using information obtained from someone in a company who is in possession of financial or other important information not available to the general public. Gains made from such trades are illegal and subject the trader to penalties and prosecution. The SEC rules are intended to make the process of trading securities as transparent as possible, meaning that no one should have access to information at the expense of others.

Several subsequent SEC rules changed the way the markets did business. One of the most fundamental involved margin trading. Margin trading is the practice of buying securities or commodity futures contracts with borrowed money. The term means the amount of money loaned against the purchase. Margin is extended to investors by brokers, although the amount that can be loaned in the securities markets is governed by the FEDERAL RESERVE, by authority given to it in the SECURITIES EXCHANGE ACT OF 1934.

Before the Fed was given the authority to set margin rates, brokers had sole discretion to determine how much a customer could borrow. In some cases, they would loan up to 90 percent of a security's value. In many stock market falls, margin played a large role since, if customers were unable to make up the losses incurred by a loss in value, the securities in their accounts could be automatically sold to prevent further loss. The fall in the stock index during the Crash of 1929 was exacerbated by forced margin selling. As a result, the matter of setting margin rates was given to the central bank rather than continuing to be discretionary on the part of brokers.

Since 1974, margin has been set at 50 percent, although it has ranged as high as 100 percent in 1946 and 90 percent in 1958 and 1962. The rate has been increased when the Federal Reserve wanted to limit the amount of speculation in the stock market, although margin was not raised during the 1990s stock market bubble. At the time, some brokerages did raise the margins they required on certain speculative stocks. They are allowed to do so by NYSE and NASDAQ regulations, since all exchanges may impose margin requirements of their own as long as they do not conflict with those set by regulators.

The amount of money loaned by brokers for margin trading is often studied to determine how much speculation is occurring in the various markets. During the stock market rises in the 1920s, late 1950s, 1960s, 1987, and again in the late 1990s, margin levels rose substantially as speculation increased dramatically in the markets. Another widespread practice in the markets that was substantially changed by the SEC was the matter of short-selling. In the securities markets, short-selling occurs when a trader sells a stock he does not own with the intention of buying it at a later date at a lower price. The difference between the prices is his profit. In order to sell short, the securities must be borrowed from another investor who loans them for the occasion. When the purchase eventually is made, the bought securities are returned to the lender and the transaction is complete.

On the stock exchanges, short-selling has existed almost from the beginning of the exchanges, and selling short was often associated with bears, those investors who believed a stock's price was going to fall and wanted to profit. Before the Civil War, short-selling was best exemplified by the activities of Jacob Little and Daniel DREW, two notorious bears who made a living by forcing down the price of stocks.

After the Crash of 1929, a great deal of shortselling occurred on the stock exchanges as traders took advantage of falling prices, eliciting criticism from many quarters. As a result, the practice was regulated by the Securities Exchange Act of 1934, which made it illegal to short on a downtick, that is, to sell a stock as prices were constantly falling. The futures exchanges also implemented their own procedures that controlled the process to an extent.

One of the regulators' greatest contributions to the integrity of the stock markets has been defining insider trading. The term insider trading also applies to employees and officers of a company who may have access to this sort of information. Usually, this is referred to as "insider activity." Occasionally, when these employees sell stock in their company, they are required to report the transaction to the SEC, and it becomes a matter of public record and is published in the financial pages of the major financial newspapers.

In response to a Wall Street crisis beginning in the late 1960s, Congress acted to preserve the integrity of the marketplace. The Securities Investor Protection Corp. (SIPC) was a government sponsored private company created by the Securities Investor Protection Act of 1970. The corporation acts as an insurance company protecting securities held in customer accounts at broker/dealers registered with the Securities Exchange Commission. The insurance protects the securities themselves, not their market value.

The law creating SIPC was passed in response to a Wall Street crisis that began in the late 1960s. Increased volume on the stock markets created a backlog at many securities firms, which were unable to keep abreast of the buy and sell transactions. Subsequently, many orders were improperly recorded or not recorded at all, and many others were the subject of fraud and theft. Several dozen securities houses were forced to close their doors as a result, and several major Wall Street houses absorbed the accounts of customers at the failed firms. Congress then passed the act in order to ensure the integrity of trading on the exchanges and to reassure customers that the securities in their accounts were safe.

The SIPC was the securities market's version of deposit insurance as originally provided to bank depositors by the FEDERAL DEPOSIT INSUR-ANCE CORPORATION. Accounts were insured to protect cash and securities held in them but not the market value of the securities themselves. The fund helped restore the integrity of Wall Street after one of its worst internal crises and led to rapid computerization at securities firms, vital to their survival as market volume continued to increase from year to year. In the 1980s and 1990s, SIPC insurance became as common as deposit insurance at banks and must be displayed by member firms on their advertisements.

The markets taken as a whole have increased both in volume and the number of stocks traded over the years. Both the NYSE and the NASDAQ now regularly record days of 1 billion shares traded or more. Since the market collapse of 1987, the NYSE has implemented a circuit breaker that effectively halts trading temporarily if the market index should fall precipitously. The smaller regional exchanges have lost volume and business to the larger exchanges, which have had more money to invest for increasingly expensive computers and communications equipment. The NASDAQ and the Amex merged in 1998, bringing the two types of marketplace under one umbrella. The merger did not prove successful, however, and the American Stock Exchange was sold to a private investor group in 2003.

In the late 1990s, another type of market came into existence. Several ECNs, or electronic communication networks, began trading stocks after the other markets closed. These are virtual trading markets where business may be done only by computer over a Web site. These markets are still in an early stage of development.

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Strong, Benjamin (1872–1928) banker and central banker Strong was born in Fishkill-on-Hudson, New York. At age 19, he began working for a private New York bank, later switching to a trust company. Joining the J. P. Morgan & Company-affiliated Bankers Trust Company as secretary in 1904, Strong rose rapidly and became its president in 1914. The Panic of 1907 convinced Strong of the imperative need to implement national monetary reform and to establish a U.S. central bank empowered to manage the currency and to promote American financing of the country's foreign trade. With other prominent New York bankers he lobbied for this objective, from 1910 working with prominent senators and congressmen to pass the requisite legislation, which eventually resulted in the 1913 Federal Reserve Act.

Despite serious reservations regarding the decentralized nature of the Federal Reserve System thereby established and what he considered its excessive exposure to undesirable political influence, in 1914 the pragmatic Strong became first governor of the New York Federal Reserve Bank, remaining so until his death. Under his dominant leadership the New York institution swiftly attained the unofficial status of primus inter pares among the system's 12 regional banks, usually overshadowing the supposedly preeminent Washington-based board of governors. Staunchly pro-Allied in World War I, Strong backed credit and loan policies that effectively facilitated British and French access to U.S. funds to finance their war effort against Germany.

Wartime correspondence he opened with the Bank of England and Banque de France betokened the prominence international activities quickly assumed in Strong's vision of the Federal Reserve System. In the 1920s, Strong worked closely with Governor Montagu Norman of the Bank of England to implement a systematic currency stabilization program embracing most major European countries, backed by loans from private American bankers and, on occasion, Federal Reserve credits; efforts both men believed vital to the postwar restoration of prosperity. In the mid-1920s, Strong acquiesced in Great Britain's return to gold at an overly high rate against the dollar, to facilitate which he deliberately left U.S. interest rates substantially lower than their British counterparts. Some, though by no means all, economic historians later argued that his policies helped to precipitate not just Britain's subsequent economic difficulties, but also the United States' speculative boom and succeeding slump of the mid- to late 1920s, thereby impelling the Great Depression.

Strong's death in 1928 deprived the Federal Reserve System of its most forceful figure just as the coming economic crisis began to gather strength. The absence of equally decisive leadership during the Great Depression was one factor behind mid-1930s banking legislation designed to strengthen the central Federal Reserve Board vis-à-vis the regional banks.

See also FEDERAL RESERVE.

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Priscilla Roberts

Sutter's Mill The name John Augustus Sutter (1803–80) became synonymous in the pre–Civil War era with the vast wealth and opportunity associated with the California gold rush. Ironically, Sutter suffered great losses due to the discovery of gold on his property near Sacramento. A pioneer, Sutter obtained possession of great tracts of land only to see them slip away through his own carelessness and bad judgment and the dishonesty of others. While never destitute, he spent his later years trying to recoup at least a fraction of his lost wealth.

Before coming to the United States, Sutter was a Swiss citizen and served in the Swiss army. Leaving behind a wife and three children, he ventured to the United States in 1834. After stops in other parts of the country, he finally arrived in Mexican California at San Francisco by ship in July 1839. With the help of Indians, he established the fortified colony of New Helvetia at the junction of the American and Sacramento Rivers. Sutter acquired a large estate through a land grant from Governor Micheltorena in 1845. The establishment of U.S. rule over California brought even greater wealth to Sutter. Curiously, his prospects dimmed when James Marshall, a millwright and Sutter's partner, found evidence of gold on Sutter's property in January 1848. Ambivalent from the start about the discovery, Sutter intended to keep the whole matter a secret, at least for the time being. However, the

temptation to share information about the strike was too great. Sutter was torn between his commitment to agriculture and the allure of the precious mineral. By May 1848, reports of the gold strike had spread widely, and Sutter discovered his gristmill workers had left their jobs to search for gold. The hapless Sutter, meanwhile, had little success finding gold and even less success keeping what he did find.

As stories of his great wealth spread, Sutter became the target of multitudes of sharpers. Many of the people who flocked to the area pillaged his property and possessions. The hungry simply slaughtered his cattle, his crops were overrun, and virtually anything that could be carted away disappeared. In the fall of 1848 Sutter's son August arrived, but he was no more of a match for swindlers than his father. With virtually no established law enforcement, the Sutters were left to their own highly inadequate devices. Squatters evaded the Sutters' attempts to run them off and killed livestock as they pleased. In the midst of this chaos, Sutter served as a delegate to the state constitutional convention, after which he offered himself as a candidate for governor. He finished third in the election, garnering just over 2,000 votes. His wife and remaining offspring arrived soon after the gubernatorial election and were disappointed that Sutter had lost. By the mid-1850s, Sutter had been stripped of most of his land. Always a boaster, he bragged even about the great extent of his losses.

Sutter gained at least some status in February 1853, when the California legislature made him a major general in the California militia. While performing the honorary duties of this office, his property continued to be taken from him, and judicial decisions failed to uphold his land claims. His economic troubles, while probably not the cause, certainly contributed to his consumption of alcohol. Sutter's economic decline continued into the 1860s, and in 1864, the state legislature established a fund of \$15,000 to be paid to him in monthly amounts of \$250 for five years. The final blow came in 1865, when a dis-

gruntled vagrant set fire to Hock Farm, Sutter's home. Sutter and his wife lost nearly all their possessions.

Five months after the fire, Sutter and his wife sailed for the East, never to return to California. With the assistance of Colonel William H. Russell, Sutter endeavored to gain reimbursement for his losses, alleging that an ineffective court system in 1848 and 1849 had failed to protect his property from illegal encroachments. Pursuant to this, Sutter and his wife, Anna, went to Washington, D.C., in December 1865. The Senate Claims Committee, while rejecting the basis for the claim, nevertheless recommended that Sutter be awarded funds from the sale of property to which he had once established ownership. However, Congress took no action. Sutter continued to push his claim during subsequent congressional sessions. When not suffering from bouts of rheumatism, Sutter enjoyed Washington social life and actively pursued the support of legislators. Many noted Americans, including General William Tecumseh Sherman and Mark Twain, assisted Sutter by writing letters on his behalf to Congress.

At the conclusion of the 1870-71 session, Sutter, tiring of life in Washington hotels, moved to Lititz, Pennsylvania, where he lived comfortably. He continued to receive the California allowance, which was renewed for an additional four years. He received other small annuities, and his son August also offered assistance. In 1876, when Sutter was 76 years old, historian Hubert H. Bancroft came to Lititz to question him about his California experiences. Bancroft noticed that Sutter was wearing a ring made from the first gold discovered in California that fateful winter of 1848. The historian was not kind to Sutter in his account of California history. Bancroft saw the old man as a minor figure who deserved little credit for the development of the state and merited little sympathy for his personal downfall. Sutter, health permitting, took part in reunions of the Associated Pioneers of the Territorial Days of California and was elected president at the 1878 meeting. In 1879, Sutter was so racked with rheumatism that he could not attend the Associated Pioneers meeting. To add to his misery, Congress once more declined to act on his claim.

Hope arose once again the following year as Senator Daniel Voorhees sponsored a joint resolution to grant Sutter \$50,000. After initial high hopes, the measure fell victim to an early adjournment in an election year. Hearing the news, Sutter fell into a deep depression and died in a Washington, D.C., hotel.

See also MINING INDUSTRY.

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Glenn Utter

swap market A large, over-the-counter market developed in the late 1970s and early 1980s, conducted between commercial and investment banks and (mostly) corporate customers. Customers trade swaps with dealers, which agree to exchange cash flows, currencies, or commoditybased payments with the customers for a specific period of time. The swap contracts are irrevocable and cannot be sold to a third party, being similar in this respect to a forward contract. Swaps are the latest development in the derivatives markets, which also include options and futures trading.

Swaps became popular products offered by banks after the debt crisis in the developing countries in the 1980s. Banks realized that offering swap trading abilities for their customers did not require additional capital and that they could trade them in a relatively unregulated atmosphere. As a result, swap trading among banks and their customers exploded.

Swap trading quickly developed into one of the largest financial markets in the 20th century, partly due to the way swaps are counted. When two parties swap interest payments on \$100 million, it is the principal amount that is counted rather than the actual amount of money that changes hands. This tends to make the market appear larger than it really is because the principal amounts outstanding rapidly reached the \$1 trillion level in the early 1990s and continued to grow. But the market is still substantial by most measures and widely used by corporate treasurers as well as others to manage their cash flows and hedge liabilities. Those liabilities are recorded by the banks as off-balance sheet, or contingent, liabilities and have become the subject of concern among regulators because the market is essentially unregulated and privatethe record of a swap is private and is not normally made public.

Swap agreements played a pivotal role in the BANKRUPTCY of Orange County, California, and in financial difficulties in other municipalities in the early and mid-1990s. Many of these municipalities entered into intricate swap arrangements with swap dealers unaware of the risks they faced. Some entered into the arrangements on their own, while others joined a pool of swap investments run by larger municipalities. Orange County ran one of these pool arrangements before it collapsed.

Swaps are overseen by the International Swap and Derivatives Association (ISDA), a trade group. Within the last 10 years there has been substantial movement to adequately account for them on balance sheets according to GENERALLY ACCEPTED ACCOUNTING STANDARDS. The private nature of swaps can present problems to regulators who often attempt to discover the liabilities of a firm or government entity only to find that swap arrangements can be difficult to detect. ENRON CORPORATION is a case in point.

See also FUTURES MARKETS, INVESTMENT BANKING.

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Taft-Hartley Act Labor legislation passed by Congress in 1947, officially called the Labor-Management Relations Act. Sponsored by Senator Robert Alphonso Taft of Ohio and Representative Fred Allan Hartley of New Jersey, the act amended many provisions of the earlier NATIONAL LABOR RELATIONS ACT of 1935, or Wagner Act, a law that regulated the labor relations of businesses engaged in interstate commerce.

The act enlarged the powers of the National Labor Relations Board and required either unions or employers to file notice of any intent to terminate a collective bargaining agreement, and also give notice to government mediation services. For its part, the federal government was given the power to obtain an injunction if negotiations broke down between parties and if it judged that the strike endangered public health or safety.

The government was empowered to obtain an 80-day injunction against any strike that it determined to be a threat to national health or safety. The act also prohibited jurisdictional strikes between two unions over which should act as the bargaining agent for employees and secondary boycotts against an already organized company doing business with another company that a union was trying to organize. In addition, the law did not extend protection to workers on wildcat strikes, outlawed the closed shop, and permitted the union shop only if a majority of the employees agreed. In addition, the law prohibited union officials from being Communists.

Originally, President Harry Truman vetoed the act, but nevertheless it has stood the test of time. John L. LEWIS also initially opposed it. Generally, its most popular and often used power was the government's ability to call for a cooling-off period if negotiations failed and a strike was scheduled. Use of the law declined in the 1980s and 1990s as the labor movement itself became less powerful in calling strikes and work actions.

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tariffs Taxes imposed on the import of foreign goods. Traditionally, they have been enacted to protect segments of the domestic economy from foreign competition or to raise revenues. Tariffs have existed in one form or other since the late 18th century. The power to enact tariffs is found in the Constitution and is invested solely in the federal government, not the states.

Congress raised tariffs in 1828 in order to protect the New England manufacturing industry, triggering a constitutional crisis. When tariffs again were raised in 1832, the South Carolina assembly declared them null and void, fearing they would lead to retaliation against American agricultural exports. This led to a states' rights confrontation between South Carolina and the administration of Andrew Jackson. Higher tariffs were also enacted during the Civil War and remained in effect until World War I. They were raised again in the 1920s by Republicans, mainly through the Fordney-McCumber tariff and the HAWLEY-SMOOT TARIFF ACT. The latter especially allowed the president to impose tariffs on imports of foreign goods that had a price advantage over those produced domestically, thereby eliminating any such advantage. Both tariffs contributed to the depression of the 1930s. After Franklin D. Roosevelt was elected president, the Reciprocal Trade Agreements Act of 1934 was passed, enabling the president to negotiate lower tariffs with the country's major trading partners.

After World War II, 23 of the leading industrial nations signed the General Agreement on Tariffs and Trade (GATT). The agreement called for trading nations to act multilaterally rather than unilaterally when considering tariffs. It was analogous to the agreement signed at Bretton Woods, New Hampshire, which required signatory nations to the International Monetary Fund to act multilaterally when considering currency devaluation or revaluation. After 1995, the GATT was incorporated into the World Trade Organization (WTO). In the 1960s, Congress passed the Trade Expansion Act, which prompted GATT to reduce tariffs on heavy equipment and machinery and chemicals and led to a favorable U.S. trade balance in the years that followed.

Also in the 1960s, Congress passed the Interest Equalization Act (IET), one of the few tariffs ever assessed against intangibles such as foreign securities issued in the United States. Similar to the Hawley-Smoot tariff, it allowed the executive branch to impose a tariff that would dissuade investors from purchasing foreign securities issued in the United States if they presented an advantage over American securities.

In the 1970s, the United States engaged in a series of voluntary agreements whereby foreign competitors agreed to limit their exports to the United States. The Japanese agreement to limit export of automobiles to the United States in 1981 was one example of this policy. In 1988, Congress passed the Omnibus Trade and Competitiveness Act, which gave the president powers to regulate trade, including voluntary quotas, subsidies to domestic exporters, and voluntary restraints. In the same year, the United States and Canada created the NORTH AMERICAN FREE TRADE AGREEMENT (NAFTA), which Mexico joined in 1994, forming the world's largest geographical free-trade zone.

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Tax Reform Act (1986) A major overhaul of the INCOME TAX code passed during the administration of Ronald Reagan. The act had three main

parts: simplification of the tax code, a reduction in tax rates, and the elimination of special treatment for capital gains. The law was the first attempt in decades to make tax more equitable, to level the playing field for both corporations and individuals.

By simplifying the tax code, fewer exemptions were allowed, in theory broadening the tax base. Those laws that remained were simplified to make them more understandable. More specifically, the top tax rate on individuals was reduced from 50 percent to 28 percent. The marginal rates for less wealthy taxpayers were also reduced. The law also changed depreciation schedules and eliminated tax credits on depreciable assets. Importantly, for individuals the deduction for contributing to an individual retirement account (IRA) was eliminated for those in the high marginal tax brackets. Also, tax shelter benefits were eliminated from real estate investments.

The act also changed deductions for interest payments on individual tax returns. Deductions were limited to interest expenses paid on mortgages on primary and secondary homes. Deductions paid on consumer interest not attached to mortgage payments, such as credit card interest, were eliminated. The law also affected the tax exclusion traditionally associated with some municipal bonds, and caused major changes in the municipal bond market as a result. Municipal bonds now had to meet an acid test to determine the use of funds raised. If they could not clearly be shown as being for the use of a municipality, they could not be classified as municipal bonds. Equally, some forms of interest rate arbitrage previously allowed municipalities that raised municipal bonds and then sought higher yielding TREASURY BONDS, were closed.

Since the act was passed, changes have been made that increase the top earned income tax rate and reinstate a preferential rate for capital gains and losses. When the act was passed, it was hoped that it would simplify tax laws and fairness. But subsequent events, such as the continuing federal budget deficit in the early 1990s and the bull market that followed, necessitated changes that could not be foreseen in the mid-1980s. However, the act remains a significant attempt to overhaul the tax laws in the name of simplicity and fairness.

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Taylor, Frederick Winslow (1856–1915) management consultant Often called the father of scientific management, Taylor was born in Germantown, Pennsylvania. He enrolled at Phillips Exeter Academy in New Hampshire prior to taking the admissions examination for Harvard; he planned to become a lawyer. Passing the admissions examination with honors, 18year-old Frederick experienced eyesight problems and instead chose to pursue a personal interest by going to work as a machinist apprentice. He joined a firm in Philadelphia, Ferrel and Jones, that manufactured steam-pumps. He eventually graduated in engineering from Stevens Institute of Technology in 1883.

Following the American Civil War, industrialization in the United States grew rapidly with a proliferation of factories, the involvement of large numbers of workers, and the use of new machinery and equipment. Taylor, now an assistant foreman at Midvale Steel in Philadelphia, became interested in how people worked. This led him to closely observe workers' use of motion and time as they interacted with machinery, materials, and workplace arrangements during production. Studying and recording his observations, Taylor analyzed work in a new way and established methodologies to improve worker and factory productivity. He believed that both owners and workers should share in these advances. Taylor rose from foreman in 1880 to become Midvale Steel's chief engineer by 1887.

He left Midvale steel in 1894. Awarded a gold medal at the Paris Exposition of 1900 and holding more than a hundred patents, he was named president of the American Society of Mechanical Engineers in 1906; Henry Gantt and Frank and Lillian Gilbreth were among his followers. Taylor was awarded an honorary doctorate from the University of Pennsylvania that same year, and his methods were widely introduced into factories and offices throughout the world. He published numerous articles in the Proceedings of the American Society of Mechanical Engineers and authored four books, The Principles of Scientific Management, and Shop Management, both in 1911, Concrete Costs with S. E. Thompson in 1912, and Scientific Management, edited by C. B. Thompson, in 1914.

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telecommunications industry American telecommunications began with the mid-19thcentury TELEGRAPH, was extended with undersea telegraph cables after the Civil War, and grew further with the telephone and new modes of transmission (microwave, satellite, fiber optic, and wireless) in the late 20th century. By the early 2000s, the industry was expanding into a host of other technologies, having become a vital sector of the economy. The technology-based business consists of both manufacturing and service (long distance, local, wireless) sectors, with many aspects regulated by federal and state governments. Telecommunications began with the successful innovation of Samuel Morse's telegraph system in 1844. For three years, the U.S. Post Office ran the pioneering Washington to Baltimore line, deciding in 1847 to sell it to private interests because of its expense and relative lack of use (in part, as the two cities were too close and already had good rail connections). By that time other private telegraph companies had developed (the first connected New York and Philadelphia) and were rapidly growing. For decades thereafter postal officials regularly sought congressional authority to regain control of the industry, but to no avail.

Telegraph expansion paralleled and aided the growth of the nation's network of RAILROADS. The latter provided a prepared right of way, while the former offered vital communication links for the often single-track networks that moved people and goods. The first coast-to-coast telegraph line was opened in 1862 (seven years before rail links extended that far) and immediately made money, demonstrating the value of telecommunications over great distances.

WESTERN UNION, the first telecommunications monopoly, was formed as a regional alliance of several smaller firms in 1856 and rapidly expanded, often following railway lines. Just a year later the six largest telegraph companies developed a CARTEL, dividing up the country and business among themselves. The Civil War demonstrated the value of telegraph links (the Union was far better equipped than the Confederacy) and drove up rates and company profits. Western Union took over some 15,000 miles of government-built lines at the end of the war and became by far the largest company in the field.

Telegraph systems initially served only land routes, as it was presumed impossible to lay lines underwater. After experiments running insulated telegraph lines under lakes and across rivers, in 1858 an American-led consortium laid the first cable connecting Britain and the United States, only to see it fail in a few months. The Civil War intervened, and after a failed attempt to lay a cable in 1865, success came in 1866; soon others were added. The Pacific was not crossed until 1902 because of the great distances involved. Availability of global telegraphy rapidly changed the face of business and government affairs. The ability to "instantly" communicate had great (and generally positive) impact on diplomacy, business affairs, and other aspects of daily life.

The equipment needs of an expanding telegraph industry (as well as those of lighting, power, and transport) helped create an electrical manufacturing industry. The first electrical companies rapidly demonstrated the importance of continuing research to develop patents as the chief means of controlling innovation. Western Electric was begun in 1869 as the manufacturing subsidiary of Western Union but was sold to the fledgling Bell System in the early 1880s. The first association of electrical engineers appeared in 1884. Westinghouse, based on important airbrake patents, was founded the same year, while GENERAL ELECTRIC combined two older firms (one of them Thomas Edison's) in 1892. Together they soon dominated the electrical industry, all the more so after agreeing to pool (share) many of their patents in 1896, with twothirds of the business going to GE and a third to Westinghouse.

This condition of an established telegraph industry and rising electrical manufacturing businesses formed the context for the telephone. Though many others had tried, the telephone was largely the creation of Alexander Graham BELL, who received his first patent in March 1876. Early development of the telephone was fraught with technical and financial problems. Business and government users of the telegraph preferred its ability to cover great distance and record a message, not trusting the new voiceonly means of communication. Western Union was offered a chance to buy Bell's patent rights in 1877, but the telegraph giant saw little value in the telephone and turned down the chance, forcing Bell's backers to develop their own system. Patent battles between Bell's backers and other firms and inventors were litigated for years, nearly always resulting in Bell victories.

Restricted by crude technology to providing local service (initial iron wires rarely extended 100 miles), telephone service developed slowly before the Bell patents expired in 1893. Initial Bell business strategy focused on licensing use of its patents and selling equipment to companies building systems in cities and towns, largely to serve business and the wealthy. The first telephone switchboard was placed in service in New Haven, Connecticut, in early 1878, and demonstrated its greater efficiency over individual lines between each customer. The first use of telephone numbers and directories of telephone users appeared about the same time. Telephone exchanges (using many switchboards) appeared about two decades later.

A Kansas City undertaker, concerned that telephone operators were sending business to his competitors, developed the first mechanically automated telephone switch in 1891. The first automated switches began to appear around the turn of the century in major cities—and would be used in smaller communities for decades. Copper telephone lines were placed in use between Boston and New York, extending telephone service to 300 miles. Transcontinental telephone service became possible only around 1915 by use of amplifiers based on Lee De Forest's "Audion" vacuum tube.

As Bell's basic telephone patents expired in and after 1893, hundreds of competing firms entered the business. Soon known as the "Independents" (meaning independent of the expanding Bell System), most offered lower prices but were poorly capitalized and fell into Bell System (by now AMERICAN TELEPHONE & TELEGRAPH) hands. While many cities featured competing telephone systems, these steadily disappeared, in part because, after 1900, AT&T refused to interconnect its growing network with competitors. In 1909 Western Union was taken over by the rapidly growing AT&T, raising federal antitrust concerns. Government regulation of telecommunication developed very slowly. Based on the COM-MERCE CLAUSE (Article I, Section 8) of the Constitution, which gave Congress the right to regulate business between and among the states, the Post Roads Act of 1866 offered telegraph companies the right to extend their lines along public rights-of-way in turn for allowing the government priority use of their facilities. Two decades later, Congress created the INTERSTATE COMMERCE COMMISSION (the first independent regulatory agency), which in the 1910 Mann-Elkins Act was assigned some rather weak directives to regulate the price of telegraph and telephone service.

On the state level, REGULATION of telecommunications (as well as power and transport) grew out of the Progressive political movement, appearing first in 1907 in both Wisconsin and New York. The first state public utility commissions resulted, an idea that slowly spread to other



William Howard Taft on the telephone, ca. 1904 (LIBRARY OF CONGRESS)

states. Such commissions regulated telegraph and telephone carrier rates and service within the borders of their states.

Passage of the Sherman antitrust law in 1893 provided a strong federal tool to break up industry cartels. In 1913, AT&T was threatened with such a suit if it did not modify its expansive business strategy of taking over independent companies, as well as spinning off ownership of Western Electric. The company agreed to both, essentially accepting limited government regulatory oversight in return for government recognition of its dominant role within the telephone business. Regulators and AT&T executives alike spoke of the "natural monopoly" of telephone service as being the most efficient way to extend service to the most users.

For a brief period during the U.S. involvement in World War I (1917–18), Congress gave the post office what it had long sought—administrative control over telegraph (Western Union) and telephone (AT&T) operations, while the U.S. Navy supervised wireless. Debate raged in 1919 over whether to continue such government operation (a standard practice in most other nations at the time), and both the navy and post office lobbied hard for it, but Congress decided to return the carriers to their private owners. At no time since has the U.S. government operated commercial services, even temporarily.

Only with the formation of the FEDERAL COM-MUNICATIONS COMMISSION (FCC) in 1934 was a firm basis established for comprehensive regulation of interstate telegraph and telephone service. After an intensive study of the country's communication companies and their finances, Congress established the new commission with, for the first time, extensive federal powers to regulate prices and conditions of service by telecommunication common carriers. From 1936 to 1939, the FCC intensively investigated the telephone industry, recommending many changes in AT&T operation and government regulation. By this time, the unified Bell System of local companies and long distance facilities was largely synonymous with the telephone industry. Using some of the FCC findings, in 1949 the Justice Department brought suit to break up AT&T, a case that never went to trial and was settled with a 1956 consent decree that changed little.

Improved technology would begin to change the face of telecommunications after 1945. Paced by wartime needs and spending, Bell Labs and other researchers produced coaxial cable and microwave links that were first used commercially in the years after the war. No longer was it necessary to build an expensive telecommunication network using copper wires. Microwave links required the use of many antenna towersand a license to use the high-frequency spectrum-but this was less expensive than a traditional wired network. Coaxial cable offered the broadband capacity needed to transmit thousands of telephone calls or full-motion video. Developed largely by AT&T, coax made possible the linking of the initial television networks after 1948 and, perhaps ironically in terms of the eventual cable competition, the means to distribute cable television service. In 1956, AT&T spearheaded the laying of the first transatlantic telephone cable (TAT-1).

Even more fundamental was the rise of solidstate electronics. Development of the transistor at Bell Labs in 1947, followed by the silicon chip in 1959, led to the era of modern electronics. Telecommunication equipment of all kinds could now be made smaller and more cheaply—and would last longer. Combined with analog and then digital computers, electronics was rapidly revolutionized.

Development of satellite communication was first hinted at in a 1945 article by Arthur C. Clarke in which he postulated a geostationary orbit 22,300 miles high that would keep a satellite above the same part of Earth. Pushed by the cold war missile race, the world's first artificial satellite came just 12 years later as the Soviet Union launched *Sputnik* into a low Earth orbit in October 1957. Early military satellite communications followed the same low-orbit path until the first commercial geostationary satellites appeared in the 1970s. Construction and launch expense limited satellite links.

Pushed in large part by these technical advances, a shift to telecommunications DEREGU-LATION began slowly, first with the federal courts and the FCC, finally expanding to more fundamental change by Congress. The idea of limiting and then rolling back federal (and later state) regulatory power originated from these expanding technological choices (that allowed more than one company to participate), tight government budgets, changing ideology, and the realization that government could no longer "do it all."

Deregulation began slowly, with no sense of any overall plan. In its Hush-a-phone (1956) and Carterfone (1968) cases, the courts and the FCC began to open up access by non-common carrier firms to the telecommunications equipment market, while the FCC's Above 890 (1959) and MCI (1969) decisions likewise began a very limited provision of telecommunication services on other than a regulated common carrier basis. The FCC's Specialized Common Carrier (1971) and related Domestic Communications Satellite, or "Domsat," (1972) decisions more fundamentally established competition rather than regulation as the most efficient means of expanding use of telecommunication technologies. Armed with such active FCC support, MCI (and eventually other firms) became an increasingly aggressive competitor to AT&T, beginning to offer consumer telephone service in 1975. Western Union launched the country's first Domsat, Westar I, in 1974; many others soon followed from several different firms. By the mid- to late 1970s, deregulation and the encouragement of competitive entry by new companies was becoming the standard FCC approach to telecommunications policy.

AT&T strongly resisted these changes, arguing that one company could more efficiently provide varied services to all users. However, it rapidly became apparent that for a truly competitive market to be established, no single player could dominate. AT&T's anticompetitive approach became a target. After a 10-year legal antitrust battle (the third time the federal government had sought to break up AT&T), the Bell System was broken up at the beginning of 1984 under the conditions of a consent decree issued by a U.S. district court. The local operating companies-about threequarters of the unified system-were divested (spun off) to eventually become seven (later reduced to four) regional holding companies. The decision to break up AT&T was based on the conception of a domestic telecommunications market bifurcated into monopoly (local service) and competitive (long distance and manufacturing) sectors. Such a division promised to prevent illegal cross-subsidy between monopoly and competitive services, such as AT&T had engaged in for years. After the breakup, the new regional firms thrived, while AT&T began a slow decline amid management confusion and growing competition. In 1995, the company underwent a selfimposed breakup, shedding its manufacturing and much of its research functions into separate companies.

The height of U.S. deregulation was reached with the Telecommunications Act of 1996, with which Congress established conditions to create a fully competitive marketplace as the chief goal for the telecommunications sector. The fundamental changes, outlined in the law and detailed in many subsequent related FCC administrative rule makings, defined the conditions under which new competitors would face entrenched service providers, especially the monopoly local telephone carriers and cable television systems. How to successfully interconnect the various carriers-and at what cost-is a hugely complex technical and economic undertaking and was progressing in the early 2000s more slowly than many had expected or hoped. Likewise, the push to develop an effective policy of "universal service" whereby every household in the country is connected with all others has primarily been a matter of economics and politics rather than technology. By the early 2000s, only about 6 percent of the nation's households were not connected. The 1996 act provided a basic scheme to underwrite installation and service costs for such households, building on schemes that had been developed in many states over the previous two decades.

Digital technology first appeared in American telecommunications with AT&T's introduction of its T1 Carrier System in 1962. A T1 line offered far more capacity and a cleaner (less noisy) signal. Soon digital telephone switches appeared, allowing for more flexible network design and operation. But the most sweeping change came with the installation of fiber-optic cables to carry voice, data, and video signals. The huge carrying capacity of fiber—constantly raised with further technical improvements finally placed telecommunication networks well ahead of projected growth (and planted the seeds for disaster in the early 2000s).

Wireless telecommunications developed slowly for decades after World War II, limited by poor analog technology and very limited capacity-no more than 250 subscribers per market, only 10 percent of whom could use their portable telephones at a time. Bell Labs developed the notion of "cellular" systems allowing for frequency reuse (and thus far greater capacity) and developed it through the 1970s. The FCC approved operation of an analog cellular mobile telephone system in 1982, sparking a new growth sector. The arrival of all-digital personal communication systems in the 1990s led to even more rapid expansion as prices fell, such that about half of the population used one by the early 2000s. Promises of 3G (third-generation) services and a continually growing demand led telecommunication carriers to bid billions for access to the needed spectrum when the FCC held auctions.

The INTERNET, based on government networks dating back to 1969, became a widely used public network in 1995. Development of the World Wide Web and the graphic user interface making it possible opened up a wealth of expanding information resources and growing public acceptance. By the early 2000s, more than half of American households were connected to the Internet, a slowly growing number of them linked by broadband connections. Projections of Internet growth sparked bullish plans for the underlying telecommunication services and manufacturing that made the Web possible. Many of those projections were wide of the reality.

Telecommunications was generally a growth industry in the postwar years. As the "dot-com" industry boom cooled and then collapsed after 2000, however, telecommunications was dragged down with it. The key problem was overcapacity—too many channels and too few users. Fiberoptic links had been hugely overbuilt in the competitive frenzy of the 1990s. The country was served by six national wireless networks when half that number would better serve existing and projected demand. Broadband services (that would encourage greater network use) were slow to develop because industry lacked the funds to innovate, and the public seemed unmoved by various offerings.

The overbuilding had been driven by easily available investment funds. As the industry slowed in 2001, investment dried up, and stock prices began to plummet. The result was a credit squeeze that forced virtually all telecommunication carriers and manufacturers to lay off workers. A few went further and, facing Wall Street pressure to report constantly rising earnings, perpetrated outright fraud. First Global Crossing and then WORLDCOM fell into BANKRUPTCY, wiping out jobs and investments of shareholders. Other companies-especially Lucent and Nortel-teetered on the edge of financial failure. Competitive local exchange carriers, often thinly capitalized to begin with, nearly all collapsed, setting back development of local competition. Long-distance companies all showed sharp revenue declines as local monopoly telephone carriers received permission to provide inter-exchange service to their customers. Of the six national wireless carriers, only the two largest (Verizon and Cingular) were making a profit by 2003.

Part of the cause for the crisis in telecommunications was a collapse of policy oversight. Neither the FCC nor the state public utility commissions applied brakes or even expressed caution at the overbuilding of facilities beyond all projections of use for decades to come. Countless new players had been encouraged by the promise of the 1996 Telecommunications Act and were done in by the realities of a relentless market only slowly changing from regulated monopoly to free competition. Though the industry was by 2002-03 in its worst financial crisis in the entire history of the FCC, the agency said little and did less to change the bleak outlook. Indeed, many argued that the commission's spreading use of spectrum auctions made things worse as carriers spent far more than market conditions would suggest to be wise, thus damaging their overall financial strength.

That the industry's financial fortunes (if not all of its players) would revive was assured—telecommunication is too vital for it to fail or disappear. As use (driven especially by spreading broadband access to Internet services) rises, excess capacity will be taken up, and investment will return. The question is how soon this will take place.

See also RADIO CORPORATION OF AMERICA; SARNOFF, DAVID.

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telegraph By strict definition, a telegraph is any means, beyond the reach of normal conversation, for transmitting information at a distance. From time immemorial coded signals have been sent using sound over short distances and light over longer. Optical telegraphy has exploited smoke signals, mirrors, beacons, and, in systems reaching their highest development in France in the first half of the 19th century, semaphores.

The Chappe semaphore system eventually drove a network with 5,000 kilometers of lines, most radiating from Paris. The system was never effectively used at night, and fog or heat inversion during the day could disrupt its operation. Nevertheless, within the limits of its bandwidth and atmospheric conditions, the technology worked, and there were serious discussions before the U.S. Congress in the 1830s of building a line from New York to New Orleans using French technology. Samuel F. B. MORSE, working on an alternate technology, lobbied against this proposal.

During the 18th century, a number of individuals had experimented with sending static electricity over wires to cause pith balls to move at a distance or to create bubbles in chemical solutions. But static electricity is high voltage and low amperage, is vulnerable, like the Chappe system, to atmospheric disturbance, and drops off in strength quickly over distances. Progress in producing and storing low-voltage high-amperage electricity by Volta, and the development of a working electromagnet by Faraday and Henry, provided the scientific underpinnings of Morse's technology.

Using a \$30,000 subvention from Congress, Morse built a demonstration project from Washington to Baltimore and successfully inaugurated it in 1844. The telegraph reached San Francisco in 1861, and a permanent transatlantic link was established in 1866. Software also mattered. Morse code survives to this day, although the Telex and TWX systems of the mid-20th century used the 5-bit Baudot code (from which the modern term *baud* derives). ASCII, the 7-bit American Standard Code for Information Interchange, was introduced in 1966 and underlies 21st-century e-mail, fax, and Internet communication.

During its heyday, the electromagnetic telegraph had an impact in two major areas: military and diplomatic command and control, and the commercial transmission of high-value, timesensitive information. Commercial uses were most highly developed in the United States, where the telegraph was used for command and control in large business organizations, and for transmittal of high-value time-sensitive information in the newspaper and financial services industries.

See also FIELD, CYRUS W.

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Alexander J. Field

television industry Today television is a dynamic industry that is constantly evolving. There are more than 1,200 television stations on the air generating almost \$53 billion in television and cable advertising. At least 98 percent of American households have a television receiver, more than 76 percent of these households have multiple sets, and 68 percent subscribe to cable television. There are more television sets in the United States than there are bathtubs.

The evolution of television began more than 100 years ago, and it was not the invention of a single individual. The evolution of theory and application was mixed with fierce competitiveness as inventors and corporations recognized the technology as potentially profitable.

In 1873, Englishmen Joseph May and Willoughby Smith discovered that light falling on photosensitive elements produced a small amount of energy. G. R. Cary, in 1887, developed a proposal paralleling systems of the human eye. Not far from Cary's work in Boston, Alexander



D. E. Replogle giving the first public demonstration of talking moving pictures being transmitted over radio from the studios of the Jenkins Television Corp., Jersey City, New Jersey, 1927 (LIBRARY OF CONGRESS)

Graham BELL first tried to use light in the transmission of the human voice. Bell's experiments produced a system that was a forerunner to the facsimile. It was the French who first used the principle of "scanning," and scientist Maurice Leblanc who developed the scanning system to improve picture quality. In 1883, a German scientist, Paul Nipkow, developed the mechanical scanning device. The idea of scanning produced several mechanical apparatuses, some of which hung around until the mid-1940s.

The inventors primarily responsible for the 20th-century system were John Logie Baird, Charles Francis Jenkins, Philo Taylor Farnsworth, and Vladimir Kosma Zworykin. In the early 1920s Baird and Jenkins, working with mechanical systems, set the stage for electronic television.

According to George Shiers, the first public demonstration of television was conducted by John Logie Baird of Great Britain. The demonstration, conducted in March 1925, was held at Selfridge's Oxford Street department store. He named his apparatus the "televisor." His work almost became the English standard, but it was turned aside by the British government in favor of an electronic scanning system.

Charles Francis Jenkins was not far behind Baird in his television experimentation. Jenkins was an independent inventor and known in the United States as founder of the Society of Motion Picture Engineers (today, the Society of Motion Picture and Television Engineers, or SMPTE). In the early 1920s Jenkins was experimenting with what he called "Prismatic Rings." These were rotating disks similar to Baird's. Jenkins referred to his work as "radio photographs, radio movies and radio vision." Jenkins's first public demonstration came just three months after Baird's, in June 1925. Jenkins arranged for an influential gathering of visitors from the Washington, D.C., area to witness the event in his laboratory on Connecticut Avenue. The result produced glowing reviews in the press.

As technology began to increase the prospect of profitability, interest grew among developers and major corporations. Zworykin left Westinghouse for RCA because of the promise of financial backing. Zworykin did not join RCA until 1929, but RCA was active in research and did take out licenses for three experimental stations. Among Farnsworth's first experiments was the transmission of a dollar sign. The market crash of 1929 and its aftermath made financing a difficult task. Still, there were those who wanted to "cash in" on this new gadget called television. GENERAL ELECTRIC, with Ernst F. W. Alexanderson as chief television engineer, experimented with a mechanical scanning system. AT&T was experimenting under the leadership of Herbert E. Ives, a Bell Laboratories scientist. Philco started its own television work in 1928, but activities were modest until Farnsworth was hired in 1931 and put a station on the air for them. The Allen Du Mont Laboratories were organized in 1931. Peter Goldmark was the chief scientist for the COLUM-BIA BROADCASTING SYSTEM (CBS). He did not have the early start of some of the corporations, but CBS had an experimental station on the air in New York. By 1937 Goldmark had color television on the drawing board.

Farnsworth's story is a fascinating one. He first drew an electronic schematic for his high school chemistry teacher. That drawing was later a turning point in a patent suit between RCA and Farnsworth Television. It was September 7, 1927, when Farnsworth produced his first electronic television picture. The picture was a single vertical line. By 1929, he had the only working electronic television system in the world. Experiments

grew from a line to a triangle and a dollar sign, and the "smoke' within the laboratory was the first motion seen. Then photographs were added. In 1929, his wife, Elma "Pem" Gardner-Farnsworth, was the subject of demonstrations, making her the first woman to ever appear on television. The first electronic television broadcast transmission, outside of the laboratory, was in the summer of 1930, when Farnsworth was broadcasting between the Green Street Laboratory and the San Francisco Merchant's Exchange Building. Farnsworth's greatest triumph was the world's first general public demonstration of the electronic television system, on August 25, 1934, at the Franklin Institute in Philadelphia. This demonstration continued for several weeks as vaudeville skits and athletes paraded before the camera tossing a few balls and swinging tennis rackets. Drawing a great deal of attention were the night shots of the moon. The competition between Farnsworth and RCA was, as described by Farnsworth's wife, Elma, a "David and Goliath" confrontation. In this situation Goliath lost the patent case but won the free-enterprise war for corporate dominance of television.

Vladimir Zworykin was in charge of RCA's television development. He was a Russian immigrant who was first employed by Westinghouse but moved to RCA when the company showed greater interest in developing a television system. The backing of Sarnoff and RCA provided Zworykin with a strong foundation for his work through the difficult years of the Depression and World War II. Zworykin had convinced Sarnoff that he could complete television in two years and for \$100,000. He visited the labs of both Baird and Farnsworth. Because Zworykin and Farnsworth were both working with electronic scanning systems, they later found themselves embroiled patent-interference in cases. Zworykin's work was demonstrated at the 1939 New York World's Fair; with the force of RCA behind him, he became the most powerful innovator in the history of television.

Television evolved as AM radio began to mature, and headlines in the popular press were touting the marvels of a number of new inventions: the televisor, the telephone, the phonograph, and radio. Television was the latecomer, trying to obtain a position on the Roaring Twenties prosperity bandwagon. All of this was to television's advantage; the new technologies were at least somewhat related and provided significant financing for television's development.

The Federal Communication Commission's (FCC) slow pace resulted in considerable frustration among developers. They criticized the commission for being slow to establish television picture quality and color television standards. Those ready to manufacture and distribute television were stymied while others were given the opportunity to catch up. Farnsworth, for example, at the end of the 1930s had won the patentinterference case with RCA, thus forcing RCA to agree to Farnsworth's terms in the acquisition of his patents. However, this was also a success for RCA: With access to Farnsworth's patents, RCA was again ready to push forward toward standardization with the FCC. Not only did RCA have the system prepared for commercial operation, it had also been competitively successful in persuading the Radio Manufacturer Association to adopt its standards for production manufacturing.

World War II halted the development of television. As American participation in the war approached, the companies switched their emphasis from consumer development to defense manufacturing. At the end of the war there was renewed enthusiasm, corporations were ready to launch a national system, and local radio stations were ready to put local-market television stations on the air.

In 1948, the FCC realized that its frequencyallocation system for television was insufficient; taking note of other pressing issues, such as educational allocations, UHF, and color television, the FCC issued its "freeze." The order, coming September 20, 1948, again stalled further expansion of television while the FCC considered allocation issues. This was a brief boon to existing stations as they operated without competition, but frustrating to those who anxiously awaited FCC decisions before they could go on the air.

Of all the major corporations, CBS gained the most from this hiatus, including a competitive equilibrium with RCA. Although the decisions to be rendered from the freeze were primarily those of allocation, the issue of color television was also of importance. The CBS engineers had put forward a color-reproduction system, just as RCA was beginning to place monochrome receivers on the market. However, because of the incompatibility of the CBS color system with RCA's monochrome sets, CBS reasoned that with RCA black-and-white sets already in the marketplace, its color system would be precluded. The CBS strategy was to acquire FCC approval for its color system, thus blocking RCA's sale of receivers. This approach resulted in a second battle for broadcast standards-color standard versus black and white. Although CBS played the role of underdog, RCA already had the support of the manufacturers, and its public relations and manufacturing machinery were in place. Eventually, the FCC approved CBS's color system (October 1950), and then later rescinded its order approving the RCA system (December 1953). Although CBS had lost the initial battle for adoption of a color system, it did gain the time it needed to become competitive with RCA once the standards were announced. The technological and regulatory foundations for television had thus been laid.

The FCC's freeze was lifted on April 11, 1952, after nearly four years of frustration and contentious debate. The Sixth Report and Order led to the establishment of standards that form the foundation of the system we have today. The spectrum space was allocated for commercial television, with special channels set aside for educational telecasting. The number of VHF (very high frequency) channels allocated to most cities was increased (channels 2–13), and the FCC opened an additional 70 UHF (ultrahigh frequency) channels for commercial licensing. Individual allocations were made on a city-by-city basis, providing both VHF and UHF assignments. World War II and the freeze were major turning points in television's history. The industry was now on its way, with somewhat of a firm footing and business operational patterns in place as well. The issues of technological development, financing, and REGULATION were for the most part resolved. Programming for a growing audience was the next challenge.

Television had a significant advantage in the development of its programming—existing radio programs and local radio stations. The business of radio set the pattern of operation for television, both locally and nationally. Radio networks became radio-TV networks. Television's personnel were largely trained in radio. Radio stations became combined AM-TV, then AM-TV-FM operations as radio stations took out television licenses and provided financial support for both the early networks and individual stations. The local operational patterns of radio were adapted and superimposed on early television stations. Many radio pioneers were also television pioneers.

In the case of many local TV stations those on the air first had a distinct advantage in developing a strong affiliate relationship, a talent base, film resources, and live local programming. The actual expansion of the broadcast program schedule usually coincided with efforts to promote the sale of television sets. Local bars invested in sets to broadcast sporting events and to lure potential male viewers. A sometimes disproportionate number of first-day broadcasts from around the country featured wrestling or professional boxing matches surrounded, of course, by a lot of talk and ceremony. Sports grew from these local beginnings to national telecasts of football, baseball, and even bowling.

In most markets today, television news accounts for a substantial element of the station income. News began to be financially successful at a local level during the 1960s. WABC was later instrumental in developing a format that spread to local stations throughout the nation—"action news." It was known by different titles—"Eyewitness News," "Action News," "Happy Talk" but introduced a faster-paced, localized format to the audience. Critics today call it tabloid and often blame social science and research consultants for its spread. However, this local development has today become a major program genre.

The 1960s and 1970s marked television's accommodation and adjustment to changing technology and competition. It was the beginning of a number of trends that transferred the power base from the national networks to local stations and increased competition for the growing diversity of channels. Technology and DEREG-ULATION placed emphasis on the marketplace-a marketplace both local and national. The technology of recording, satellite, electronic news gathering (ENG), and electronic field production (EFP) helped pass control from the network to the local stations. Heretofore the local stations had been dependent upon the network to cover a nationally breaking news story. The local stations acquired their visual material from the network via the evening news and material fed to the station as delayed electronic feeds (DEFs). Today, the local station, via satellite and ENG/EFP technology, can cover a story no matter where it occurs. Local stations today use their elaborate production facilities not only to produce news, but also to create material for syndication. The talk shows, "produced in the facilities of . . .," are delivered via satellite rather than through a network. In effect, a multitude of alternative networks were being established contractually. Broadcast networks, syndication networks, cable, and satellite networks all link local program distributors to an audience.

Competition marks the chief characteristic of today's television. Cable delivery of television signals reached 68 percent of all U.S. households in 2002. And while broadcast television still boasted a 99 percent household penetration rate, cable, video cassette, digital video disks, and satellite-delivered programming all are eating away at the traditional network and local station rating base. New technology has provided more viewing choices. High-definition television, the home theater, and the convergence of the computer with video technology are just beginning to inch into market shares. The winner in these races will ultimately be the viewers as they are presented with more choices, programming on demand, and a more efficient, quality technology.

See also SARNOFF, DAVID.

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Donald G. Godfrey

Tennessee Valley Authority (TVA) Government owned power authority established by Congress in May 1933 in order to develop the resources of, and provide electricity for, the Tennessee River Valley. The TVA became one of several organizations referred to as GOVERNMENT-SPONSORED ENTERPRISES.

The authority was designed to embrace government-sponsored power projects that had never been completed. The Wilson Dam at Muscle Shoals, Alabama, was partially built during World War I to develop both power and nitrates but was never finished. When private interests, led by Henry FORD, offered to buy the property from the government at discount prices, advocates of public power companies lobbied heavily for government intervention. The price of electric power varied greatly during the 1920s and 1930s, depending upon geographical location and the type of ownership of the actual power plants. Power produced by public enterprises was generally cheaper than that provided by private companies. Senator George NORRIS was an outspoken critic of many of the privately owned power companies and finally helped persuade the new Roosevelt administration to create the TVA in order to keep the power generation facilities out of private hands.

The TVA originally had three directors: Harcourt Morgan, David Lilienthal, and Arthur Morgan. In the 1930s, the company helped redevelop the multistate area by replanting depleted forests, developing fertilizers, and improving crop yields. Electricity supplied by its dams and generators helped improve the quality of life for the inhabitants. Electricity provided by the TVA, measured in cents per kilowatt hour, proved to be the cheapest in the country after the agency became fully operational. In the 1940s, during World War II, the company embarked on a massive power generation plan. By the end of the decade, it had become the largest supplier of electricity in the country.

In the 1950s, the TVA was granted congressional approval to issue bonds in its own name in order to finance its capital investment projects. It continued to build power plants and by the 1960s was the lowest priced supplier of wholesale electric power. By the late 1990s, it was ranked as the third-cheapest supplier of electric power. It remains a government-sponsored enterprise, although its debt instruments are sold to the investing public.

See also NEW DEAL.

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ticker tape Thin paper tape, mounted in roll form, upon which was printed data on trades on the NEW YORK STOCK EXCHANGE (NYSE). Beginning in the 1870s, two entirely separate telegraph networks served the financial services industry. The first was a point-to-point system connecting branch brokerage offices with the floor of the exchange. Over these wires, customers sent orders to trade and received confirmation of execution. The second was a broadcast system. After execution of each trade, details were broadcast to brokerages and other subscribers, where the data were received over a specialized printer known as a stock ticker.

A ticker was first introduced in 1867, and was dramatically improved upon over the next two years by Thomas A. EDISON. The device printed



Stock ticker tape machine (MUSEUM OF AMERICAN FINANCIAL HISTORY)

out a stock symbol, how many shares of that stock were traded and at what price, producing a linear barrage of information whose form is familiar to this day, even though individuals now watch it at the bottom of their television screen or on their computers. Prior to the introduction of the computer and streaming prices, "reading" the ticker tape was a Wall Street art practiced by those who would trade stocks based upon how they interpreted prices coming across the tape.

These two networks enabled million-share days as early as 1886, giving rise to a technological regime that tested its limits in October of 1929, when on one day more than 16 million shares were traded, a level not reached again until 1968. In that year the regime basically broke down and was replaced with one that today routinely accommodates trading volumes two orders of magnitude higher. The tape also became consolidated in the 1970s as part of a stock market reform aimed at providing the prices of all traded stocks on a consolidated tape, not just those of the NYSE and the AMERICAN STOCK EXCHANGE.

Dropped out the windows of New York skyscrapers, used ticker tape has assumed an important place in celebratory American iconography, serving as a distinctive visual flourish when the nation's financial capital honored national heroes, such as Charles Lindbergh after his transatlantic flight and John Glenn after he orbited the Earth.

See also STOCK MARKETS.

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Alexander J. Field

Time Warner An entertainment and communications company formed by the merger between America Online (AOL) and Time Warner Communications in 2001. The merger was the largest ever recorded and combined an Internet company founded in the 1980s with an older, established publishing and broadcasting company that was a mainstay of the entertainment industry.

The older of the two companies was Time Warner, originally founded by Henry Robinson Luce (1898–1967). Born in China to missionaries, Luce was educated at Yale before entering the publishing business. He and Briton Hadden founded *Time* magazine in 1923, and it became the basis for a successful publishing empire. *Fortune* was founded in 1930 and became a leading business magazine. A year later, a radio program, *The March of Time*, was begun and continued until 1953. Luce also developed *Life* magazine as a weekly, beginning in 1936. It ceased publication but resumed in 1978 as a monthly. Other notable periodicals included *House & Home* (1952) and *Sports Illustrated* (1954).

In addition, the company published more than 30 other magazines and owned recording companies and book publishers. It also was the second-largest provider of cable TV operations, including Home Box Office and CNN.

AOL had earned a different reputation. It was founded in 1983 as an Internet provider and game company and had witnessed spectacular growth under the aegis of Steve Case, who joined the company soon after its inception and became CEO in 1993. By the late 1990s, when it began adding advertising to its Web pages, AOL had 26 million paying subscribers and was the world's preeminent on-line service. Although its tangible assets were much smaller than those of Time Warner, its stock market valuation was more than twice that of the older company. The original deal was valued at \$156 billion, offered by AOL for Time Warner stock and was the largest stock transaction ever proposed.

Only a year after the deal was announced, the value had dropped to \$103.5 billion when it was finally approved by the FEDERAL COMMUNICATIONS COMMISSION, the regulatory agency charged with approving telecommunications MERGERS. The new company was the largest entertainment com-

pany in the world. Shortly after the merger, it suffered the worst earnings loss in corporate history, experiencing a \$100 billion loss in 2002 as a result of new accounting rules put in place before its merger was complete.

The company's performance after the merger did not measure up to expectations, and talks were begun to divest some of its holdings, including separating the two companies again in order to raise the stock price and restore investor confidence. Finally, the name AOL was dropped from the logo, and the company became known as Time Warner.

See also INTERNET.

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Treasury bonds Fully marketable long-term debt of the U.S. Treasury, issued almost immediately after adoption of the Constitution in 1789 to consolidate the debt of the former colonies. They have been issued with varying degrees of frequency ever since. Bonds are different from Treasury bills, which are issued for periods of less than one year.

In the 1790s, the bonds were sold on the early stock exchanges. During the War of 1812, the Treasury employed a small syndicate of wealthy merchants, including John Jacob ASTOR and Stephen GIRARD, to help distribute bonds, but the merchants exacted such a high price for their efforts that the Treasury was criticized for being too lax in monitoring debt sales. Similar criticisms arose during the Mexican War, when bonds were sold again and private bankers were used to distribute the bonds. Congressional critics maintained that they were benefiting at the Treasury's expense.

When the Civil War began, the Treasury again needed to raise funds and employed Jay Cooke & Co. to distribute the bonds nationwide. Despite Cooke's success at relatively thin margins of profit, criticism again arose, but the Treasury had no effective mechanism for distributing bonds other than employing private bankers. Throughout the 19th century, the method of employing private bankers to sell bonds to the public remained the same. Several private banking houses, notably J. P. Morgan & Company and J. & W. Seligman & Company, made substantial profits and reputations aiding the Treasury in its funding needs.

During World War I, the Treasury sold its massive Liberty loans (bonds) to the public directly, avoiding bankers and the costs associated with employing them. The same method was used during World War II as well, when the borrowing requirement ballooned to the largest in history. During the war, Treasury bonds could also be purchased by banks with deposits, allowing the banks to avoid reserve requirements. The provision was lifted once the war was over.

After the war, the Treasury began auctioning its new issues to its recognized primary dealers on a best bid basis, again avoiding underwriting costs. As the federal debt became larger, the auctions became the most cost effective method of raising funds that the Treasury had ever employed. Dealers in Treasury bonds wee not paid an underwriting fee but profited only on the difference between auction price and the price at which the bonds could be sold to investors.

The amount of bonds that can be issued by the Treasury is subject to congressional debt limitation. In 1977, Congress authorized the Treasury to issue a 30-year bond as its maximum maturity and in 1983 allowed the FEDERAL RESERVE to authorize stripping coupons off of Treasury bonds to create STRIP (Separate Trading Receipts of Interest and Principal), or zero coupon bonds. The maturities on these bonds often are changed according to Treasury funding needs. During the Clinton administration, the Treasury indicated that it was shortening the maturities of bonds issued, but deficits would later require the 30-year Treasury bond to be revived.

In the 1990s, the Treasury began issuing Treasury Inflation Protected Securities, or TIPS. This was the first time that the Congress allowed the Treasury to index bonds to inflation, a practice common in some other industrialized countries.

See also Cooke, Jay; Morgan, John Pierpont; Salomon Brothers; Seligman & Co., J. & W.

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Turner, Ted (1938–) *media executive* Robert Edward (Ted) Turner was born in Cincinnati, Ohio, on November 19, 1938, the son of a former Mississippi cotton farmer. In 1947, he accompanied his family south to Savannah, Georgia, where his father acquired a billboard advertising business. Turner, displaying a trademark rebelliousness, dropped out of college and briefly enrolled in the Coast Guard. In 1963, he joined his father's firm just as it approached insolvency. The two Turners skirmished repeatedly about keeping the company, and he was aghast when his father committed suicide. Forced into the role of executive officer at 24, he quickly turned the company around by dint of hard work and imaginative promotions. By 1970, Turner, against the advice of friends and authorities, decided to enter the media business by acquiring a bankrupt Atlanta broadcasting station. Again, he surprised the pundits by turning a profit through creative programming: old movies and television shows, leavened throughout with sports broadcasts. Turner amassed a small fortune in the process, and by 1976, he was able to purchase the Atlanta Braves and the Atlanta Hawks, two local athletic teams. His ownership enabled him to ingeniously broadcast games without paying broadcast rights.

But mere success would not placate this restless, visionary entrepreneur. Wishing to expand his viewing franchise on a national basis, in 1975 he built one of the first ground stations capable of using new satellite communications. This, in turn, gave rise to the first superstation, modestly christened WTBS for "Turner Broadcast System." It was another bold venture that succeeded against expectations, and within three years it was beaming messages into 2 million homes across the nation. Turner nonetheless remained unsatisfied, and he turned to developing a personal project: a 24-hour cable news network providing live coverage of breaking events. When CNN premiered in 1980 the experts scoffed, but within two decades it was carried in almost 80 million households. Its success subsequently occasioned the new Headline News Network, which proffered succinct news summaries every half-hour. Both efforts reconfirmed Turner's reputation as a mercurial and farsighted media genius. Five years later Turner decided he was strong enough to compete with the media giants, although he failed in his attempt to take over CBS. Undeterred, he then acquired the entire film library of MGM/UA in 1986, whose repertoire included some of the most famous movies of all time, for \$1.6 billion. Charges then surfaced that the amount was vastly overinflated; in fact, Turner was close to BANKRUPTCY for several years and had to be bailed out by a consortium of cable TV companies. But within three years he was enabled to start a second cable network, TNT, whose sole purpose was to showcase the classic films in his possession. This was another solid success for Turner, although he was roundly criticized by the Hollywood film establishment for colorizing classic black and white movies. Ruffled feathers notwithstanding, his

boldness and risk-taking reaped considerable dividends for the owner.

Turner, a stormy, tempestuous personality, enjoyed a spate of failed marriages before settling down with movie star and political activist Jane Fonda in 1991. This seemed to exert a calming effect on his personal life and his business ambitions, for in 1995 he sold TBS to TIME WARNER, Inc., for \$7.5 billion. The move created the world's largest media conglomerate, with literally thousands of films, cartoons, and other media assets in its inventory. Moreover, Turner willingly served in a subordinate position as vice chairman of the cable division. And, having amassed a mountain of wealth, he embraced the cause of philanthropy and pledged \$1 billion to the United Nations-the largest such donation in history. He then typically challenged others so disposed to be as generous. Whatever his motives, the outspoken Turner remains a media legend and one of the most influential entrepreneurs in broadcast history.

See also TELEVISION INDUSTRY.

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turnpikes Roadways built mostly in the eastern states at the end of the 18th and in the early 19th centuries, designed to provide roads suitable for commerce and travel. Before the turnpikes, no roads existed linking most cities and towns, and these roadways were the first attempt to link major centers in the country. Because of a convergence of other factors, mainly the development of canals and the RAILROADS, turnpikes were of limited use by the 1840s. The first turnpike built in the United States by a private company, the Lancaster Turnpike, was also the country's first hard-surface roadway, linking Lancaster, Pennsylvania, to Philadelphia in 1792. Previously, turnpikes were built by states and were usually unpaved roads that were the beginnings of the American infrastructure. Virginia authorized a turnpike run by the state in 1785. But the high costs and the potential for lucrative tolls led many private companies to be formed to build the roads. Most of the turnpikes were built by 1825, and many of the original routes are still in existence, such as the Boston Post Road from New York City to Boston and the Albany Post Road from New York City to Albany.

Many of the turnpike companies became the first publicly held corporations in the country, selling stock to pay the expense of building the roads. The turnpikes held exclusive right to the territories they crossed and also held the right of eminent domain so that they could be built without obstruction. But the rapidly developing canal and shipping industries provided fierce and cheaper competition for the turnpikes. Even the paved roadways were uneven, often being paved with wood planks or other materials that were of rough quality.

Often it was cheaper to ship goods in a roundabout manner rather than use the turnpikes because of their expensive tolls. Despite the fact that turnpikes were often the shortest distance between two points, the tolls charged by their builders proved prohibitive to shippers, many of whom would use circuitous routes taking more time because shipping by water routes was still cheaper. The turnpikes that eventually failed financially were taken over by their respective states.

Canals also fulfilled a function that turnpikes were incapable of filling. They allowed large quantities of goods and commodities packed on barges to cover long distances relatively cheaply. The ERIE CANAL allowed shippers to transport goods from the Great Lakes to New York City and beyond relatively quickly. The turnpikes were, by contrast, slower and less reliable. As a result, turnpike development slowed considerably once the canals became established.

See also Conestoga wagon; Interstate Highway Act.

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typewriter After the introduction of movable type in the Middle Ages, the typewriter was one of the most important developments in print. Because of its slow introduction, it was not until the 19th century that the typewriter became well developed and used in business on a regular basis. It was, however, the single most important invention for business communications until the advent of the personal computer.

The concept of a typewriter had existed for several centuries before Christopher Sholes, Carlos Glidden, and Samuel Soule patented the first machine in 1867. The machine was designed primarily by Sholes. They sold the rights to an investment group, which in turn sold them to Remington & Sons, the firearms manufacturer, which produced the Sholes and Glidden Typewriter in 1873. The machine did not employ the same sort of keyboard that typewriters employ today. It wrote capital letters only on what is called the QWERTYUIOP keyboard. The original machine produced an "up-strike" design, in which the key strikes upward when pressed. The technique meant that the typist could not see what was being typed and was referred to as the "blind writer."

In order to avoid jamming of the keys, the machine was designed with this unusual keyboard so that the most commonly used letter keys would not jam. But the invention did not enjoy instant success. Initially, it sold only about 1,000 units per year and cost \$125. Five years later, Remington designed its Number 2 machine, which had many improvements over the original model, including upper and lower case letters using a shift key. It still took almost 10 years for the Number 2 to become popular, but when it did, the machine became a staple in the American office.

Many other attempts were made both in the United State and abroad at perfecting the machine. The Caligraph Number 1 was the second typewriter to appear in the United States, in 1880. Its Number 2 model had a larger keyboard featuring both lower and upper cases rather than the shift key used by Remington. In 1884, Hammond used a type-shuttle design that had a curved keyboard with its own unique key arrangement. Hammond type-shuttles were made in numerous different typefaces and languages. It also produced the Varityper, a standard office type-setting machine that was the forerunner of today's computer-based keyboards. Blickensderfer introduced its "scientific" keyboard in 1893 and used yet another typing mechanism known as a typewheel. It also produced the first electric model in 1902 using the same principles as the IBM Selectric, which came on the market more than 40 vears later.

Although many rivals challenged Remington, none seriously threatened it until the introduction of the first "visible" typewriter by Underwood. Its Number 1 machine, designed by German inventor Franz Xavier Wagner, was considered to be the first modern typewriter. Its front-strike design finally made the type fully visible to the typist. Other models followed, including the Number 5, which sold millions over its 30-year life.

During World War II, INTERNATIONAL BUSINESS MACHINES introduced the Selectric model, an



Woman seated at an Underwood typewriter, ca. 1918 (LIBRARY OF CONGRESS)

electric version that finally revolutionized office procedures based upon the old Blickensderfer model. It quickly dominated the office machine segment of the market, while Smith Corona introduced machines for personal and office use. The typewriter began to be replaced by the personal computer in the 1980s, since the PC was faster and also used the same keyboard design.

See also OFFICE MACHINES.

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Union Pacific Railroad The railroad company that helped build the transcontinental link connecting the East and West Coasts in 1869. Impetus for creation of the company was given by Congress in the Pacific Railroad Act of 1862, which authorized the building of a rail line by private carriers that would connect both coasts. Throughout its early history, the company was plagued by scandal as well as engineering success.

The company that completed the massive building job was founded by Oakes Ames, Oliver Ames, and Thomas Durant. They invested some of their personal fortunes into an effort that was floundering until they became involved. They were charged with building the eastern link of the rail connection westward from Nebraska while the Central Pacific Railroad built the western link eastward from California. Both companies took over the job from earlier companies that had started building lines but never completed them. The building took six years and occupied more than 20,000 men, mostly immigrants from Europe and China. It became the most daunting engineering and construction project yet undertaken in the United States.

One river, the Weber, had to be crossed 31 times. The two lines were connected at Promontory Point, Utah Territory, on May 10, 1869. The original trip from New York to San Francisco took 10 days.

After the work was complete, the Crédit Mobilier scandal erupted concerning the financing of the railway. In 1872, it was revealed that the construction firm that built the road, named after a French finance company and bank, had embezzled millions of dollars of governmentprovided funds, raising the cost of construction substantially. The result left the Union Pacific heavily in debt, and it was forced into BANK-RUPTCY in 1893, during a depression that also forced many other RAILROADS and businesses to close. Jay GOULD controlled the railroad until 1892, when he died, passing ownership to his son George. The company was resurrected as the Union Pacific Railroad Company by E. H. HARRI-MAN, who owned the Illinois Central at the time; others invested \$110 million in the railroad in 1897, and it became a viable company again.

In 1901, the railroad bought the stock of the Southern Pacific and merged it with its own operations. After Harriman's death, UP was forced to relinquish the Southern Pacific by the U.S. Supreme Court in 1913.

In the 1920s and 1930s, the railroad began to diversify its holdings, first by opening the Sun Valley resort in Idaho in 1936 and then by moving into the trucking business. It also premiered the "City of Salina," a high-speed diesel train that featured luxury dining and touring cars. In 1969, the Union Pacific Corporation was formed as a HOLDING COMPANY, and the railroad became one of its holdings. By 1971, the company effectively was out of the passenger business and concentrated exclusively on freight.

In 1980, the Union Pacific, Missouri Pacific, and Western Pacific railroads filed merger applications with the INTERSTATE COMMERCE COMMIS-SION, and the consolidation was approved two years later. It also purchased other railroad companies, including the Chicago & North Western, which was completely absorbed in 1995. The company recorded \$1 billion in revenues in 1999.

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United Automobile Workers (UAW) Founded in the mid-1930s, the UAW challenged managerial prerogatives in automobile factories and would become one of the most powerful labor unions in the United States. The UAW was, in a way, a byproduct of mass production techniques pioneered by Henry FORD in the 1910s. By striving to make jobs simple and deskilled, Ford and other promoters of highly efficient production inadvertently helped create an enormous number of potential recruits to the industrial unions that formed during the Great Depression. During the Depression, auto production plummeted from 5.3 million cars in 1929 to 1.3 million in 1932. Likewise, the number of autoworkers dropped during the same period from 450,000 to 250,000. Employment totals varied throughout the 1930s, however, and were actually on the upswing in 1936, when the UAW began to gain momentum.

The UAW held its first convention in 1935 in Detroit as part of the American Federation of Labor (AFL), which consisted mainly of craft unions for skilled workers. Historically, the AFL had not been enthusiastic about organizing the masses of unskilled production workers, who were mainly first- and second-generation European immigrants and rural internal migrants from the Midwest, the upper South, and Canada. UAW activists envisioned a union that encompassed all automobile workers, skilled and unskilled, but there was much competition in the early years for the allegiance of the work force. Many skilled workers remained reluctant to make common cause with unskilled employees, and there were disagreements about whether autoworker unions should be limited to individual companies or should represent all workers in the industry.

The most important factors in the rise of the UAW were the living and working conditions of unskilled autoworkers. Surprisingly, wages were not the workers' main concern. Instead, the arbitrary and often punitive power of foremen figured most prominently in workers' complaints. Foremen controlled hiring, firing, transfers, layoffs, rehiring, and even bathroom breaks. More than anything else, workers wanted job security, with hiring, layoffs, and transfers determined by seniority rights independent of a foreman's whims. Workers also wanted input into the speed and content of their particular jobs. In response to extremely difficult market conditions during the Great Depression, automakers had increased the speed of production on assembly lines and had demanded that workers meet higher production quotas. From the workers' perspective, this quest for greater productivity had increased stress, fatigue, and the potential for injury to unacceptable levels. Workers wanted to be treated like human beings, not like purchased labor, but if they were to gain redress for any of these grievances they would have to impinge on what had traditionally been management's domain.

Adding to the complexity of the situation, a number of the UAW's most effective organizers, such as Wyndham Mortimer and Bob Travis, were members of the Communist Party, which from 1936 to 1939 adopted a strategy of working with non-Communist, progressive constituencies in American political life. By virtually all accounts these Communist organizers worked tirelessly in the interests of autoworkers, and there is little evidence to suggest that many of these workers desired the overthrow of power relations in the workplace or in the larger society. Nevertheless, the presence of Communists in the UAW helped auto companies and other antiunion forces argue that the union was un-American and was not acting in the best interests of its potential members.

The UAW, however, including Communists, argued in response that they had federal law on their side. In 1935, President Roosevelt had signed the NATIONAL LABOR RELATIONS ACT (NLRA, also called the Wagner Act after its chief sponsor, Senator Robert Wagner from New York), which guaranteed the right of workers to organize into unions without interference from employers. But few employers obeyed the law. Certain that the NLRA would be declared unconstitutional by the Supreme Court, major automakers continued to fire anyone suspected of harboring union sympathies. In response, the UAW embraced a strategy, the "sit-down" strike, designed to fight lawbreaking with lawbreaking. By sitting down in factories and refusing to leave until demands were met, workers violated trespassing laws but also prevented management

from using its regular arsenal of strike breaking tactics. It was impossible to maintain production with strike breakers when plants were occupied—physically attacking sit-down strikers would likely result in enormous damage to machinery.

Led by Mortimer and Travis, the UAW used this tactic effectively in Flint, Michigan, during the winter of 1936–37. At least 80 percent of Flint citizens relied on GENERAL MOTORS for their livelihoods, but until the sit-down strike, which began on December 30, 1936, only a few workers had been willing to risk their jobs and associate openly with the UAW. By February 11, 1937, however, after groups of committed workers successfully shut down production of Chevrolet and GM suffered significant loss of profits and market share, the corporation was forced to recognize the union. Immediately, thousands of GM employees shook off their fear and joined the UAW.

Within weeks, Chrysler capitulated to unionization with only mild resistance, while Ford continued to fire thousands of workers annually for union activity. Indeed, in 1937 Ford security personnel administered a bloody beating to four UAW officials, including future UAW president Walter REUTHER, outside the River Rouge Plant in Dearborn, Michigan. Despite widely publicized photographs of the attack, Ford violated the National Labor Relations Act with impunity until 1941, when it was finally forced to recognize the union. The UAW also worked, with mixed success, to organize employees at the hundreds of parts suppliers, largely in the Midwest, that were vital to the auto industry.

The UAW's first contracts with GM and Chrysler were slender and not very specific, guaranteeing mainly that the union would be the sole bargaining agent for employees, that seniority would determine layoffs and rehiring, and that multistep grievance procedures would be used to resolve disagreements. It remained to be seen whether any of these provisions would help resolve workers' grievances. Having a voice at all, however, was enough to increase dues-paying membership in the UAW to 220,000 by September 1936. That number rose to 375,000 by August 1937.

Within a year, however, the UAW barely existed. Auto production slumped from 4 million in 1937 to 2 million in 1938. The auto work force, hence union membership, dropped accordingly. By mid-1938, the UAW had only 90,000 dues-paying members, and by early 1939, only 500 members in good standing remained in Flint. Bitter disagreements within the UAW leadership, often about the role of Communists, also weakened the union, while automakers cracked down on workers who, unwilling to wait for grievance procedures to run their course, engaged in unauthorized "wildcat" strikes. To many, it looked like the union might disappear.

World War II saved the UAW. Long before the Japanese attack on Pearl Harbor, wartime production had begun to revive the nation's economy. The war economy eventually created virtually full employment and allowed the UAW to reassert itself as the sole bargaining agent for autoworkers. By mid-1940, the UAW had contracts covering more than 410,000 workers. UAW membership surpassed 1 million by 1945, including large numbers of women and African Americans who entered the industrial work force during the war, as well as many workers in the aerospace and farm implement industries.

During the war, UAW leadership emphasized the patriotism of its 250,000 members serving in the armed forces and its production workers turning out war materiel. At the federal government's urging, the union signed a no-strike pledge for the duration of the war in return for the automatic check-off of union dues and a "maintenance of membership" clause designed to guarantee a strong union presence in defense plants. UAW leaders also argued that since the government placed ceilings on workers' wages, it should also limit corporate profits and businessmen's salaries. Although union officials were never convinced that businessmen and corporations sacrificed equally with labor, the UAW supported the continuation of a government-business-labor partnership in organizing the American economy after the war. UAW leaders hoped to avoid any postwar recession, like the one that followed World War I, and they hoped that the labor movement would have a formal, permanent voice in postwar economic affairs.

Those dreams did not materialize. Auto companies strongly opposed postwar government control of the economy, especially in partnership with the labor movement, and in the emerging cold war any plan with even a hint of central planning had little chance of survival. The UAW's GM director, Walter Reuther, launched a showdown with GM in late 1945, demanding a 30 percent wage increase to compensate for wartime inflation while challenging GM not to raise the prices of its automobiles and to open its financial records if the corporation claimed that it could not afford to do so. In this strike, GM held the line against having to share financial information with the union and escaped with having to pay far less than the 30 percent wage increase. All the UAW could hope to gain in the future, it seemed, was increased wages and benefits from automakers.

In the postwar boom, this often seemed possible. Profits in the auto industry soared, and wages rose dramatically. In addition, in the early postwar years GM offered an Annual Improvement Factor (AIF) and an annual Cost of Living Allowance (COLA) to allow workers' incomes to rise with productivity and not be eroded by inflation. Ford and Chrysler followed suit. During the 1950s, the UAW negotiated health benefits for its members, as well as Supplemental Unemployment Benefits that protected workers against financial ruin during layoffs and increased the incentive for companies to maintain high employment. The UAW sought federally funded pensions, unemployment insurance, and health benefits. The union thought the Big Three would support this expanded federal role because government responsibility would substantially reduce the automakers' financial commitments. GM, Ford, and Chrysler, however, feared an increasing role for government in the economy and supported company-paid benefits instead. This private commitment would vex managements in later decades when large numbers of autoworkers retired under UAW contracts and continued to expect their benefits. (In 2003 contract negotiations, for example, the UAW bargained for about 300,000 active autoworkers and more than 500,000 retirees.)

In order to bargain with large auto companies and monitor the expanding details of contracts, the UAW became highly centralized, depending more on skilled attorneys than shop-floor activists. Coupled with the influx of new employees after the war who had no experience working without a union and might have taken their working conditions for granted, the crusading, reforming spirit of the early UAW seemed to wane. A number of union critics argued that the UAW too often appeared to side with management in opposition to the interests of its members.

Still, throughout the 1960s the union appeared to have achieved many of its early goals-workers had far more job security than in the 1930s, they had some input over the speed and content of their jobs (although line speed and safety grievances increased in the 1960s), and they were buffered from the wildest swings of the economy. But that was true only for those whose jobs continued to exist. Automation in the 1950s eliminated thousands of jobs, mainly the dirtiest and hardest positions that had generally been relegated to African Americans. Moreover, plant relocations began in the 1950s, moving many auto jobs away from Detroit and to the suburbs, to rural areas in the Midwest, and to the South. Union membership remained between 1.1 and 1.5 million until the late 1960s, but in future decades the union's inability to control the placement of factories would decimate its membership, just like job losses had devastated the city of Detroit.

In addition to plant relocation, foreign competition began making inroads into the U.S. auto market. As early as 1959, foreign cars constituted 10 percent of domestic sales. European and Japanese competition would intensify after the oil crises of 1973 and 1979, when the large, "gas guzzling" cars produced by GM, Ford, and Chrysler fell out of favor. By 1980, Detroit factories were producing only half of what they had in the mid-1970s, and the UAW accepted wage concessions to help survive the crisis. Working with management, however, did not guarantee any favors in the future. Eventually, the UAW lost members as American auto companies transferred much work to new factories outside the United States, often in Mexico. Meanwhile, foreign car companies began building factories in the United States and managed to stave off organizing efforts by the UAW, generally by offering UAW-style wages and benefits to their workforces. Although some argue that the UAW priced the labor of its members out of the global auto manufacturing market, it is unclear what the long-term ramifications will be from the decline in unionized manufacturing jobs in the United States. After all, by increasing the purchasing power of its members, the UAW was central to post-WWII American economic prosperity.

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Daniel J. Clark

United Fruit Company Boston-based banana producing and marketing company. In 1870, Captain Lorenzo Dow Baker made an experimental import with bananas he bought in Jamaica for a shilling and sold in Jersey City for \$2 a bunch. After this success, Baker joined Bostonian entrepreneur Andrew Preston and created the Boston Fruit Company. This company owned a large fleet of steamships that, with time, became the largest private fleet in the world—the Great White Fleet.

In 1899, another Bostonian entrepreneur, Minor C. Keith, approached Preston and Baker and proposed to merge their company with his business. Keith had built railways in Central America and Colombia, owned lands in those countries, and was also involved in the banana export business. They agreed, and on March 30, 1899, the United Fruit Company was born.

The new company had Preston as president and Keith as vice president. Keith had his railroad network and plantations in Central America, plus the market in the U.S. Southeast, and Preston grew bananas in the West Indies, ran the Great White Fleet, and sold to the U.S. Northeast. As the company grew, Keith continued with his railroad projects in Central America.

United Fruit needed to assure a steady output of bananas to its consumer market in the United States. This was a difficult task because bananas, contrary to other goods, rot quickly. Given that they could not be produced in the consumer markets, the company developed an impressive production and distribution network between the tropical lands in the Caribbean and the United States. This included plantations (with health and housing infrastructure), railways, ports, telegraph lines, and steamships.

In 1900, United Fruit owned 212,394 acres of land, while in 1954 it owned 603,111 acres scattered in Central America and the Caribbean. The company also established the Fruit Dispatch Company, a subsidiary in charge of distributing bananas in the United States. United Fruit was a major shareholder of the Hamburg Line, a German shipping company, and also bought 85 percent of the shares of the British banana import and shipping company Elders & Fyffes, with which United Fruit assured itself a privileged position in the British market. By 1928, United Fruit had bought 99 percent of Elders & Fyffes shares. In 1913, the company also created the Tropical Radio and Telegraph Company to keep in constant communication with its ships and plantations. Finally, United Fruit quickly eliminated its smaller competitors such as the Atlantic Fruit Company and Cuyamel Fruit Company.

The company's expansion was facilitated by a business-friendly environment in Central America. Before World War II, United Fruit counted on dictatorships that repressed labor unionism and gave generous concessions in terms of land grants and tax incentives. In some of these countries, United Fruit was the major employer, was the largest investor in infrastructure, and was permitted the international marketing of the country's main export. Countries such as Guatemala, Panama, and Honduras depended on bananas for more than 60 percent of their total exports. Because of this, the local governments encouraged the company's operations in their national territories.

After World War II, the company faced serious threats that obliged it to change its internal structure from a producing company to a marketing one. The rise of nationalistic governments and stronger labor unionism in Latin America made its investments in the region riskier. In 1954, when Guatemalan president Jacobo Arbenz attempted to expropriate some of the company's lands, the Honduran banana workers went on the biggest strike in that country's history, and the U.S. government sued the company for failing to comply with antitrust legislation. These events made United Fruit's shareholders think that land ownership in Central America increased the company's risks, so in the 1960s the company gradually got rid of its plantations and RAILROADS and concentrated its efforts in the international marketing of bananas.

With demand for bananas decreasing in the U.S. market after the 1950s, United Fruit diversified its operations to processed food in the 1960s. This transformation went further when the company merged with AMK Corporation and created a food conglomerate in 1970 called United Brands Company. In 1989, this conglomerate changed its name to Chiquita Brands International, Inc.

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Marcelo Bucheli

United Mine Workers of America America's mid-19th-century coal industry depended heavily on skillful immigrant colliers from the British Isles. Proud of their mining knowledge and skills, these British immigrants also brought a tradition of craft associations and proved to be a motivating force behind the formation of miners' unions in the United States. The first British miners thought of themselves as craftsmen with a role equal to that of owners, but the growth of modern capitalism had intensified the separation between capital and labor. Labor constituted the major expense of mine operations, and, consequently, owners tended to reduce wages in an effort to remain competitive in the volatile coal market. Potential union leaders soon realized the need to abandon the craft association ideology for industrial unionism. Mine operators, embroiled in a fiercely competitive market and fearful that unionization might limit their ability to survive, developed methods of resistance that characterized the industry's antiunion efforts well into the 20th century: operator associations, private police, "blacklisting" of unionists, and legal actions based on the right to control and manage private property.

Despite intense operator resistance, miners experienced an expanding collective conscious-

ness during the 1880s. Yet rivalry continued among two associations, the National Federation of Miners and Mine Laborers and the National Trades Assembly No. 135 of the Knights of Labor. Attempting to end dual unionism, the two groups met at Columbus, Ohio, in 1888 and organized the National Progressive Union of Miners and Mine Laborers (NPU). But rivalry continued, and in January of 1890, again in Columbus, a conference reorganized the NPU into the United Mine Workers of America (UMWA), with an American Federation of Labor industrial union charter.

The new union hoped to resolve such issues as fluctuating wages, payment in company scrip, and private police forces that regulated everyday life, but also realized the need to assist operators in stabilizing a highly competitive market. Coal suffered from overproduction and intense price competition between regions. Wages constituted about 70 percent of production costs, and miners often suffered from market instability. Unfortunately, the economic downturn of the early 1890s led to wage cuts and strikes that nearly bankrupted the fledgling UMWA.

Union efforts rebounded with fiscal recovery and led to the first major success. In 1898, operators of the Central Competitive Field (western Pennsylvania, Ohio, Indiana, and Illinois) met jointly with the union and signed the Central Competitive Agreement. This "Interstate Agreement" gave miners an eight-hour day and standard wage rate, and the victory helped the UMWA expand membership from 33,000 in 1898 to a quarter-million in 1903. With this success, union president John Mitchell next decided to organize the anthracite coalfields of western Pennsylvania; the subsequent 1902 strike precipitated a national crisis. A five-month deadlock led to shortages and higher coal prices, resulting in President Theodore Roosevelt's first-ever federal intervention in coal's labor conflicts.

The 1902 anthracite strike opened the market for "smokeless" bituminous coal from nonunion areas. Mining expanded rapidly outside the Central Competitive Field, and operators in the newly opened areas embraced severe antiunion measures. In the first two decades of the 20th century, UMWA strength and resources proved unequal to private police and operator use of state-vested authority. This was particularly true in West Virginia and Colorado and led to the killing of unarmed workers in episodes at Holly Grove and Ludlow. Attempts at unionization produced two major mine "wars" in West Virginia, but the UMWA still failed to make progress outside the Central Competitive Field.

Workers patriotically honored a "no-strike" pledge during the production upswing of World War I. Federal mobilization efforts had standardized wages and addressed some worker grievances under the Washington Agreement. Officials declared the compact binding until 1920, but miners complained about increased operator profits while inflation devoured wages. Postwar employers immediately attempted to protect profit increases by maintaining fixed wages, invalidating union recognition, and abolishing the right of collective bargaining. Owners refused to negotiate, and a widespread strike crippled the industry in 1919. Miners vehemently complained that national authorities had abandoned forcing companies to abide by coal prices or labor rules, but instead were using wartime legalities to impose a comprehensive injunction on workers. Colliers ignored the injunction despite claims that Bolsheviks financed the strike, and President Woodrow Wilson ordered a temporary 14 percent wage increase and appointed an investigative Bituminous Coal Commission to direct a final settlement.

Unionism held the promise of stabilizing the industry by encouraging corresponding operator associations, but these groups varied in purpose—some to facilitate bargaining with the UMWA, others to prevent unionization. With the latter increasing in the 1920s, the UMWA entered a period of decline. Overproduction, cutthroat competition, and the development of other fuel sources blended with expanding antiunionism to make the miners' union ineffective by the end of the decade.

John L. LEWIS, the most famous UMWA president, assumed leadership during this period. Elected in 1920, Lewis pledged to accept no reduction of past union gains and, in the Jacksonville Agreement of 1924, convinced the Central Field producers to maintain the base wage rate. These high wages encouraged the growth of nonunion mines elsewhere, which placed the Central Field at a competitive disadvantage. Federal attempts at stabilization failed when postwar operator unity declined, and entrepreneurs revived resistance to governmental interference. When Lewis rejected wage concessions, operators nullified the 1924 agreement and began a largely successful open-shop campaign.

The shrinking UMWA seemed powerless in an overdeveloped coal industry. Coal companies, particularly in the South, continued to control workers through traditional methods, and governmental actions bolstered these antiunion efforts. Federal troops arrived to suppress major strikes, and court injunctions impeded organizing campaigns. Reckless competition intensified in an industry roughly divided between the northern fields and southern Appalachia.

In this era of union decline, Lewis ignored UMWA ethics and moved aggressively to centralize power in the international office. From the outset, the UMWA had based its administration on democratic principles. Local chapters elected delegates who voiced the concerns and opinions of rank-and-file members at district and national conventions. Lewis made himself a virtual autocrat as he intimidated, discredited, and purged dissenters. He hoped that a similar autocracy might develop among the coal operators and result in industry-wide contract bargaining and a standardized wage scale.

Lewis's domineering practices, the long period of RECESSION, and company antiunion methods contributed to a resurgence of organizational spirit in the 1930s. Rank-and-file militancy manifested itself in 1931 and 1932, when the upstart National Miners Union led strikes in Kentucky, Pennsylvania, and Ohio, and wildcat walkouts occurred in southern Illinois. Lewis capitalized on the new militancy to both solidify his leadership and expand the union. In June 1933, Section 7(a) of the National Industrial Recovery Act further fueled the movement, and the UMWA quickly organized more than 90 percent of the coalfields, including the historically violent antiunion operations of West Virginia.

Unionization of the notoriously antiunion captive mines, those who sold only to a parent company in such industries as steel, provided a needed victory. Organizing the STEEL INDUSTRY could protect these newly established locals, and Lewis again recognized labor's militancy and advocated the organization of mass production industries. When the AFL ignored the movement, Lewis established the Congress of Industrial Organizations (CIO) in 1938. UMWA human and financial resources supported the efforts that brought unionization to thousands of the nation's mass production laborers. The UMWA left the CIO when Lewis fulfilled his pledge to resign from the CIO presidency if Roosevelt won reelection in 1940.

Coal boomed during World War II, but Lewis ignored the wartime no-strike pledges of other labor leaders. Two strikes won significant gains but damaged the public image of organized labor. After the war, the UMWA demanded an end to the often substandard health care associated with "company" medical services. Thousands of miners lay disabled, and postwar strikes won a welfare and retirement fund financed by tonnage royalties. In time, the funds paid benefits to millions of miners and their families and subsidized the building of 10 miners' hospitals in the mid-1950s.

Postwar technological innovations enabled coal's customers to turn to other fuels. Lewis had long believed that mechanization coupled with comprehensive unionization provided a solution for the unstable market; labor organization equalized wages, and increased tonnage might competitively eliminate less-efficient operations. By 1950, the Bituminous Coal Operators Association (BCOA) concurred and settled a new contract that established nationwide bargaining and promoted automation. Subsequent technological unemployment reduced the number of miners from 416,000 to 130,000 by the mid-1960s.

A significant era of labor history ended when Lewis resigned the presidency in 1960, passing the reigns of leadership to the ill and elderly Thomas Kennedy. W. A. (Tony) Boyle actually controlled the union during Kennedy's short administration. Boyle assumed the presidency in 1963 and attempted to wield the power established by Lewis, but Boyle had neither the personality nor political skills of Lewis. America had entered an era of grassroots movements motivated by a distrust of vested authority, and Boyle's tactics and a perceived disregard for miners aroused serious rank-and-file disapproval. Boyle tried to continue the Lewis-established BCOA-UMWA partnership, but unemployment, company flexibility in layoffs, and tendencies to cut financial support to widows and disabled miners energized a trend to revive union democracy. Boyle's company-friendly attitude at the Farmington, West Virginia, mine disaster in 1968 seemed to validate suspicions of corruption. Grassroots reformers lobbied for the federal Coal Mine Health and Safety Act of 1969 as well as black lung compensation.

Joseph A. (Jock) Yablonski represented the reformers in an unsuccessful attempt to oust Boyle in 1969. A few weeks later, rumors of election corruption escalated when assassins murdered Yablonski and his family. Reform efforts intensified, and dissenters formally organized as the Miners for Democracy (MFD) in 1972. A federal court convicted Boyle of illegal political contributions, and a judge abrogated the 1969 election. Arnold Miller of the MFD won the presidency in 1972 on a pledge to restore union democracy. In 1974, Boyle received a murder conviction for ordering the Yablonski killings.

Miller's administration fell short of reform expectations. The militant spirit of the era and a

return to local union autonomy contributed to a rash of wildcat strikes in the 1970s. Miners lost faith in Miller, particularly after the 111-day 1977–78 contract strike. An oversupplied market gave coal consumers the upper hand in disputes, and conservative president Sam Church attempted to reestablish the industry-labor accord of the later Lewis years. An expansion of nonunion mining and use of western strip-mined coal had weakened UMWA bargaining power, but miners felt betrayed by the Church administration's 1981 contract proposal. In 1982, intelligent miner-turned-lawyer Richard Trumka accused the union leadership of reactionary policies, and he won election to the presidency.

Trumka's administration returned miners' faith in their leadership and restored order to the union's democratic process. A more sophisticated approach broke from tradition with innovations such as selective strikes and programs to raise public awareness of labor issues. This became particularly important in 1989, when the Pittston Company withdrew from the BCOA. Increasing health costs and the rising number of retirees led Pittston to rescind its obligation to the funds, and the resulting 10month strike witnessed the adoption of new labor tactics such as mass civil disobedience. Facing a determined corporate effort, right-towork law, and replacement workers, the union nurtured a community-based resistance that garnered an acceptable contract.

In 1989, the UMWA reentered the AFL-CIO, and in 1995 Trumka became secretary-treasurer of that organization. Today the president of the 110,000-member UMWA is Cecil Roberts, whose strategies and coordination contributed much to the successful campaign against Pittston. While the union continues to represent the interests of American coal miners, it has also entered the arena of international labor issues.

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Paul H. Rakes

U.S. Steel Corp. A company created by J. P. Morgan and Elbert GARY after Morgan acquired Carnegie Steel for almost \$500 million in 1901. Carnegie Steel was merged with the Federated Steel Co., founded in 1898, and several other companies to form the largest company in the world. It was the first company with a balance sheet valued at more than \$1 billion, and its initial market capitalization stood at \$1.4 billion. When it was first formed, the company was responsible for an explosive rally on Wall Street, followed by a sharp drop in the market index.

Immediately after being founded, the company accounted for almost two-thirds of U.S. steel production. Its first president was Charles M. SCHWAB, who left after two years to run Bethlehem Steel. Despite its size and potential for market domination, the company was loosely run and did not dominate the market as originally feared. The company boasted 170 subsidiaries and net earnings in its first year of operation of \$108 million. It employed more than 160,000 workers. When first formed it accounted for 62 percent of domestically produced steel, but the numbers began to fall, to 52 percent during World War I and 46 percent in the 1920s.

U.S. Steel was sued by the government for antitrust violations in 1912. The case was not settled until 1920, when the Supreme Court ruled that U.S. Steel no longer had a monopoly. The war years were among some of its most profitable. Free of antitrust problems, the company prospered in the 1920s as it had during World War I. Along with other "smokestack" stocks, "Big Steel" became known as one of the country's "wheelhorse" industries, being emblematic of American industrial production. During the stock market crash of 1929, New York Stock Exchange president Richard Whitney entered an order for U.S. Steel in an attempt to stabilize the market in the face of sell orders, symbolizing its importance to the market. It remained the country's largest producer of steel until the 1950s, when foreign competition began to emerge from Europe and the Far East. Competition from alternative products, such as plastics, also reduced demand for steel products, and the American share of worldwide steel production fell by 50 percent by the late 1950s.

The company took a major step toward diversification in 1982, when it acquired Marathon Oil Co. Several years later it also acquired Texas Oil and Gas and then changed its name to the USX Corporation. It also became the target of several corporate takeover specialists who viewed its parts as worth more than the whole. The company returned to profitability in the 1980s and was restructured again in 1991, spinning off two publicly traded companies, the USX-US Steel and USX-Marathon companies. It also bought some eastern European operations after the fall of Soviet communism in order to expand its operations internationally. In 2001, USX shareholders voted to spin off the steel making unit into a freestanding company known, once again, as United States Steel Corporation.

See also Morgan, John Pierpont; steel industry; Whitney, Richard.

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utilities Name traditionally associated with companies that provide electricity and water. Traditionally, utility companies have been referred to as public utilities, even if they were organized as corporate stock companies. Other utilities have been owned and operated by government

authorities, usually municipal or, in one case, by a federal government agency.

Although companies providing water are included within the category, the term utilities is usually associated with companies that provide electricity. The first company in the United States to provide electricity was the Edison Electric Co. in New York City, originally owned by Thomas EDISON. With financial assistance from J. P. Morgan & Co., Edison Electric began producing electricity in lower Manhattan. Although early attempts were made at consolidating the industry, electricity was provided by many companies in the 19th century. The fragmented nature of the early industry gave way to larger utility companies that began to form in the early 1900s, financed by Wall Street. The GENERAL ELECTRIC CO., the successor to Edison Electric, was one example.

In the 1920s, consolidation of the electric producing industry intensified when large industrial holding companies were formed, which in turn owned the smaller generating units. Disputes arose in states where there was a mix of ownership. Some states had their electricity provided by private, independently owned companies in some areas and by municipally owned companies in other areas. As a result, charges for electricity varied greatly. The debate over the ownership of electric companies became one of the major public policy issues of the 1920s. By the latter part of the decade, several larger utility holding companies controlled almost 50 percent of electrical production in United States. Some of the better known among them were Samuel Insull's Midwest Utilities and the United Corporation, controlled by J. P. Morgan Jr.

During the 1930s, the debate continued, and the U.S. government created the TENNESSEE VAL-LEY AUTHORITY in 1933. The massive utility company was the outcome of a government-inspired electric power facility built at Muscle Shoals, Alabama, during World War I. The large HOLDING COMPANY provided hydroelectric power for rural areas in the South. It was one of the rare instances in which the government entered the industrial sector to provide a service usually



Edison electric plant, Detroit, Michigan, ca. 1900 (LIBRARY OF CONGRESS)

delivered on the local level and has been cited as one of the accomplishments of the NEW DEAL.

As a result of the debate over ownership of utilities and the relationship of Wall Street with many of the holding companies, Congress passed the Public Utility Holding Company Act in 1935. The law required utilities to seek permission from the Securities and Exchange Commission before issuing new securities and also limited holding companies to owning only one power generating company-known at the time as the death sentence provision because it effectively ended many utilities empires. This provision effectively limited the size of holding companies and put the power generating capacity within a state or region in the hands of one company. Utilities within the states were also subject to the various state power commissions for rate increases and pricing.

The utilities industry was partially deregulated in 1992, when the Energy Policy Act was passed by Congress, allowing utilities to deregulate sales and opening the door for cheaper wholesale rates and potentially cheaper rates for consumers. The states also began to deregulate in their own right, although the price of electricity still varied from state to state, much as it had in the earlier part of the century.

See also Insull, Samuel; Morgan, John Pier-Pont, Jr.

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V

Vail, Theodore N. (1845–1920) *telephone executive* Born in Minerva, Ohio, Vail became the prime force behind the creation of the AMERI-CAN TELEPHONE & TELEGRAPH CO. (AT&T) and the first general manager of the telephone system in the United States. After moving to New Jersey with his family at age two, he graduated from the Morristown Academy and then went to work in a drugstore, which was also a TELEGRAPH office. He quickly learned to operate a telegraph and then found a job working for the WESTERN UNION TELEGRAPH CO. in New York City.

Vail's family moved to Iowa in 1866, and he accompanied them and began a career with Union Pacific's railway postal service. During his tenure with the service, he established the first mail-only train service and eventually became superintendent of the railway mail service in 1876. During his time with the postal service, he became acquainted with Gardiner Green Hubbard, who was in the process of forming Bell Telephone Associates with other businessmen; in 1878, Vail was lured away to run the Bell Telephone Co. as general manager. Under his auspices, the company developed a long-distance service from Boston to Providence, Rhode Island. Vail also presided over the formation of Western Electric Co., the arm of Bell that manufactured telephone equipment. He retired from the company in 1887 after coming into conflict with the board of directors, which did not want to expand the company as quickly as he did.

After retiring from the telephone company, embarked on business ventures in Vail Argentina, helping finance and develop electric and power projects in Cordoba and Buenos Aires. He was persuaded to return to the telephone company after it was consolidated as the American Telephone & Telegraph Co. in 1907 with the financial backing of J. P. Morgan. Vail believed that competition was wasteful and proceeded to strengthen the company. He moved the company headquarters from Boston to New York and quickly moved to unite all of the Bell companies around the country by personally becoming acquainted with their presidents. He developed a strong affiliation with the Western Union Telegraph Company in 1909, although antitrust action caused them to separate four years later. In 1914, AT&T introduced the first coast-tocoast long-distance service, and Vail had the distinction of placing the first call from Boston to

San Francisco. During the war, the service was so successful that Congress effectively granted AT&T a virtual monopoly over telecommunications. Vail joined the company's board of directors in 1919, when he retired from the operating unit of the company. He died in New York in 1920.

See also Bell, Alexander Graham.

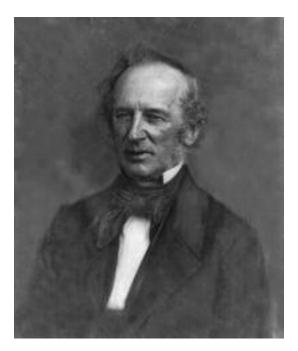
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Vanderbilt, Cornelius (1794–1877) *shipping and railroad entrepreneur* Born in Staten Island, New York, to Dutch parents, Vanderbilt left school early to establish his own ferry service from Staten Island to Manhattan. Using \$100 borrowed from his parents, he bought a small boat and began ferrying customers to lower Manhattan. He established his reputation for toughness and reliability during the War of 1812 by working long hours. He was soon able to expand his fleet of small sailing boats and became one of New York's best-known ferrymen, acquiring the nickname of "Commodore" that became his hallmark. By 1817, his fleet covered much of the East Coast, from Boston to Charleston.

Recognizing that sailing ships had a limited future after the introduction of steamships, Vanderbilt sold his fleet and went to work for another ferry operator, Thomas Gibbons, who operated a service between Philadelphia and New York City. The ferry service itself ran between New York and New Brunswick, New Jersey, with the balance of the trip conducted by coach. The New York legislature previously had granted a monopoly to Robert FULTON and Robert LIVINGSTON to operate a steamship ferry in New York harbor, and they in turn licensed Aaron Ogden of New Jersey to operate a ferry between New Jersey and New York. Gibbons and Vanderbilt challenged the service, and Vanderbilt took great delight in encroaching on their territory and taking paying customers to New Brunswick. Finally, the monopoly was attacked in court by Gibbons. After losing the case in the lower courts, Gibbons appealed to the Supreme Court, where the landmark case of *Gibbons v. Ogden* was decided in his favor.

Vanderbilt entered the steamship business in 1829 and entered the same market, New York to Philadelphia. Shortly afterward, he started a service up the Hudson River. He was so successful on the route that he was eventually bought out by a competitor, as he had been on the Philadelphia route as well. He then opened a service to New England and became one of the dominant forces in East Coast shipping. When the Gold Rush



Cornelius Vanderbilt (LIBRARY OF CONGRESS)

began in California in 1849, he contemplated a service between New York and California, crossing Central America through Nicaragua. He was unable to solve the logistics involved, but his problems were solved when he was again bought out by his competition. He then opened a transatlantic service that was successful until the Civil War broke out.

During the Civil War, he turned his attention to RAILROADS. He bought an operating interest in the New York & Harlem Railroad in New York. When acquiring control, he also learned the techniques of stock market manipulation that many of the early railroad entrepreneurs employed to gain control of a company's stock. He improved the railroad substantially and then acquired the Hudson River Railroad as well. In 1867, he also took control of the New York Central Railroad, which operated between Albany and Buffalo. His holdings stretched from lower Manhattan to Buffalo. He then launched an attempt to take over the ERIE RAILROAD, which extended from Buffalo to Chicago. At the time, the Erie was controlled by Jay GOULD and Jim FISK, who were not about to relinquish control to Vanderbilt. What followed became known as the "Erie War."

Vanderbilt began accumulating shares in the railroad. The two directors of Erie responded by issuing more stock in the company, effectively taking Vanderbilt's money while denying him a controlling interest. He threatened them with legal action, and Gould and Fisk decamped quickly to New Jersey with a large horde of the railroad's cash. Vanderbilt eventually gave up the battle, again for a million-dollar settlement in his favor.

In addition to acquiring railroads, Vanderbilt built the original Grand Central Station in New York City during the depression of 1873, winning him accolades for public service during a difficult period. He died in 1877, leaving the bulk of his \$100-million fortune to his son, William Henry Vanderbilt, who continued his father's railroading interests.

See also COMMERCE CLAUSE.

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Veblen, Thorstein (1857–1929) *economist and social theorist* Born in Wisconsin on the family farm, Veblen was the son of Norwegian immigrants who came to the United States in 1847. He graduated from Carleton College in three years and moved to Baltimore to do graduate work in philosophy at Johns Hopkins. Three years later, he enrolled at Yale, where he earned a Ph.D. in 1884. He then started a peripatetic career that began with a long period of unemployment before he enrolled at Cornell in 1891 to study economics.

His first substantial job came in 1892, when he taught political economy at the University of Chicago, recently founded by John D. Rockefeller. He remained on the staff until 1906, during which time he published his most famous book, The Theory of the Leisure Class (1899). In the book, he adopted a neoclassical view of how humans attained leisure and coined the phrase for which he is best remembered-"conspicuous consumption." According to Veblen, those with the most leisure time indulge in consumption beyond their basic needs and desires as part of an anthropological desire to gain attention. This form of attention-getting was a primal force in life, no different from the urge to mating or selfpreservation. He used August Belmont II as his model, since both he and his father, August Belmont, were known for their indulgences.

Veblen also wrote *The Theory of Business Enterprise* (1904) and taught at several other universities after leaving Chicago. He subsequently taught at Stanford and the University of Missouri and was a founding member of the New School for Social Research in 1918. He wrote several books during and after World War I, among them *The Instinct of Workmanship and the State of* Industrial Arts (1914), The Vested Interests and the Common Man (1919), and Absentee Ownership and Business Enterprise in Recent Times (1923). He also served on the Food Administration during World War I and taught at the New School for Social Research until his retirement in 1926. He died in California in 1929.

Despite his other writings, Veblen is best remembered in business for coining the term *conspicuous consumption*, which along with other terms like *ROBBER BARONS*, has become standard usage in American language.

See also BELMONT, AUGUST; BELMONT, AUGUST, II.

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Volcker, Paul (1927-) chairman of the Federal Reserve Board Paul Volcker was born in Cape May, New Jersey, on September 5, 1927, the son of a city manager who had saved the city of Teaneck, New Jersey, from insolvency. His father's disciplined approach to finance greatly influenced Volcker. He himself proved adept at economics; in 1949, he graduated with honors from Princeton University and two years later earned his master's degree from Harvard University. After a year of postgraduate work at the London School of Economics on a Rotary fellowship, Volcker joined the Federal Reserve Bank of New York in 1952. Five years of working for the government ensued, then Volcker left in 1957 to join CHASE MANHATTAN BANK as a financial economist. In 1962 he briefly served with the U.S. Treasury Department as a financial analysis director, and the following year he functioned as undersecretary for monetary affairs. In 1965, Volcker resumed relations with the private sector as vice president of planning at Chase Manhattan, although he subsequently returned to the Treasury four years later as undersecretary of monetary affairs. He departed again in 1974 to become a senior fellow in the School of Public and International Affairs at Princeton; within a year he was tapped to serve as president of the Federal Reserve Bank of New York. Over the next four years the garrulous, cigar-chomping Volcker acquitted himself with distinction at this, the most important bank within the FEDERAL RESERVE system, and his success did not go unnoticed by the political establishment. In August 1979, he was nominated by President Jimmy Carter to serve as chairman of the Federal Reserve Board, an essential position within the government.

Volcker assumed office at a difficult time in American financial history. Carter's handling of the economy resulted in double-digit inflation, while the value of the dollar spiraled downward. Volcker, as head of the Federal Open Market Committee (FOMC), decided to invoke draconian measures to rein inflation back. Instead of controlling interest rates by allowing higher money growth supply rates, the Fed did the opposite: It clamped down by imposing strict money supply growth targets. This policy resulted in extremely high interest rates of 21 percent by December 1980, which triggered the worst RECESSION in 40 years. Unemployment skyrocketed to 10.7 percent in 1982, which jeopardized the mid-term congressional elections of a new president, Ronald Reagan, but Volcker proved adamant. Though vilified by the press as heartless and amid clamoring for his recall by Congress, he maintained his tight-fisted control of the money supply until inflation bottomed out at 4 percent. Many in political circles questioned the sagacity of his policies and whether the price of taming inflation was too high. Nonetheless, in August 1983 President Reagan reappointed Volcker to another four-year term as Fed chairman.

Throughout his second tenure in office, Volcker confronted problems inherent in the DEREG-ULATION of the financial industry. This brought on sudden and unexpected shifts in the growth supply of money, which threatened to spur inflation, but the Fed maintained a watchful eye and regulated such growth carefully when possible. He also incurred criticism from the banking industry for insisting that the Federal Reserve was obliged by its very nature to closely monitor banks on a daily basis, even in an age of deregulation. Despite an air of uncertainty, Volcker silenced his detractors by keeping inflation in check and by ushering in a period of sustained economic growth-the so-called Reagan revolution. By the time he left office in 1987, he was hailed as among the most influential chairmen of the Federal Reserve in American history. His replacement was the equally gifted Alan GREENSPAN. Since leaving the public sector, Volcker has served as a consultant to the World Bank and as chairman of the National Commission on the Public Service. He remains chairman of the investment banking firm James D. Wolfson.

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John C. Fredriksen

Volstead Act The National Prohibition Act, commonly referred to by the name of its author, Andrew J. Volstead, was the statute enacted in 1919 to enforce Prohibition, imposed by the Eighteenth Amendment to the U.S. Constitution. (Volstead represented a Minnesota district in the House of Representatives, 1903–23.) Constitutional Prohibition, which went into effect in January 1920, forbade the manufacture, distribution, and sale of alcoholic beverages and was thus an important measure of America's determi-

nation at the time to exercise public power over objectionable business behaviors. The Volstead Act borrowed from previous state statutes; in general, federal policy relied on local enforcement. However, the law provided for action by federal officials when state and local law enforcement officers were unable or unwilling to enforce Prohibition.

The Volstead Act, like the Prohibition policy it enforced, was controversial. The law placed responsibility for enforcing Prohibition in the Department of the Treasury, not the Justice Department, because Treasury was experienced with taxing alcoholic beverages. Thus, responsibility was placed in the hands of elected and appointed officials, not civil servants chosen by merit. Eventually, after the election of Herbert Hoover in 1928, Congress changed the law to place responsibility under the Justice Department and in the hands of professional law enforcement officers.

The law narrowly defined an intoxicating beverage as one containing more than 0.5 percent alcohol by volume, effectively forbidding the sale of all beer. This strict standard outraged brewers, some of whom had expected Prohibition to exclude their products. Throughout the period of Prohibition, this standard was controversial, with powerful efforts mounted to legalize the businesses of making and selling light beers and wines.

In April 1933, after the inauguration of Franklin D. Roosevelt as president, Congress modified the law so as to allow breweries to operate even before the repeal of the Eighteenth Amendment in December of that year. Finally, the statute had failed to outlaw the possession of alcoholic beverages, especially disappointing some Prohibition advocates, most notably Wayne B. Wheeler, in charge of the legal department of the Anti-Saloon League of America. Thus, under Prohibition, private owners of alcoholic beverages purchased before the imposition of Prohibition continued legally to consume them. What the statute forbade was their manufacture, distribution, or sale; it was in that sense an antibusiness measure. Alcohol was still manufactured during the period of Prohibition. The Volstead Act permitted sales for medicinal and sacramental purposes. Most important, there were important industrial markets for alcohol in the CHEMICAL INDUSTRY. The Volstead Act thus permitted the continued distillation of industrial alcohol and its withdrawal under government supervision for use by the chemical industry.

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Austin Kerr

W

wage and price controls Restraints placed by the federal government on increases in wages and prices (usually) during wartime. In order to keep inflation from rising during times of crisis, the government can dictate the amount of percentage gain for both wages and prices, if any. The theory behind the controls is that if wages are contained then the demand for goods and services will be kept in check. Similarly, if prices are contained, then consumers will not rush to purchase goods and services in anticipation of even higher prices in the future, also keeping percentage gains in check.

Wage and price controls were instituted by the Roosevelt administration during World War II. The Office of Price Administration (OPA) was established in order to monitor prices and began imposing limits on price increases on most commodities in 1942. The prices of commodities that year became the ceiling for most commodities until further notice. It also extended limits on residential rents and then on retail prices. The OPA also had the power to ration scarce goods and soon imposed limits on automobiles, tires, meats, coffee, and oil, among other commodities. Many commodity futures exchanges were forced to curtail business in these commodities because speculation in them was not permitted. The controls were phased out after the war, and the OPA was dismantled in 1947.

A second attempt was made at wage and price controls in 1971, when President Richard Nixon announced a series of measures designed to keep inflation in check. Inflation was rising because of the effects of the Vietnam War and unstable foreign exchange market conditions. As a result, the administration announced in August of that year a package designed to check inflation. Included were temporary restraints on prices and wage contract increases. The results were somewhat positive, although there was much criticism for using a wartime precedent, designed for emergencies, when war had not been declared.

One of the most important and overlooked parts of the package was the administration's decision to unilaterally devalue the dollar, effectively ending the BRETTON WOODS SYSTEM of fixed parity exchange rates. The decision was not in keeping with the Bretton Woods agreement since it was a unilateral devaluation. The devaluation part of the package proved to be the longeststanding result of the wage and price controls since all of the other measures were temporary and soon rescinded.

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Walton, Sam (1918–1992) *retailer* The founder of Wal-Mart stores, Walton was born in Kingfisher, Oklahoma. He attended the University of Missouri and served in the military during World War II. After leaving the service, he purchased a Ben Franklin variety store in Arkansas in 1945 with borrowed money and began a long retailing career that lasted until his death.

The venture was so successful that the leaseholder of the store forced Walton to relinquish it. He returned to Arkansas and purchased another store, called Walton's Five & Dime, located in Bentonville. It opened in 1950 and became the first in his long string of successes. Within 10 years, he owned 15 stores. The chain was renamed Wal-Mart in 1962 and began employing management techniques that would make Walton famous. Wal-Mart became one of the first retail discounters, selling on small margins. All of his stores were opened in small towns in rural settings, and until 1970 he funded them with retained earnings.

In 1970, the chain went public, raising more capital for expansion. By 1980, there were 276 stores in the company. Although the stores remained mostly in low population density areas, Walton adopted technology so that inventory could be closely controlled by a satellite-based system that linked all of the stores with his head-quarters in Bentonville, Arkansas.

After going public, Walton employed an employee profit-sharing plan that became very popular with his employees. By 1985, Walton was proclaimed the richest man in America, and by 1991 sales were soaring as a result of his management practices. The market capitalization of the company was more than \$25 billion in 1990. Walton died in Little Rock in 1992, but the practices he instituted outlived him, and the company continued to grow.

By the end of the 1990s, the number of stores had risen to more than 3,000, located in eight countries. The stock was added to the Dow JONES INDUSTRIAL AVERAGE in 1997 as Wal-Mart passed Sears as the largest retailer in the country. By the end of the 1990s, the company was the largest private sector employer in the world, with more than 1.3 million employees.

In 2000, it passed annual sales of \$165 billion. Wal-Mart began opening more stores overseas, in Latin America, and in Mexico in the 2000s. The store chain became the source of controversy as it was revealed that it paid some of its workers the minimum wage with no additional benefits. The impact of the store's relentless expansion and its effect on local communities was debated in academic and trade circles as it became clear that Wal-Mart's impact was raising the same sort of fears that surfaced in the 1920s with the first expansion of CHAIN STORES on a widespread basis.

See also K-Mart; Sears, Roebuck & Co.; Ward, Aaron Montgomery.

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The front of a Wal-Mart store (WAL-MART)

Wanamaker, John (1838–1922) *merchant and businessman* Born in Philadelphia, Wanamaker left school with only a grammar school education at age 13 and went to work as a delivery boy, eventually finding a job in the retail clothing business several years later. After deteriorating health, he took a trip to the American West to recover. Upon his return, he took a position as secretary of the Philadelphia YMCA.

In 1861, he used his meager savings to open Brown & Wanamaker, a men's clothing store in Philadelphia, with his brother-in-law. The store opened just as the ready-to-wear clothing industry began to grow larger. In 1869, a year after Brown died, Wanamaker opened a more upmarket clothier called John Wanamaker & Co. He expanded into dry goods in 1875 and two years later created the forerunner of the modern department store by opening a number of specialty shops around his flagship store. The store was originally called the Depot but in 1885 changed its name to Wanamaker's.

Wanamaker constantly strived for innovation in his retailing endeavors. In 1876, he established a mail order business and also opened a restaurant in one of his stores. Two years later, his first store powered by electricity was opened, and in 1882 he installed a soda fountain and elevators. He also opened a Downstairs Store in one of his stores, a bargain basement selling at discount prices.

In 1896, he purchased a New York store and expanded his offerings and operations from Philadelphia. Wanamaker's stores were the first to include such specialty areas as Ford dealerships. He also had the world's largest pipe organ installed in a Philadelphia store to entertain shoppers. He was one of the first retailers to use advertising and hired the first department store copywriter in 1880. Although a keen advocate of advertising, he staunchly refused to open his stores on Sundays. He also is well remembered for an observation concerning advertising, which has endured: "Half my advertising is wasted, I just don't know which half."

Wanamaker also implemented employee benefit programs, including training programs for his clerks. These programs evolved into the John Wanamaker Commercial Institute, one of the early training schools for business and commerce. He also was a strong advocate of fringe benefits for employees, including vacations, life insurance, and pensions. He also instituted one of the first telephone ordering systems for shoppers.

Later in his life he became involved in political activities and served as postmaster general under Benjamin Harrison after raising significant funds for his presidential campaign in 1888. His death was a major event in Philadelphia, and his funeral attracted many of Pennsylvania's politicians and notables.

See also Chain Stores; K-Mart; Sears, Roebuck & Co.; Walton, Sam; Ward, Aaron Montgomery.

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Ward, Aaron Montgomery (1843–1913) *retailer* Born in Chatham, New Jersey, Ward left school at age 14 to work in the dry goods business in the Midwest when his family moved to Michigan. His first jobs were making barrels and as a day laborer. At age 19, he worked in a general store, rising to become its manager. He left the job to work in a Marshall Field store before going to work for a dry goods wholesaler in St. Louis.

While working in St. Louis, he recognized the problems faced by farmers who, because of isolation, could not shop for consumer goods effectively. As a result, he opened a retail mail-order house in 1872, which bought dry goods from manufacturers directly and offered them for sale by catalog, eliminating the middleman. The business proved popular very quickly, especially among farmers, at whom it was targeted.

Ward's first venture began in Chicago with a one-page catalog. It quickly proved successful in part because he instituted a liberal returns policy. The mail-order concept also coincided with the rise of the Grange movement, advocating better conditions for farmers, and succeeded as a result. The catalog expanded from year to year, and by 1888 annual sales exceeded \$1 million. Along with Sears, Roebuck, Ward became one of the founders of mail-order sales in the United States. The catalog became a staple in both rural and urban homes for years and epitomized the innovative nature of American retailing. The mailorder business in general was aided greatly with the introduction of rural free delivery by the U.S. postmaster general in 1895.

In the early 1900s, more than 3 million catalogs were circulated annually, and each catalog weighed approximately four pounds. Ward retired from active management of the company in 1901, although he remained as its titular president. In 1926, the company began opening Montgomery Ward retail stores and by 1929 had opened more than 530. But the expansion occurred haphazardly. More than 400 stores were operating at a deficit, and the company lost almost \$9 million. A new chief executive, Sewell Avery, was installed in 1931 to turn the operation around. Within seven years, sales reached \$475 million, a rise of \$300 million since Avery took over.

In one of the most successful store promotions, a company copywriter created a character named Rudolph the Red Nosed Reindeer for a Christmas sales promotion. A storybook was created, which reached 6 million copies in circulation by 1946. The promotion became a prototype for others to follow, copied by many stores and entertainment companies.

Upon his death, most of Ward's fortune was bequeathed to charities. A sizable portion was also left by his wife to Northwestern University, which established medical and dental schools with the money. The Ward catalog was discontinued in 1985. After steadily losing market share in the 1990s, the stores finally closed in 2000 after changing hands several times.

See also chain stores; Field, Marshall; K-Mart; Walton, Sam; Wanamaker, John.

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Watson, Thomas A. (1854–1934) *telephone pioneer and businessman* Watson was born in Salem, Massachusetts, over a livery stable where his father worked. He left school at 14, became a crockery salesman for \$5 per week, but also began taking commercial courses in Boston. Suffering from an eye malaise, he took a job in an electrical machine shop when he was 18 rather than pursue a career in which intense reading was required. It was in the machine shop that he began developing techniques that later would make him a pioneer in the development of the telephone.

While working in the machine shop, Watson met Alexander Graham BELL, a lecturer at Boston University, in 1874. After becoming acquainted, Bell explained his idea for a harmonic telegraph to him, and Watson set about developing modifications for the device. Within a short time, they were collaborating on Bell's idea for a telephone, and Watson became the first person to ever hear a phone message when Bell called him over a short line in their laboratory: "Mr. Watson, come here, I want you."

In 1876, they participated in the first two-way telephone conversation between Boston and Cambridgeport, Massachusetts. After the device was patented, Watson was given a financial interest in Bell's new invention and became the first research and technical head of Bell Telephone Company. However, he left the company long before the telephone became well developed and before the intense competition for service that began when many of the company's patents started to expire in the 1890s.

Watson received more than 60 patents relating to the telephone, but in 1881 he resigned to begin designing ships and engines and produced several battleships for the U.S. Navy after 1896. In 1901, his company was incorporated as the Fore River Ship & Engine Company. During his post-Bell period, he also pursued other intellectual interests. He studied geology at the Lowell Institute with his wife, and they both then entered the Massachusetts Institute of Technology as students. He retired from business in 1904 and devoted himself to geology, literature, and European travel, his lifelong interests. He died in Florida in 1934. He is remembered as the technical and mechanical brains behind many of the Bell Company's technological achievements.

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Watson, Thomas J. (1874–1956) computer manufacturer Thomas John Watson was born in East Campbell, New York, on February 17, 1874, the son of a lumberman. Rather than pursue a legal career at his father's behest, he briefly attended the Elmira School of Commerce but quit before graduating to become a salesman. After fulfilling various odd jobs Watson joined National Cash Register (NCR) in 1898 and gradually moved up the company ladder. Long one of the firm's most successful salesmen, in 1912 he and others were implicated by the government in an illegal scheme to monopolize the cash register business, but he was never prosecuted. Watson left NCR in 1913 and became president of the Computer Tabulating Recording Company in Elmira, New York. Through adroit leadership he turned the ailing firm around and began acquiring other businesses. In 1917, he bought out International Business Machines, Ltd., adopted its name, and in 1923 formally established the IBM Corporation in Delaware. Despite his lack of a college



Thomas J. Watson (LIBRARY OF CONGRESS)

degree, Watson displayed an amazing aptitude for strategic planning and marketing. And, because he insisted on leasing machines instead of selling them outright, he ensured a steady cash flow over the years. Part of his success lay with thoroughly training his sales personnel to impart that they were selling a service, not simply machines. Moreover, salesmen were expected to fix and install any company products they sold to further ensure customer loyalty. Within a few years IBM became the world's greatest innovator in terms of new punch card technology, powered calculators, and electric TYPEWRITERS: As early as 1941, Watson owned more than 1,400 patents on a wide-ranging variety of business devices.

What set Watson apart from contemporaries was his philosophy toward corporate life. Workers were held to a strict dress code and expected to inculcate virtues of loyalty and devotion to the firm. In exchange, IBM paid them higher-thanaverage wages, offered them stock options, and pioneered the practice of fringe benefits such as paid retirement. This give and take was adroitly balanced, so IBM never experienced a period of labor unrest or union organizing. Watson also demonstrated keen insight as to worker psychology. An excellent motivator, he invariably decorated company offices with signs such as "THINK" to drive home the corporate notion of innovation-and workers' personal responsibility for it. Watson was also a firm believer in plowing back a certain percentage of profits into ongoing research and development projects to maintain his competitive edge. All told, the IBM management style was a unique blend of paternalism, obedience, and imagination in equal measures. It gave the company unmatched intellectual vitality and rendered it one of the most influential companies in business history. In fact, Watson's near domination of the business machine market made him the subject of several antitrust lawsuits; the company was never convicted of any wrongdoing beyond being highly successful.

American entry into World War II created a burgeoning new demand for IBM machinery, and Watson received government funding to create the first electronic computer at Harvard. This was a technological breakthrough of the first magnitude, and IBM wasted no time in creating versions compatible for business purposes by 1953. Thus, Watson played a large role in the rise of office automation, which revolutionized the way the world did business. Furthermore, he maintained the company's traditional supremacy over competitors through aggressive marketing worldwide and by offering the first software packages; this way the same machine could be programmed for multiple applications. Watson became renowned for putting in 16-hour work days, but he also generously donated money and time to charity and the arts. When he died in New York City on July 19, 1956, Watson had orchestrated the rise of one of the largest and most profitable corporations. Moreover, the management techniques he originated set standards for the newly emerging corporate culture and were widely emulated across the globe. But his greatest contribution was in setting the stage for the new information age, which reached its greatest expression in the personal desktop computer.

See also COMPUTER INDUSTRY.

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John C. Fredriksen

Weill, Sanford (1933–) banker and securities executive Weill was born in 1933 in New York City and lived in Brooklyn before attending military school and Cornell University. After graduating, he found a clerical job on Wall Street and shortly decided to make a career as a broker. He got his start in 1958, when I. W. "Tubby" Burnham gave him a job at Burnham & Co., a brokerage founded in 1935. The same firm would later give Michael Milken his first job on the street. Weill started ambitiously and within several years began his own brokerage, leasing space from Burnham. His small firm grew rapidly, and he spied his first opportunity to expand in the wake of the backoffice crisis that plagued Wall Street in the early 1970s.

In 1970, Weill purchased Hayden Stone, a retail broker, adopted its name, and eventually became its CEO three years later. The acquisition began a pattern for the company and the ambitious Weill. After purchasing another firm in 1974, the name was again changed to Shearson Hayden Stone. In 1979, it became significantly larger by buying the ailing small investment bank Loeb Rhoades & Co., becoming Shearson Loeb Rhoades. After purchasing more than a dozen small- and medium-size firms, Weill sold Shearson to American Express in 1981, remaining with the firm as a senior executive but not as president.

Despite assuming the presidency in 1983, Weill quit American Express in 1985. A year later, he became CEO of Commercial Credit Corp., a consumer credit company. He then employed a familiar tactic and began a series of MERGERS using the company as his acquisitions vehicle. In 1988, he acquired another financial services company, Primerica, which owned the old-line securities house Smith Barney. He then purchased Shearson back from American Express and also acquired the Travelers Insurance Company. He purchased the jewel in his Wall Street crown by acquiring investment bank SALOMON BROTHERS in 1997 for \$9 billion.

Weill engineered the largest Wall Street merger when he agreed to merge Travelers with

CITIBANK in 1998. A merger between an insurance company, investment bank, and commercial bank was forbidden by the BANKING ACT OF 1933, but the deal was allowed to proceed because of the DEREGULATION trend occurring at the time. The merger was allowed by the FEDERAL RESERVE with the provision that it adhere to both the BANK HOLDING COMPANY ACT and the Banking Act within two years. In 1999, Congress passed the FINANCIAL SERVICES MODERNIZATION ACT, doing away with many of the strictures found in the Banking Act, and the merger was allowed to stand. Weill and John Reed of Citicorp shared CEO duties until Reed retired, leaving Weill in charge.

Weill resigned from the chief executive post at Citigroup at the end of 2003, remaining as chairman. He also is noted for his philanthropy, especially to the Cornell University Medical School located in Manhattan, and to numerous other cultural institutions in New York City.

See also INVESTMENT BANKING.

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Welch, John F. (1935–) businessman Better known as Jack, John F. Welch was born in Salem. Massachusetts, and earned a degree in chemical engineering from the University of Massachusetts in 1957 and a Ph.D. from the University of Illinois in 1960, also in chemical engineering. After leaving graduate school, he took a job with GENERAL ELECTRIC CO. Over the course of his career at GE, he would become one of the world's best-known executives, presiding over a period of exponential growth for the company. Welch rose through the ranks at GE, becoming a vice president in 1972, senior vice president in 1977, and the eighth chairman of the company and chief executive officer in 1981, succeeding Reginald Jones. His rapid rise was attributed to his dislike of bureaucracy and rigid organizational structures, favoring instead a looser learning environment for his staff and management, with employees at all levels communicating with each other in an environment permeated with information flow and ideas.

Welch also expanded the company through a series of aggressive acquisitions and divestments. In the four years following being named chairman and CEO, Welch presided over the acquisition of more than 300 businesses and the divestment of dozens of others in order to diversify the company's operations. By 1986, GE had more than 300,000 employees and annual sales of \$28 billion. In 1985, GE made its most notable acquisition by purchasing RCA for \$6.28 billion, enabling the one-time manufacturer of light bulbs and electrical equipment to enter broadcasting. A year later, it also purchased investment bank KIDDER PEABODY in an effort to expand its financial services. GE Capital was already one of the largest providers of nonbank financial services but lacked an investment banking division.

In addition to acquisitions, Welch was known for trimming operations and using fewer employees than his predecessors, earning him the sobriquet "Neutron Jack." But the stock market applauded his efforts, and the company value steadily rose. Welch retired from the company in 2001 after serving 20 years. His extremely generous retirement package drew intense criticism from shareholders, and he agreed to relinquish parts of it in order to quell the criticism. But he is best remembered for presiding over General Electric during the period of its most rapid growth. During his tenure, the company's market capitalization rose from \$12 billion to more than \$280 billion, and it became the world's most highly valued company.

See also CONGLOMERATES; YOUNG, OWEN D.

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Wells Fargo A diversified financial services company that provides banking, mortgage, consumer credit, investment, corporate funding, and international finance throughout the United States and abroad. It serves 20 million households through 5,400 offices, staffed by 120,00 employees, while Wells Fargo's on-line offerings dominate cyberspace. Its banking covers 23 states with 3,000 branches and 7,000 automated teller machines.

In 1848, the cry of "Gold!" reverberated from California around the world. Four years later, on March 18, 1852, New Yorkers Henry Wells and William George Fargo organized Wells, Fargo & Co. to offer innovative banking, express, and letter delivery on the Pacific coast. Reliability, honesty, and good management allowed their firm to shine during an 1855 financial panic that crushed California's two largest banks.

Wells Fargo became a universal business agent demanding fair treatment for all. It delivered express packages by the fastest means of transportation available, and small businesses especially patronized Wells Fargo's Letter Express, which consistently beat government mail delivery. Pleased customers entrusted so much bullion to it that from 1858 until 1900 Wells Fargo compiled western mining statistics from British Columbia through Mexico.

In 1858, Wells Fargo helped inaugurate the Overland Mail Company, whose stagecoaches sped letters and passengers across the Southwest in 24 days, three-fourths the time by steamship. In 1861, the first year of the Civil War, Wells Fargo ran the western end of the Pony Express and the Overland Mail coaches on a central route through Salt Lake City. Through the 1860s, additional gold rushes expanded Wells Fargo's banking from California, New York, and Boston into Oregon, British Columbia, Nevada, Utah, and Idaho. By the late 19th century, banking services contributed one-third of Wells Fargo & Company's earnings; since 1871, Wells Fargo has paid regular dividends.

In 1866, Wells Fargo added Ben Holladay's stage lines to its own and ran stagecoaches between California and Nebraska railheads and north into Idaho and Montana. Though stagecoaching led to heavy losses, it cemented Wells Fargo's claim to service all land west of the Missouri River and gave the company a timeless logo. But the future lay with the iron horse. In 1869, the Central Pacific Railroad gained control of Wells Fargo, and the express went nationwide on iron rails. In the early 1880s, contracts with RAILROADS brought Wells Fargo into the interior of Mexico and in 1888 across the continent to New York. In 1918, Wells Fargo operated 10,000 express offices nationwide, but a governmentsponsored wartime consolidation of this business left Wells Fargo only with a bank in San Francisco.

A 1905 merger with the Nevada National Bank (1875) became the first of many to double Wells Fargo's size. Isaias W. Hellman ran the combined Wells Fargo Nevada National Bank, seeking strength and quality over size. In 1924, Hellman's Union Trust Company, California's first (1893), joined Wells Fargo, and through the 1930s and 1940s, it practiced correspondent banking that was highly valued. A new consumer economy emerged after World War II, and in 1960 Wells Fargo entered branch banking grandly through a merger with American Trust Company (1854). A 1967 foray into southern California made Wells Fargo a statewide bank.

The 1980s, under Carl Reichardt, saw banking deregulation, automated teller machines, 24hour customer telephone service, and longer branch hours. A 1986 marriage with Crocker Bank (1870) again doubled Wells Fargo's size. Customer convenience grew with supermarket banks in 1990 and the pioneering of on-line banking in 1995. The next year, Wells Fargo acquired First Interstate Bank, which grew from Transamerica Corporation, A. P. Gianinni's 1928 HOLDING COMPANY.

November 1, 1998, brought new opportunity when Wells Fargo joined Norwest; Wells Fargo founder William George Fargo in 1872 had helped organize the Northwestern National Bank of Minneapolis. A 1929 holding company formed to block Gianinni's expansion into Minnesota laid the foundation for Norwest's aggressive, but decentralized, interstate growth in the 1990s. It proved visionary in other financial markets, too. In 1969 Norwest acquired Iowa Securities Company (1906) of Waterloo, which offered home mortgages, and in 1982 added Dial Finance Corporation (1897) of Des Moines. Under CEO Dick Kovacevich, adaptable Wells Fargo celebrated its sesquicentennial in 2002.

See also commercial banking; Conestoga wagon.

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Robert J. Chandler

Western Union Telegraph Co. A communications company founded in 1851 as the New York & Mississippi Valley Printing Telegraph Co. Using the TELEGRAPH developed by Samuel MORSE, the company provided coded messages sent along an electrical wire that were decoded and delivered to customers when they reached their destination. Originally, the company had less than 600 miles of cable and used a device for sending messages developed by Royal House, and based upon the Morse code. The lines transmitting messages were developed by Morse and substantially improved by Ezra Cornell, who developed the glass-coated lines strung from telegraph poles that became common.

Over the next five years, the company began to acquire other similar companies and incorporate them into its network. In 1856, it changed its name to the Western Union Telegraph Co. Its first major project was to string a telegraph line from Missouri to California—a project that most considered foolish and too risky. However, under the guidance of one of its agents, Edward Creighton, the project was completed in only 112 days when the wires from east and west were joined at Salt Lake City on October 24, 1861. The effect on the federal government was immediate, and it adopted the telegraph as its official form of long-distance communication, replacing the Pony Express.

Other developments quickly followed. The company began using the transatlantic cable laid by Cyrus Field. The cable proved unreliable and Western Union sought its own route through Alaska and Siberia to Europe. Field's subsequent cables proved more successful, and the transatlantic cables again were used. One valuable benefit did accrue to the United States from the Alaskan-Siberian idea. In its early stages, the Russian government offered to sell Alaska to the United States. The United States quickly accepted the offer and granted Western Union access to many railroad and post lines as a result.

The company moved its offices to New York City in 1866 from Rochester and quickly entered financial communications by developing the TICKER TAPE, which revolutionized the STOCK MAR-KETS. It also developed the idea of wiring funds from one office to another, acting as something of a bank funds transfer agent in the absence of a nationwide banking system. It also began its own time service, which helped standardize time around the country before time zones were established. The company became so large that its stock was one of the 12 original Dow Jones Industrials. It also developed the telex, which became a standard method of communication in finance and with news agencies until the 1980s.

In the 20th century, the company pioneered transmissions of pictures via the transatlantic cable and widespread use of the radiotelegraph, which helped marine navigation considerably. Its Mailgram services introduced next-day delivery service, an idea that would later be employed successfully by the nationwide delivery services. It also became active in satellite communications and in the mid-1970s was the first company to have a commercial satellite in space. In 1987, the company was restructured, and in 1990 it divested itself of its satellites. More recently, the company has concentrated on financial services and other forms of priority messaging.

See also FIELD, CYRUS.

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Westinghouse, George, Jr. (1846–1914) *inventor* Born in Central Bridge, New York, Westinghouse's father was a manufacturer of farm equipment. At age 15, he ran away from home to join the Union Army but returned at his parents' request and went back to school. He attended Union College for a short time before returning to work at his father's machine shop. During this time he developed a rotary steam engine and a device that was able to replace derailed railway cars. But it was while on a railroad trip in 1866 that he got the inspiration for his most famous invention.

While riding on a train, he recognized that existing braking systems were not capable of stopping a train adequately. Early train brakes were often inadequate and caused as many deaths as accidents. As a result, he returned home and designed the first air braking system for railway cars. The system used compressed air and would revolutionize railway travel. He patented the device at age 22 and founded the Westinghouse Air Brake Co. Building upon his success, he next founded the Union Switch and Signal Co., a company that used his own designs and those of others to improve railroad signaling and switching. In 1881, he perfected the automatic block signal, which helped alert train engineers to track blockages. Within 10 years, from 1880 to 1890, he patented more than 130 inventions, all mechanical devices ranging from air brakes to electrical apparatuses and steam turbines.

At the age of 40, he started the Westinghouse Electric Co., a pioneer in alternating current (AC), developed as an alternative to direct current (DC). He purchased an English patent, and his company began developing AC motors in order to transmit high-tension current. One of his projects was the development of an electric chair using alternating current, putting him in competition with Thomas EDISON, who was the bestknown advocate of DC. In 1893, he won the contract to supply electricity to the Columbian Exposition. After that time AC began to win the battle with DC and would become the most widely used electrical transmission system in the country. He then signed mutually agreeable licenses with the GENERAL ELECTRIC CO., and the two began sharing patents and technology. He also helped in the development of hydroelectric power at Niagara Falls in 1896. Westinghouse became one of the largest companies in the country by 1900, employing more than 50,000 people.

Westinghouse lost control of Westinghouse Electric in 1907 because of financial problems but retained control of his other companies. The company became a leader in railroad electrification and then began moving into consumer products in the 1920s. Its main competitor was the General Electric Company. After World War II, the company produced electrical turbines for the UTILITIES industry but began losing market share to GE after some of its turbines proved defective. The same problem occurred again when engines it supplied to the San Francisco Bay Area Rapid Transit Company proved defective.

During his lifetime, Westinghouse held more than 360 patents, not all of which were in electricity. He held one for a telephone switching system, and his ideas also were used to harness the energy produced by Niagara Falls. The first radio station in the country, KDKA in Pittsburgh, was a Westinghouse station, and his company went on to become a major producer of electrical appliances and atomic-powered submarines and ships.

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Weyerhaeuser, Frederick (1834–1914) *timber executive* Born in Niedersaulheim, Germany, Weyerhaeuser immigrated to the United States in 1848 with his mother and sister. Originally, he became a day laborer in Pennsylvania before moving to Illinois, where he worked as a supplier of lumber and grain for the Rock Island and Pacific Railroad. Working his way up the ladder at the Rock Island, he saved enough money to buy a sawmill and a lumberyard after the Panic of 1857 and then began acquiring additional sawmills. During the Civil War, he began buying timberland in Wisconsin and then began buying more land in the West.

After the war, his company participated in the Mississippi River Boom and Logging Company, a monopoly of lumber interests along the river. Weyerhaeuser became friendly with railroad baron James J. HILL when he moved to Minnesota in 1891, and eventually his company bought 900,000 acres from the Northern Pacific Railroad for \$5.4 million and started the Weyerhaeuser Company near Tacoma, Washington, in 1900. The company became the largest timber and lumber company in the United States at the time and built what were considered to be the finest sawmill facilities ever seen in the Unites States.

Throughout his career in the LUMBER INDUSTRY, Weyerhaeuser constantly advocated conservation and protecting nature. He was the largest owner of timberland in the United States and was considered one of the country's wealthiest men, although he avoided the public spotlight. He died at the outbreak of World War I.

During the 1930s, the company began selling wood pulp and began specializing in reforestation and management of timberlands. After World War II, it began expanding into other building products. The company went public in 1963 and began diversifying in order to protect itself from the vicissitudes of the lumber business. In 1983, it purchased the GNA Corp. and diversified further into financial services and annuities. In the late 1980s and early 1990s, the company returned to its traditional strengths by selling off some of its previous acquisitions and extended its operations into Georgia by purchasing almost 200,000 acres of Georgia forestland. In 1995, it began expanding its operations outside the United States.

Weyerhaeuser, along with the Georgia-Pacific Corp., remains one of the largest owners of timberland in the United States, owning more than 5 million acres in the Northwest and Georgia. It also holds rights to almost 20 million acres in Canada. It is one of the largest producers of building products and wood derivative products in the United States and also maintains a sizable presence in financial services.

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Wharton School The business school of the University of Pennsylvania, Wharton was established in 1881 through a \$100,000 gift from Joseph Wharton (1826–1909), an industrialist who later donated more money to ensure the school's success. Wharton wrote the university asking it to create a business school to prepare young men for the rigors of the industrial economy. It was the first collegiate school of business and initially awarded only undergraduate degrees. The Wharton School named its first business professor two years later.

The school awarded its first degrees to women in 1908. A year later, it began offering courses in advertising and salesmanship, originally offered in the merchandising department, the original name for marketing. The courses were in recognition of the inroads made by marketing in selling all sorts of goods before World War I. The new discipline was instrumental in the rapid growth of CHAIN STORES and retailing, which exploded in popularity and numbers in the 1920s after World War I was over and the American consumer had more disposable income.

An MBA degree was added in 1921, but unlike the example set by the HARVARD BUSINESS SCHOOL, the case study method was eschewed in favor of students specializing in a particular area and writing a thesis on a chosen topic of interest. In the 1920s, Wharton also became the leading center for insurance study and research, helping to lift jobs in the life insurance industry onto a level with many other professions.

After World War II, the school opened a center for the study of finance, becoming one of the leading centers in the country in financial research. The popularity of postgraduate degrees in the 1960s made the school better known for its MBA than its undergraduate degrees, although undergraduate education remained a fixture at the school. By the 1970s, it was recognized as one of the top three business schools in the country, offering a range of specializations not found in most schools. In 1988, it became the first American business school to establish representative offices overseas, marking the beginning of overseas affiliations for the top American schools in general and recognition of the increasingly global nature of business education. In 2000, it opened a permanent branch in San Francisco, dubbed Wharton West, and later forged an alliance with INSEAD, the French business school also with overseas branches.

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Whitney, Eli (1765–1825) *inventor* Whitney was the inventor of the cotton gin. Born in Westboro, Massachusetts, the son of a farmer, he originally stayed at home and tinkered with various mechanical devices before deciding to go to college at age 24. He graduated from Yale in 1792 after having taught school for five years in order to afford the tuition. After graduation, while on a trip to Georgia, he recognized the need for a machine that was able to separate cotton from its seed. He quickly developed the cotton gin, or jenny, within a year of graduating from college. A patent was granted for the device in 1794, and he began producing the machines in a factory in New Haven, Connecticut.

Originally, Whitney and his partner, Phineas Miller, decided to process cotton for a royalty rather than sell the machines to farmers but were soon faced with the problem of imitations that allowed farmers to avoid the royalty payments. As a result, he filed many lawsuits against imitators who were producing similar machines copied from his. His patent was confirmed in 1807 but expired in 1812, and he failed to profit from his invention, which by that time was already in widespread use.

His invention quickly revolutionized agricultural production in the South, where the separation of seed from cotton had previously been done by hand. But legal problems and a fire at his factory slowed production to a trickle, and then Congress refused to renew his patent when it expired. However, since 1798 he had been involved with manufacturing muskets for the army. He devised a method whereby the parts for rifles became standard rather than being individually produced by a gunsmith. As a result, the army could use standard produced rifles, at a great cost savings and with greater efficiency. It was then possible to assemble a musket from the parts he produced rather than to build each one individually. He obtained a contract to produce rifles during the War of 1812, although his success was only modest. In such a manner he became the father of MASS PRODUCTION, although his legacy centers almost entirely on the invention of the cotton gin.

Whitney is the best example of the sort of inventiveness that Alexander HAMILTON envisaged would make the United States independent of Great Britain after the Revolution, in what was still a mercantilist economy. The cotton gin was one of the first true American industrial inventions that would help shape the COTTON INDUSTRY. It revolutionized cotton production in the South and greatly aided American exports, while the concepts Whitney employed in making muskets helped turn the country into a strong manufacturing economy in the decades ahead.

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Whitney, Richard (1888–1974) *stockbroker* Born in Massachusetts, Whitney was descended from immigrants who arrived in the 1630s. His father was a well-known Boston banker. Richard graduated from Groton and Harvard and went to New York, becoming a member of the NEW YORK STOCK EXCHANGE (NYSE) in 1912. He became a broker for J. P. Morgan & Co., where his brother George was a partner. He assumed command of his father's investment banking business and renamed it Richard Whitney & Co.

Whitney became a member of the NYSE board in 1919 and became a spokesman for the exchange during the decade that followed, when he became one of the NYSE's best-known figures. He achieved nationwide notoriety in 1929 during the crash. At J. P. Morgan's behest, he entered the exchange floor as the market was falling and entered an order above the market for 10,000 shares of U.S. Steel, designed to demonstrate bankers' support for the market. At the time, he was acting president of the exchange. He also entered other orders personally during the few days in which a bankers' consortium continued to supply funds to the market. But his actions were in vain as the index dropped and did not recover. Whitney's actions and his other pronouncements during the 1920s and early 1930s earned him membership in the "Old Guard," those dedicated to maintaining the status quo on the NYSE.

During Senate hearings following the crash in 1932 and 1933, he staunchly defended the NYSE against outside criticism, especially over the issue of short-selling, which many critics blamed for further drops in the market index. As criticism of the NYSE and Wall Street increased in the mid-1930s, Whitney decided not to run again for the presidency of the exchange. He became heavily involved in speculative adventures in the 1930s, borrowing heavily to support his investments. In 1938, it was revealed that he had been embezzling funds from the Gratuity Fund of the NYSE, a fund designed to aid older exchange members and had then embezzled more money from accounts at his own firm to cover them up. He was indicted shortly thereafter, convicted of fraud, and sentenced to five to 10 years imprisonment. He subsequently was incarcerated at Sing Sing, becoming the first and only NYSE president to serve a prison term. Upon his release, he moved to Massachusetts and dropped out of public view.

Whitney's time as president of the NYSE was pivotal in the history of finance because it marked a turning point in the REGULATION of INVESTMENT BANKING and the exchanges. When the Securities Exchange Act was passed in 1934, it marked a decided shift from the Old Guard to a new, regulated environment.

See also Morgan, John Pierpont, Jr.; Securities Exchange Act of 1934.

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Winfrey, Oprah (1954–) television personality Oprah Gail Winfrey was born in Kosciusko, Mississippi, on January 29, 1954, the illegitimate daughter of two farmworkers. She acquired her name by default; originally intended to be called by the biblical moniker Orpah, it was misspelled Oprah and stuck. Raised by her grandmother, a strict disciplinarian, she exhibited a gift for oratory at an early age. However, at six she relocated with her mother to a ghetto in Milwaukee, Wisconsin, and became a teenage delinquent. Winfrey was then allowed to move in with her father in Nashville, Tennessee, which changed her life. He was another strict disciplinarian who gave her guidance, made her read, and let her practice public speaking in church. Winfrey flourished under the new regimen, and she became an honors student in high school. While attending Tennessee State University on a scholarship, she displayed a talent for television broadcast news and was hired at WTVF-TV as a part-time news announcer. Winfrey subsequently graduated in 1976 and took a full-time announcing position with WJZ-TV in Baltimore. Within months she began giving local news updates during the nationally televised Good Morning, America program, which gave her additional exposure. Winfrey made such a good impression on superiors that within a year she was tapped to cohost the morning show *Baltimore Is Talking*. Her smooth delivery and penchant for empathy continually pushed her up the broadcast ladder until January 1984, when she transferred to the important Chicago market to host *A.M. Chicago*. Winfrey, using her considerable broadcast instincts, revamped the format from traditional women's issues to contemporary and more controversial ones, and began pulling ahead of the vaunted *Phil Donahue Show*. Consequently, in September 1985 Winfrey expanded her program to a onehour format as *The Oprah Winfrey Show*.

Few media pundits could have anticipated the following events. Winfrey's show completely capitalized on the host's powers of empathy with other women and her willingness to tackle controversial subjects such as rape and child abuse. For maximum effectiveness, she opted against using prepared scripts and interacted smoothly and spontaneously with her audience. As Winfrey's ratings soared, she was tapped by producer Quincy Jones to appear in the Steven Spielberg movie The Color Purple in 1986, to rave reviews. Her newfound celebrity only pushed her ratings higher, and in August 1986 Winfrey founded her own production company, Harpo (Oprah spelled backward). She thus became the first African-American woman to produce her own programming and only the third woman, after Mary Pickford and Lucille Ball, to own a production company. By this time The Oprah Winfrey Show was also America's most highly rated talk show, with a viewing audience of 22 million.

In addition to her televised activities, Winfrey has also sponsored a number of television dramas focusing on the African-American community and produced them through her company. As a victim of child abuse herself, she offered vocal support for federal child protection legislation to track convicted child abusers. In September 1996 her career took a particular turn when she declared her intention to "get the country reading" and founded the Oprah Book Club. Here she would tout recent fiction, self-help, or inspirational titles, most of which went on to become overnight best sellers. Winfrey was widely sought after for her endorsements, but the demand proved so overwhelming that she modified her book club philosophy in 2002, only recommending literature drawn from the classics, until 2005, when she once again included contemporary works. From her modest beginnings, Winfrey's climb to fame has seldom been matched in the entertainment industry. By dint of intelligence, drive, and sheer personality, she carved out a niche for herself in the highly competitive world of talk show television and emerged as one of the highest-paid entertainers in history, with an estimated annual income of \$40 million. "I don't think of myself as a poor, deprived ghetto girl who made good," Winfrey maintains. "I think of myself as somebody who from an early age knew she was responsible for herself-and I had to make good."

Further reading

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John C. Fredriksen

women in American business In 1975, historian Caroline Bird wrote, "If you believe what you read in history books, the prosperity of America is strictly man made." Bird's *Enterprising Women* was the first serious study of women in business in a generation and a harbinger of what has become a sustained exploration of women and gender in American business history. While research in this field is ongoing, a number of general trends are becoming clear. Whereas men took the reins of power in the railroad, steel, mining,

and construction industries, women clustered in trades and industries that required less capital and whose products and services tended to be for women or for household use (retail trade, health care, the beauty and fashion industries, and more recently in finance and real estate). In contrast to men's independent decision making, women generally calculated business decisions against the conflicting claims of family duty. Further, custom and law opened doors to training, education, and capital for men that remained closed to women until the very recent past. As a result, businesswomen devised innovative personnel, managerial, and financial strategies that satisfied their family responsibilities and legal disabilities. They pioneered organizational and managerial practices that infused an ethic of public service into the definition of business success. They met gendered proscriptions against going into business with new prescriptions that valued "independent womanhood" as a mark of female success.

The study of women in American business is pushing historians to move beyond narrow considerations of leadership to reexamine the forces driving economic change. The expansion of 19thcentury commercial agriculture becomes more comprehensible as historians recognize the household as a business enterprise in the family economies of rural America. The success of mass production technologies in the early 20th century becomes more understandable as scholars consider the way gendered appeals stimulated a mass consumer demand. The continuing importance of small business amid the explosion of global markets in the late 20th century takes on a new significance as investigators examine changes in family and community life.

Six months after proclaiming independence, the Continental Congress contracted with Mary Katherine Goddard (1738–1816) to print the first signed copy of the Declaration of Independence. Goddard, publisher of Baltimore's leading newspaper, the *Maryland Journal*, was a logical choice for this important and dangerous job. Like many women of her time, Goddard learned this traditionally male craft as an assistant in the family business, in this case her brother William's various printing enterprises. It was Goddard's fate, however, to have a brother whose attention quickly moved from one venture to another. In each case, Katherine Goddard and, until her death, her mother, Sarah Goddard, stepped into the breach and ran the printing business when William moved on. Thus, when Katherine Goddard took over management of her brother's latest venture in Baltimore in 1774, she had more than 10 years of experience in the printing business. She quickly established her own credentials by coming out from behind her brother's shadow and printing her own name as publisher on the Maryland Journal's masthead. By the time Goddard received the contract to print the Declaration of Independence, she had established her newspaper's reputation in the highly charged atmosphere of revolutionary America, was serving as the first female postmaster in colonial America, and had begun her own financially successful bookbinding and bookselling business.

While Mary Katherine Goddard was more successful than most, she was not unique. Rather, Goddard acted within a well-established colonial tradition of female entrepreneurship, a tradition that grew out of the necessities of the colonial family economy. Whether engaged in farming, trade, or craft, American colonists worked within family enterprises whose success depended on the labor of all family members. The colonial woman's title of "good wife" or "helpmeet" clearly reflected her important role in the family enterprise. The colonial farmer knew that commercial success required not only his and his sons' labor in the fields, but also his wife and daughters' field labor at critical times of the year. The colonial shopkeeper and craftsman depended on female family members to meet customers and suppliers, care for stock, and, as in Goddard's case, acquire expertise at various stages of his craft (which launched a small number of women into a range of traditionally male crafts, including printing, glassblowing, blacksmithing, and upholstery). In the event of a husband's prolonged absence these women gained the authority to manage the business as "deputy husbands."

The colonial woman, however, did not simply work as an assistant. She frequently developed her own petty business, which formed part of the overall family enterprise or, if single or widowed, was the family enterprise. Rural women produced home manufactures (of cheese, yarn, woven cloth, clothing, baskets, feather beds, and other necessities) to barter in local markets for the food, household goods, and in some cases cash that they and their family did not produce. Urban women engaged in an even wider range of business activities, specializing in retail shopkeeping, brewing and tavernkeeping, running boardinghouses, and dressmaking. While the historical record is not entirely clear, some historians have estimated that as many as half of all retailers in 18th-century colonial cities were women. These merchants supplied their customers with both locally produced and imported goods, specializing in dry goods, food, and alcoholic beverages. In the 1750s, for example, Mahetabel Hylton, a widowed merchant in colonial New York, advertised "a large assortment of European and East India Goods" plus cordage, earthenware, pepper, snuff, bar iron, gunpowder, shot pipes, candles, and Madeira wine. About 50 years earlier another widowed merchant, Helena Rombouts, reported to the New York customs house that she was exporting hundreds of deer and racoon skins to London and importing more than 2,600 gallons of West Indian rum. Records suggest that women ran 40 percent of Boston's taverns in 1690.

Whether active in women's crafts or home manufactures or competing with men in shopkeeping or printing, colonial businesswomen operated within legal constraints that were unique to their sex. British common law classified women as either *femme sole* (woman alone) or *femme covert* (woman covered). The *femme sole* could own and sell property, make contracts, sue and be sued, and will property to others. A woman acquired femme sole status only if she reached majority age (commonly 21 years) and remained unmarried. Prior to this and after marriage she was femme covert, subsumed under the legal identity first of her father and then of her husband. Thus, most women never acquired femme sole status, or did so for only a very few years. The vast majority of colonial women lived as femme covert, a legal status that prohibited them from owning property, making contracts, suing and being sued, or willing property to others. This legal invisibility meant that married women could not perform the most basic functions necessary to establish or expand a business (borrowing money, selling property, enforcing contracts). Whereas many colonial husbands could rely on their wife's dowry to build or expand their business, as did Benjamin Franklin and George Washington, few colonial women had a legal right even to their own dowry. As a consequence women frequently entered business (or at least appeared in the historical record) at an older age than men, often as a result of widowhood. Widows gained most of the rights of the femme sole. However, colonial inheritance laws, which granted a widow use rights only in onethird of her deceased husband's estate, meant that widows generally did not have full legal control over properties they inherited. Thus, they could not sell or will away, and often could not acquire credit against, those properties.

Women in the short-lived Dutch colony of New Amsterdam were the exception to this general picture, an exception that demonstrates the impact of these legal disabilities. Dutch law, in contrast to British common law, recognized women's rights in property. Thus, merchant Margaret Hardenbroeck continued in local trade during her yearlong first marriage. Widowed in 1661, Margaret inherited full title to a 50 percent share of her husband's estate and used it to buy two ships for the transatlantic trade. Although she married a wealthy trader the following year, Margaret Hardenbroeck Philipse continued in the lucrative transatlantic trade, often traveling with her trading ships until 1690.

Few colonial businesswomen were as successful as Goddard or Hardenbroeck. Lack of access to education and capital, combined with time-consuming household and family duties, placed severe restraints on what most women could hope to achieve. Rather than measuring women's business success by the wealth or power they amassed, we might do better to measure success against the alternative of failure. Businesswomen often eked out a poor living that managed, through dint of hard work and perseverance, to keep them and their children off the poor rolls. Rachel Draper, widowed with two small children in the years leading up to the American Revolution, typified the colonial businesswoman. Draper held licenses to run a small tavern, probably out of her Philadelphia home, and take in boarders. Although she was apparently too poor to appear on the tax rolls, Draper did succeed in providing an independent living for herself and her children.

Family duty, rather than a desire for profits, drove Elizabeth Hobbs Keckley (1818-1907) into the dressmaking business. Born into SLAVERY, Keckley began sewing fine women's dresses after she persuaded her impoverished owner to send her, rather than her aging mother, out to work in the homes of strangers. Keckley's labors soon provided enough money to support a household of 17 people, masters and slaves. In 1855, a wealthy client loaned her \$1,200 to buy freedom for herself and her son. Keckley quickly headed north, establishing dressmaking businesses in New York, Baltimore, and, finally, Washington, D.C. Keckley's business thrived in Washington, where her skill made her the most popular dressmaker in the nation's capital. By the eve of the Civil War, Keckley employed more than 20 assistants in a large dressmaking shop. In addition to providing a comfortable living for herself and her son, Keckley committed a portion of her profits to philanthropic work, organizing the Contraband Relief Association and founding the Home for Destitute Women and Children. Mary Todd Lincoln hired Keckley as her personal dressmaker and soon came to rely on Keckley as her close friend and confidante. Keckley's decision to write an autobiography, *Behind the Scenes or Thirty Years a Slave and Four Years in the White House*, led to the collapse of her business. The story revealed details of the Lincoln family life that led Mary Lincoln to end their friendship and many African Americans to accuse Keckley of disloyalty to Lincoln the liberator. Keckley spent her final days in the Home for Destitute Women and Children.

Like Keckley, most women entered business in order to provide for themselves and their children. Similarly, most 19th-century businesswomen engaged in activities tied to household products or skills. According to one estimate, two-thirds of women in business at that time were proprietors of dressmaking, mantua-making, seamstress, or millinery operations. The second-largest number of businesswomen ran boardinghouses, restaurants, and, particularly in western states, brothels. In addition to these large clusters, businesswomen established themselves in a wide variety of trades and services that catered to daily needs. In Albany, New York, mid-19th-century businesswomen owned and managed bookstores, shoe shops, groceries, ornamental hair shops, and manufactories. Although women in small towns were the most likely to become entrepreneurs, rural women's petty businesses provisioned much of the nation. Throughout the antebellum period, for example, women produced and marketed the vast majority of milk, cheese, and butter consumed by Americans. One historian attributes increased butter production during this era to farmwomen's inventiveness and adaptation of existing processes and tools. In addition to food production, women's businesses could be important venues of food distribution. Free black women in the South engaged in retail trade in even larger numbers than did free black men, peddling a wide variety of foodstuffs from carts or small stands to a largely white clientele. While businessmen clearly outnumbered businesswomen, the significance of entrepreneurship in women's lives is suggested by the fact that in the Midwest in 1870, women in business outnumbered women factory workers by 4,000 and that there were as many women engaged in business as in teaching.

A small but influential group of female reformers introduced a new element into 19thcentury business formation, a development that historian Virginia Drachman has called "profit in the service of women." Education reformers led by Emma Willard, Mary Lyon, and Catherine Beecher conceptualized their new curriculum for women as a new "product." In place of traditional finishing schools intended to prepare women for genteel domesticity, these education reformers built female academies that offered an academic secondary education that prepared young women for careers in teaching. Their successful, although often short-lived, efforts to open female academies across the country introduced a new kind of business into the American landscape. Unable to tap into the loans and credit available to hopeful businessmen, these educational entrepreneurs also innovated new strategies for raising capital. In 1821, Emma Willard, founder of Troy Female Seminary, convinced city officials in Troy, New York, to invest public monies in her enterprise. More typically, these businesswomen embarked on speaking tours that served both as advertisements for their educational ideas and as organizing forums for fund raising. In addition to collecting funds through paid admissions to their lectures, educational entrepreneurs used their speaking tours to organize associations of paid subscribers who, they hoped, would provide the long-term financial stability their schools needed.

Ellen Demorest, who invented paper dress patterns and, along with her husband, created a fashion empire in the mid-19th century, connected profits with service as well. In the 1850s, Demorest integrated African-American women on her production floor. Two decades later, she and businesswoman Susan King cofounded the Woman's Tea Company with the express purpose of making profits while creating business opportunities for other women; the Woman's Tea Company employed only sales*women*.

Although Demorest and King were able to use personal fortunes to finance their international trading company, the fact that most female academies closed their doors within 10 years reflected both the instability of 19th-century business ventures in general and the particularly precarious financial situation faced by most female entrepreneurs. While women's access to credit remained extremely limited, changes in women's legal status made it possible for a growing number of women to enter the business arena. The first significant change came with the post-Revolution codification of laws that abolished primogeniture. This democratic change created a system of inheritance law that allowed women, as well as all sons, to inherit real property. Further changes in women's legal status grew out of women's concerted demands for property rights. The first women's rights movement, dating from the Seneca Falls Convention in 1848, established women's property rights as one of its most important demands. Decades of campaigning brought some relief by the end of the 19th century. In most cases this took the form of extending the rights of femme sole status to married women. Between 1830 and the 1880s, every state passed laws that granted some form of property rights to married women. Depending on the state this included the right of married women to negotiate contracts, to buy, sell, or mortgage property, or to control their own earnings. Some states, recognizing the volatility of the American economy, protected a married woman's property from being seized to pay off her husband's debts.

While providing new rights to married women, 19th-century laws continued to limit women's access to property in significant ways. For example, in the mid-19th century, fewer than half the states allowed women to serve as executors of wills, a right that would be recognized

nationwide only in the late 20th century. Many states refused widows access to their husband's personal property. Alongside this general trend, regional variations meant that particular groups of women faced different sets of legal freedoms and barriers. For example, women living in the Mexican cession lands (ceded to the United States following the Mexican-American War) continued to enjoy rights based on existing community property laws, which recognized that husbands and wives had equal shares in marital property. On the other hand, some southern states imposed legal restrictions intended to limit free black women's ability to engage in the retail trades on which so many depended. This included, for example, prohibitions against selling such items as beer, fruit, cakes, or candy.

Operating businesses that catered to local markets, often serving a female clientele that did not control its own resources, and bucking the emerging Victorian ideal that defined women's sphere as the home, few women in the 19th century could acquire the skills or resources that would have allowed them to compete at the cutting edge of the newly industrializing economy. However, scattered evidence suggests that 19thcentury businesswomen were somewhat less likely to be living on the edge of destitution than were their colonial counterparts. One study found that between 1850 and 1880, businesswomen in the Midwest reported personal assets averaging \$500, the equivalent of a year's income for a wage-earner. Some women did even better, achieving remarkable success. Among these were Martha Coston (ca. 1826-ca. 1902). Widowed at 21 and with three small children, her husband's inability to perfect an idea for night flares had left his pyrotechnic laboratory in precarious financial condition. Within a few years, Coston succeeded where her husband had failed, inventing colored night flares that, after intensive lobbying, were purchased by the U.S. Navy. Coston Night Signals were widely credited with ensuring Union victories during the Civil War; as Coston continually improved on her original design, they became standard safety equipment on boats and ships well into the 20th century.

Born to struggling tenant farmers in Canada, Florence Nightingale Graham (1878-1966) decided to leave home and seek her fortune when she was 30 years old. After joining her brother in New York, Graham moved through a series of jobs before settling in as cashier at Eleanor Adair's beauty parlor. There, Graham eventually worked her way up to a position as a "treatment girl." Soon, she and a fellow worker decided to try the business on their own. Within a short time Graham bought out her partner, redecorated the shop, and assumed a name that seemed more befitting to the upscale clientele she hoped to attract, Elizabeth Arden. Over the course of the next 30 years, Arden would employ chemists to develop a widening line of beauty products, open salons across the United States and in Europe, introduce beauty products into elite department stores, and redefine American ideas about beauty and cosmetics. By the mid-1930s, Arden's cosmetics empire included 26 salons worldwide, employed 1,000 people, and grossed more than \$8 million a year.

It does seem clear that despite their small numbers, businesswomen were active creators of the modern corporate system. In fact, recognizing the empires built by businesswomen such as Elizabeth Arden and Helena Rubenstein in cosmetics, Madame C. J. Walker in hair care products, and Ida Rosenthal, creator of Maidenform, in fashion, corrects a mistaken impression that modern corporations existed primarily in heavy industry. These women's significance extended beyond their ability to amass fortunes; by 1930, cosmetics was the 10th-largest industry in the United States. In many respects, it was pioneering businesswomen of this era who ensured that MASS PRODUCTION and mass consumption permeated deeply into all corners of the expanding economy.

While women engaged in big business confronted the same kinds of financing, organizational, and marketing issues that faced big

business men, more research is needed to better understand the extent to which their solutions may have differed from men's. Two differences, however, are striking. Reinventing the practice of "profits in the service of women," the most successful African-American businesswomen owed their fortunes to business practices designed to promote racial uplift. Annie Turnbo Malone, founder of Poro hair care products in St. Louis, designed a sales strategy that offered African-American women dignified work and an opportunity to build their own customer base. One of her sales agents, Sarah Breedlove, demonstrated the full potential of this business strategy. Breedlove was working as a washerwoman when Malone recruited her to be a sales agent around 1902. By 1905, Breedlove had decided to strike out on her own. Like Arden, she added style to her product by renaming herself Madame C. J. Walker; when her business grew sufficiently to employ sales agents, Walker adopted Malone's policy of grooming them as independent businesswomen rather than as company employees. By the time of her death in 1919, 25,000 Walker agents sold her products nationwide. Walker had joined the ranks of the wealthiest Americans and was living in a mansion on the Hudson River.

Another striking characteristic, evident among the most successful businesswomen of the 19th century as well, was the tendency to bring their husbands (or sons) into the business as full partners. Ida Rosenthal handled the business side of Maidenform, while her husband served as the creative partner. An opposite division of labor characterized Ellen Demorest's successful partnership in the 19th century; Demorest was the creative and fashion genius, while her husband innovated marketing practices that spread Demorest fashions into homes nationwide. This practice of female-directed partnerships stands in contrast to the pattern that developed within male-directed corporations, where men's success was measured, at least in part, by the separation of their work from the domestic and philanthropic concerns of their wives.

Few businessmen or businesswomen, of course, could aspire to this level of success. In fact, as the scale of business operations grew, managerial bureaucracies replaced individual entrepreneurs as the driving force in American business. Women, however, were largely excluded from this expanding arena. Women, who were presumed to be dependent, submissive, and domestic, seemed inherently unfit for the demands of executive management. Nevertheless, a small number of women did find positions in the expanding corporate bureaucracies. According to one estimate, on the eve of World War II women constituted about 10 percent of all middle managers. Significantly, many of these women entered management by capitalizing on the very gender ideas that defined women as unfit for business management. The first group of women to enter the ranks of corporate management pioneered the field of labor relations. Originally called welfare secretaries and later welfare managers, these women (and male colleagues in similar positions) offered a solution to the destructive confrontations between workers and employers at the end of the 19th and beginning of the 20th centuries. Women such as Gertrude Beeks at INTERNATIONAL HARVESTER, Elizabeth Briscoe at DuPont, and Mary B. Gilson at Joseph Feiss & Sons, called for a new kind of labor management, modeled on the harmonious Victorian family. Welfare managers promoted managerial qualities that combined feminine compassion, self-sacrifice, and cooperation with masculine discipline, rationality, and perseverance. Although the corporate welfare system failed to solve class conflict, welfare managers were responsible for introducing labor relations as a permanent management responsibility and were instrumental in defining the modern managerial ethos.

In addition to labor management, some businesswomen found positions as heads of departments that catered specifically to women. The largest group of these worked in middle management positions as department store buyers. According to one estimate, 40 percent of buyers in the mid-1920s were women. Buyers needed a keen sense of fashion as well as an ability to manage a largely female sales force. Another small door opened as bank and insurance companies hired women to head new "women's departments" created to attract a growing female clientele.

As their numbers grew, businesswomen began to form organizations to support their involvement in a world clearly dominated by men. In the 1910s and 1920s, businesswomen established general associations that welcomed women from an array of business sectors (National Federation of Business and Professional Women's Club), as well as special associations for women active in a common profession (Association of Banking Women). These clubs organized social as well as political activities, and many published newsletters. The BPW's Independent Woman, one of the largest circulating women's magazines of the early 20th century, helped to define the New Woman of the 1920s, addressing its readers as professionals seeking personal independence and offering advice about balancing career and marriage. When the public mood shifted during the Great Depression, the magazine devoted increasing space to home and fashion.

Women's entry into these new business arenas is particularly remarkable given the fact that their legal status had changed very little and, in one respect, could be considered to have become more restrictive. With few exceptions, the femme sole rights acquired by the 1880s remained intact but were not expanded; also, women's limited property ownership meant that access to credit remained extremely limited. Access to higher education, expanding until more than 40 percent of all college students in the 1930s were women, also remained restrictive. Most of the new university schools of business, for example, did not accept women. During the early decades of the century, social reformers successfully introduced state and local legislation to protect women workers. Although protective legislation affected wage-earners only, it did reinforce patriarchal ideas about women's frailty and domesticity. At the same time, most businesswomen and their organizations were active in the women's suffrage campaigns. While its impact was not immediate, businesswomen understood that they could use the suffrage issue to protect and further their interests. Equally important, suffrage work demonstrated their ability and their claim to act as independent women in the public arena.

As a girl Debbi Sivyer (1956–) liked to bake cookies, especially chocolate chip cookies. As a young wife Debbi Sivyer Fields baked cookies for her husband's business clients. However, neither her husband nor his clients showed much enthusiasm when Fields decided to turn her domestic talents into a profit-making enterprise. Driven by a desire to make something of herself, Fields defied their skepticism and applied for a business loan. Persistence and free product samples finally persuaded one banker to make the \$50,000 startup loan. Further defying normal business practice, Fields decided to locate her cookie store in a shopping mall. Mrs. Fields Chocolate Chippery opened in 1977, ringing up \$75 in sales the first day. At the end of the first year Mrs. Fields Cookies had grossed \$250,000. By the time she was 25 Debbi Sivyer Fields had turned her favorite pastime into a multimillion-dollar business. Her success opened the door to other mall-based specialty food shops. In 1990, Mrs. Fields Cookies operated almost 500 stores in 50 countries. Its founder and president was actively managing the company and raising five daughters. Fields sold her company in the early 1990s for \$100 million.

Fields typifies both the continuity and change that characterized women in American business at the end of the 20th century. As in the past, most female entrepreneurs offered products or services connected to women's needs or domestic skills. A mid-1950s survey conducted by the Federation of Business and Professional Women (BPW) found that almost 33 percent of respondents owned retail firms. Another 35 percent



Woman working on an airplane engine during World War II (LIBRARY OF CONGRESS)

owned companies in female-related areas of personal services, education, hotels, and restaurants. Almost 40 years later, the U.S. Census Bureau reported that the largest proportion of women-owned businesses, 55 percent, was engaged in personal services, with retail trade accounting for the second-largest concentration, 17 percent. As in the past, most women's businesses remained quite small. Only 15 percent of women-owned firms in 1997 had paid employees, and 30 percent reported annual receipts of less than \$5,000. The small scale of women's businesses reflected, in part, ongoing differences in men's and women's access to credit and loans. Businesswomen were significantly more likely than men to finance their enterprises using personal savings, CREDIT CARDS, or family loans. Reports in the mid-1990s found that more than 50 percent of all women-owned businesses used credit cards as a source of business financing, compared to less than 20 percent of all small businesses that relied on credit card financing. Although credit cards provided access to a new source of personal capital, women's dependence on personal and family resources to finance their

business ventures continued a pattern that stretched back over two centuries.

Yet the business landscape did change in significant ways. Certain trends evident in the early 20th century had profoundly affected women's business opportunities by the end of the century. Dressmakers and milliners, who made up the largest number of businesswomen in the mid-19th century, accounted for one-half of 1 percent of the women-owned businesses reported to the BPW in the mid-1950s. Farmwomen's petty trade in cheese, eggs, and garden vegetables gave way during this period to industrial-scale production and wholesaling. By the end of the 20th century, farmwomen were much more likely to be working in town for wages than selling their own farm products. At the same time, businesswomen began to gain footholds in traditionally maleexclusive business sectors, including construction, manufacturing, and financial services. Women-owned firms grew from less than 2 percent of all construction companies in 1977 to almost 6 percent in 1987. During the same decade, women's ownership of manufacturing firms more than tripled, from 7 percent to 21 percent. Businesswomen's movement into finance, insurance, and real estate was even more substantial; by 1990 women owned more than 35 percent of the firms in these sectors, up from less than 5 percent in the 1970s.

Notably, these traditionally female sectors achieved new importance in the consumer-based postwar economy. Rather than functioning at the margins of the economy as in the past, women's businesses have become concentrated in core sectors of the American economy. Equally noteworthy, women-owned businesses were at the leading edge of the postwar expansion of the small business sector. In 1977, women owned 7 percent of all business firms in the United States. A decade later, that number had grown to 30 percent, and by the end of the century 8 million female entrepreneurs owned almost 40 percent of American business firms. Of these, 13 percent, more than 1 million enterprises, were owned by

women of color. The Foundation for Women Business Owners (FWBO) reported that during the last decade of the century the number of women-owned businesses grew at almost twice the national rate of business growth. At the end of the century, women-owned businesses employed almost 20 million workers, more than 25 percent of the American workforce. At the same time, businesswomen continued to innovate management and business practices that combined service with profit making. In the mid-1990s, the FWBO reported that women-owned businesses were much more likely than the average business to offer flex-time schedules, job sharing, and tuition reimbursement. Almost 85 percent of women-owned businesses offered one or more of these benefits. For reasons that are not yet clear, female entrepreneurs seem to be navigating the difficulties of small business ownership more successfully than men. A 1995 Dun and Bradstreet study found that women-owned firms were more likely to stay in business for three or more years than was the average business firm.

These gains in business ownership must be balanced against the emergence of corporate management as the primary form of business leadership in the late 20th century. In many respects, corporate officers have replaced the individual entrepreneur of the previous century as the prototypical businessperson. Census records show that an increasing number of women moved into upper levels of business leadership in the last quarter of the 20th century, accounting for more than 5 percent of such positions in the mid-1970s and holding more than 12 percent of executive, administrative, and managerial positions by the mid-1990s. Among the most successful of these women are chief executive officers Carleton Fiorino at Hewlett Packard Company, Andrea Jung at Avon Products, Anne Mulcahy at Xerox, Patricia Russo at Lucent Technologies, and Meg Whitman at e-Bay Technologies.

Although this represents substantial change, there is much evidence that a "glass ceiling" con-

tinues to limit women's access to executive leadership. The glass ceiling reflects a combination of challenges, including ongoing questions about women's dual commitments to career and family and a tendency to denigrate women for the kind of assertiveness that would be praised in male executives. In addition, women who move onto the lower rungs of management often find that they cannot reach the highest executive offices. The clerical, public relations, marketing, and labor relations positions through which most women move into management, classified as "staff positions," are generally excluded from the promotional ladder leading to executive leadership, which draws from "line positions." The research institution Catalyst reported that women held only 6.2 percent of line officer positions in 2000. Thus, despite decades of progress, only six women served as CEOs of Fortune 500 companies in 2004.

Changes in women's legal and educational status at the end of the 20th century contributed to this mixed picture. In the 1960s and 1970s, feminists challenged legal assumptions that had remained unchanged for most of the century. Although few of those challenges were directly related to business, they did affect women's access to training, credit, and promotion. The Equal Pay Act (1963) and Title VII of the Civil Rights Act (1964) dramatically altered women's employment status, requiring equal pay for equal work and outlawing discrimination in employment and in unions on the basis of sex. Directed primarily at the problems faced by wage-earning women, these laws were equally applicable to women in management. The increased numbers of women executives, administrators, and managers during the last quarter-century is attributable, at least in part, to the principle of nondiscrimination established by these laws. These were not the only laws affecting women's ability to move into corporate management. Title IX of the Higher Education Amendments (1972), best known for its impact on women's sports, required equal access to all higher education programs and activities,

including all academic and professional programs. While most female students continued to cluster in health care, education, English, and the arts, Title IX's nondiscriminatory requirements opened the doors to nontraditional fields of study, including business. Business-minded women quickly took advantage of the opportunity. The proportion of women earning master of business administration (MBA) degrees increased fivefold, from 6 percent to more than 30 percent, between the mid-1970s and the mid-1980s. Despite this preparation for business leadership and laws banning discrimination, women continue to be grossly underrepresented at top levels of corporate management.

In addition to expanding women's access to corporate management, a number of administrative and legislative actions increased opportunities for business ownership. Among these were executive orders issued by Presidents Lyndon Johnson and Richard Nixon, first requiring nondiscrimination in granting federal contracts and later requiring affirmative action to grant federal contracts to women- and minority-owned businesses (1967, 1970). These opened the door for women-owned businesses to compete in the expanding arena of government contracting. Perhaps more significantly, the Equal Credit Opportunity Act (1974) outlawed sex-based discrimination in lending. While the primary purpose of this law was to ensure women's access to consumer credit, it had the additional effect of opening the door to business credit. As with legislation banning discrimination on the basis of sex in employment and education, the legal right to equal treatment has not automatically resulted in equal access. In the mid-1990s, for example, the SMALL BUSINESS ADMINISTRATION, which should have been a resource for the thousands of small womenowned businesses, admitted that it had been discriminating against women- and minoritybusiness applicants.

As they navigated the expanding opportunities and continued limitations of the late 20th century, businesswomen increasingly turned to each other for information and support. A new generation of businesswomen reenergized older businesswomen's organizations, such as the Business and Professional Women's Clubs, founded new organizations, including the National Foundation for Women Business Owners and the National Association for Female Executives, and established research institutions, such as Catalyst, to study women in business. In addition, businesswomen increasingly integrated traditionally male-exclusive business organizations, including chambers of commerce.

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Nikki Mandell

Woolworth, Frank Winfield (1852–1919) *retailer* The founder of the Woolworth chain of "five and dime" stores was born in Rodman in upstate New York and spent his teens working at menial jobs in dry goods stores. He studied briefly at a local business college. When he was 21, after several unsuccessful stints as a salesman and clerk in variety stores, he persuaded the manager of a store he was working in to place slightly damaged goods on a special counter and sell them for 5 cents. The idea became immediately popular, and he soon opened his own store in 1879 in Utica selling a variety of items all priced at 5 cents.

The first store failed, but Woolworth persisted, opening another in Lancaster, Pennsylvania, offering items for up to 10 cents. He called the store Woolworth's Five and Ten Cents Store. After it succeeded, he began opening others in Pennsylvania and New York. He bought stores from competitors, consolidating them into his own operation. By 1900, he operated almost 60 stores with sales exceeding \$5 million. Stores were added in England in 1909, with sales from all sources at almost \$110 million. In 1912, all the stores and those acquired in the intervening years were merged into the F. W. Woolworth Co., and the company was incorporated.

In 1913, he built one of New York City's earliest SKYSCRAPERS—the Woolworth Building—that made his name even more famous. It was nicknamed the "Cathedral of Commerce" and cost almost \$14 million to build. Woolworth paid for the building out of his personal funds.

The success made Woolworth one of America's best-known retailers. The company arguably was the best known of the "five and dime" retailers. The stock was added to the Dow Jones 30 Industrial Average in 1924 and remained in the index until 1997. The stores were so popular in Britain that the name was assumed to be English and the company a local one. But success was clouded to an extent by Woolworth's treatment of his employees. He was not known as an enlightened employer. He treated his female employees poorly and often dismissed them quickly when business was not good. The poor treatment often made news headlines. Woolworth died in 1919 on Long Island at a time when his empire totaled more than 1,000 stores and his personal estate was estimated at \$65 million.

In later years, the company expanded its operations into other areas. It purchased the retailer and shoemaker G. R. Kinney Corp. in 1963. But competition from more diversified stores such as Wal-Mart finally took its toll. The last of Woolworth's retail stores was closed in 1997, and the name of the company changed to the Venator Group.

See also chain stores; K-Mart; Sears, Roebuck, & Co.; Wanamaker, John; Ward, Aaron Montgomery.

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Works Progress Administration (WPA) A

federal agency organized during the first administration of Franklin D. Roosevelt in 1936. The WPA was created by executive order after the Emergency Relief Appropriation of 1935. The appropriation of \$5 billion gave \$1.39 billion to the WPA, which in turn attempted to provide public works projects using the unemployed. The WPA was clearly a make-work agency that existed alongside the Public Works Administration, designed to get people off the public dole and working again.

The agency was put under the direction of Harry Hopkins. The agency provided an average weekly pay of \$55, an amount designed to provide a subsistence wage to its recipients. The administration did not want the WPA to compete with private industry and therefore kept its wages low. It was intended only to provide some relief and dignity to the unemployed and was not meant to substitute government employment for higher wages in the private sector. As a result, some workers collected more from the public dole than they did from a WPA job. The agency was highly politicized from the beginning.

Unlike the PWA, the WPA did not undertake giant engineering projects but contented itself with smaller building projects such as building schools, playgrounds, bridges, streets and roads, parks, and airfields, among others. It also allocated funds for unemployed professionals and created federal projects for the arts, music, theater, and writers. The writers' project provided work for many writers later to become famous, including Saul Bellow, John Cheever, and Ralph



Poster for the Works Progress Administration (LIBRARY OF CONGRESS)

Ellison. The arts project produced murals by Mexican artist Diego Rivera that were highly criticized at the time because of the graphic nature of the work. The music project became the basis for symphony orchestras established in several cities after World War II.

The agency was subsequently named the Works Projects Administration and continued to provide support until World War II, when it was terminated. It remained controversial during the 1930s but stood as an example of government intervention in the private sector during times of economic crisis; although it was overshadowed by the PWA, it did manage to employ more than 8 million people on 1.4 million projects in 3,000 counties across the country.

See also NATIONAL RECOVERY ADMINISTRATION; NEW DEAL.

Further reading

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WorldCom A telecommunications company founded in a motel restaurant in Mississippi in 1983 by Bernard Ebbers (1941–) and a group of local businessmen, the same year that AMERICAN TELEPHONE & TELEGRAPH (AT&T) agreed to be dissolved. WORLDCOM purchased wholesale long-distance service from AT&T and resold it, mostly to the small business community. AT&T's monopoly over long distance had been challenged in the 1970s by MCI Corp., and the venerable company agreed to a settlement with the Justice Department allowing for its breakup in the same year that WorldCom was founded.

Through a series of acquisitions, Ebbers built the company into a major long-distance provider. WorldCom adopted an acquisitions strategy that centered on buying other companies rather than developing them from the start. The company acquired 68 phone companies after 1983, following its original model of offering services mostly to small businesses. Ebbers then branched into the local markets with the \$12 billion acquisition of MFS Communications in 1996.

WorldCom stock soared on these prospects, and Ebbers was presented with an opportunity to expand even further. The company that was the prize acquisition target was MCI, better known than WorldCom but cheaper in market price. Another competitor was GTE, which made an all-cash bid for MCI worth \$28 billion. World-Com prevailed, however, with an all-stock bid valued at \$37 billion, a Wall Street record at the time. The sheer size of the all-stock deal required outside financing, and WorldCom issued an additional 760 million shares to pay for it, with MCI shareholders receiving 1.2439 shares of new stock for each share they held. BT (British Telecom) also received \$51 in cash for each of the MCI shares it held as compensation.

MCI WorldCom was a giant in the TELECOM-MUNICATIONS INDUSTRY, with combined revenue of \$30 billion and operations in 65 countries, including 75,000 employees and 22 million customers. Regulators in Europe and the United States insisted on certain divestitures, including Internet service, so that the new company would not have an undue influence in emerging communications. But the telecommunications market was already proving soft, and the deal did not provide the revenues originally anticipated.

In 2002, the company revealed massive accounting irregularities and was forced to file for BANKRUPTCY, the largest of its kind at the time. Ebbers was charged with looting the company for personal gain, and the company operated under the protection of a bankruptcy court until it could reorganize itself. The company continued but dropped WorldCom from its logo, and it reverted to MCI in order to dissociate itself from the scandal and forge ahead.

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Y

yankee peddlers Name given to itinerant salesmen of dry goods and household items who sold their goods by wagon in both urban and rural areas in the 18th and 19th centuries. There are even records of peddlers plying their wares in New England in the 17th century, although the activity was frowned upon before the country began to expand. Once the value of peddlers became recognized, especially in the South and in hard-to-access rural areas, criticism of them abated, although they were constantly accused of cheating their customers or worse.

Typically, peddlers would take a wagonload of goods on consignment and travel distances to sell them. They often borrowed the money to buy a consignment. The money they borrowed is thought to be the source of the term "working capital," since it was for relatively short periods of time and would be paid back to the lender in full once the peddlers returned from their travels. The difference between the cost of the goods and the sale price was the peddler's profit, although it sometimes took a considerable time to realize because the distances traveled could be extensive. Some peddlers traveled up and down the eastern seaboard, while others traveled into the frontier areas of the West. The name "damn Yankees" is thought to have originated with peddlers before the Civil War, since it was northerners who made up most of the peddling population that sold goods in the South.

Many well-known merchants and traders began their careers as itinerant salesmen, including William Filene, who later opened a famous Boston department store once described by Louis BRANDEIS; Daniel DREW, who became infamous on Wall Street as a stock trader and manipulator; Stephen GIRARD, the Philadelphia banker; Benedict Arnold; and William A. Rockefeller, father of John D. Rockefeller. The peddlers specialized in selling more than just housewares and over the years offered all sorts of goods and services to their customers. Often, they also offered simple credit to their better customers, providing the first sort of consumer credit offered in the United States, similar to the type later offered by stores directly to customers.

Once much of the hinterland had been settled and rural areas gained in population, the peddlers often gave up their traveling and became proprietors of country stores to serve the local population. They were the original retailers in the country before the advent of better communications and travel. The inaccessibility of many parts of rural America persisted well beyond the time of the Yankee peddlers, however, and became the basis for the mail-order catalog business developed in the 19th century by Sears, Roebuck and Montgomery Ward.

Further reading

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Young, Owen D. (1874–1962) *businessman* Born on a farm in Van Hornesville, New York, Young was educated at local schools and graduated from St. Lawrence University in 1894. He then attended Boston University's law school and joined a Boston law firm after graduation in 1896. He became a litigator at a firm headed by Charles H. Taylor and was made a partner in 1907. He specialized in law relating to UTILITIES companies. One of his cases brought him to the attention of Charles A. Coffin, the first president of the GEN-ERAL ELECTRIC CO. In 1913, Coffin offered him a job as general counsel to the company, which he promptly accepted. In 1922, when Coffin retired, Young succeeded him as chairman.

Young served on two government conferences under different administrations. He served on Woodrow Wilson's National Industrial Conference in 1919 and 1920 and on Warren Harding's Unemployment Conference in 1921. In 1919, he helped create the RADIO CORPORATION OF AMERICA at the request of the government in order to combat threatened foreign control of the nascent American RADIO INDUSTRY. At issue was technology that the government feared would fall into the hands of the Marconi Wireless Telegraph Company, a British firm, and would allow Britain to become preeminent in radio technology. Young arranged to have RCA buy technology from GE, AMERICAN TELEPHONE & TELEGRAPH, the UNITED FRUIT COMPANY, GENERAL MOTORS, and Westinghouse so that it could assume the role as the leading radio technology company in the world. He became chairman of its board in 1922 and served until 1929, during which time he also helped establish the National Broadcasting Company.

When the courts forced a separation of GE and RCA, Young remained with GE while maintaining ties with RCA and David SARNOFF, who ran RCA. Along with a strong contingent of American bankers, he also served on the committee working on German war reparations in 1924, which produced the Dawes report. Five years later, a similar group produced the Young plan, a revised reparations program that also helped establish the Bank for International Settlements.

After World War II, Governor Thomas Dewey of New York appointed him to a state commission that created the state university system in New York. Throughout his career, he displayed strong skills as a negotiator and a mediator that made him much sought after as a leader of disparate groups. He was named *Time* magazine's Man of the Year in 1930. He retired as chairman of GE in 1939. He was widely praised as an industrial leader who recognized the importance of public service and international affairs.

Further reading

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CHRONOLOGY

1670

• Hudson's Bay Co. chartered by British Crown

1784

• Bank of New York founded

1790

• U.S. Patent Office created

1791

• First Bank of the United States founded

1792

- Buttonwood Agreement signed, forms early stock exchange in New York
- Lancaster Turnpike opened in Pennsylvania

1793

• cotton gin invented

1800

• Congress passes first U.S. bankruptcy law

1802

• DuPont de Nemours & Co. founded

1807

• first steamboat, the *Clermont*, begins service in New York on Hudson River

1817

• Second Bank of the United States founded (rechartered)

1824

• Gibbons v. Ogden Supreme Court decision

1825

• Erie Canal completed

1836

• Colt Firearms Co. founded

1837

• stock market crash (or panic)

1840

• mechanical reaper produced by Cyrus McCormick

1844

• Samuel Morse successfully demonstrates the first telegraph

1847

• John Deere & Co. founded

1848

- Chicago Board of Trade founded
- gold discovered at Sutter's Mill, California

1851

- Singer Sewing Co. founded
- Western Union Telegraph Co. founded

1852

• Wells Fargo organized

1857

• stock market crash (or panic)

1858

• first transatlantic cable laid

1859

• Great Atlantic & Pacific Tea Co. founded

1864

• Congress passes National Bank Act

1867

- first ticker tape introduced
- first typewriter patented

1869

- east-west railroad link completed at Promontory, Utah
- John Wanamaker & Co. opens

1872

• Montgomery Ward opens first mail-order house

1876

• Alexander Graham Bell receives patent for telephone

1878

- Bell Telephone Company formed
- General Electric Company founded as Edison Electric

1879

• F. W. Woolworth opens first store

1880

• B. F. Goodrich Co. founded

1881

• Wharton School established at University of Pennsylvania

1884

- W. Duke Sons & Co. opened in New York City
- Westinghouse Electric founded

1886

- Coca-Cola founded
- Sears, Roebuck founded

1888

• George Eastman produces first Kodak camera

1889

• Wall Street Journal founded

1890

- Congress passes Sherman Antitrust Act
- J. P. Morgan & Co. founded after death of Junius S. Morgan

1892

- strike at Homestead Steel plant of Carnegie Steel
- U.S. Rubber Company founded

1893

• J. P. Morgan assists Treasury in raising gold

1896

- first Dow Jones Industrial Average appears
- IBM Corp. formed as the Tabulating Machine Co.

1900

- National Negro Business League convenes for first time
- Weyerhaeuser Co. founded

1901

• United States Steel Corp. formed

1903

- Ford Motor Co. founded
- Wright brothers make their first flight at Kitty Hawk, North Carolina

1904

• Bank of America founded in California as the Bank of Italy

1908

- General Motors Corp. founded
- Harvard Business School established

1911

• Supreme Court orders breakup of Standard Oil and American Tobacco

1913

- Congress passes Federal Reserve Act
- Congress creates first permanent income tax

1914

- Clayton Act passed
- Federal Trade Commission created
- New York Stock Exchange and other exchanges closed
- Panama Canal opened

1915

• Carrier Air Conditioning Co. founded

1916

• William Boeing starts his company

1919

- Congress passes Volstead Act
- Radio Corp. of America founded as a subsidiary of General Electric

1921

• Chrysler Corporation founded

1923

- Alfred Sloan becomes chief executive of General Motors
- Walt Disney founds cartoon studio in Hollywood

1925

• Congress passes the Air Mail Act of 1925, allowing the government to hire private air carriers to deliver the mail

1927

• Congress passes McFadden Act

1928

• Columbia Broadcasting System founded

1929

• stock market crashes (October)

1930

Congress passes Hawley-Smoot Tariff

1931

• United Airlines incorporated

1932

- Congress creates Reconstruction Finance Corp.
- Congress creates the Federal Home Loan Bank Board

1933

- Banking (Glass-Steagall) Act passed
- Securities Act passed
- Congress creates Tennessee Valley Authority
- Volstead Act repealed

1934

- Congress passes National Labor Relations Act
- Federal Communications Commission formed
- Congress passes Gold Reserve Act
- Securities Exchange Act passed

1935

- Eccles Act strengthens Federal Reserve powers
- NIRA declared unconstitutional
- Public Utility Holding Company Act passed

1937

• Congress creates the NASD

1938

• Civil Aeronautics Act releases the airlines from the control of the U.S. Post Office Department and establishes the Civil Aeronautics Board as the airlines regulating agency

1944

• Bretton Woods agreement signed

1947

• Congress passes Taft-Hartley Act

1950

• first Walton store opened as Walton's Five & Dime

1955

• the AFL merges with the CIO

1964

• first Visa card appears

1971

• United States cuts fixed gold content of dollar

1972

• foreign exchange rates begin floating; Bretton Woods system collapses

1974

• Microsoft Corp. founded

1975

• Wall Street adopts negotiable commission structure

1978

• Congress passes Airline Deregulation Act

1979

• Federal Reserve changes U.S. monetary policy

1980

• Depository Institutions Deregulation and Monetary Control Act passed

1982

• Congress passes Depository Institutions Act

1984

• AT&T monopoly broken up; regional Bell companies become independent

1986

• Congress passes Tax Reform Act

1987

• stock market records largest drop in history

1989

- savings and loan crisis
- Congress creates Financial Institutions Reform, Recovery and Enforcement Act
- Internet organized as World Wide Web

1990

• Drexel Burnham collapses

1991

• Pan Am Airways declares bankruptcy

• Eastern Airlines shuts down all flight operations

1993

• Orange County, California, bankrupt because of derivatives transactions

1994

- interstate banking permitted by Congress
- NAFTA becomes effective

1997

• Boeing merges with McDonnell Douglas Corporation, making it the largest aerospace firm in the world

1998

- Long-Term Capital Management collapses
- Travelers Insurance and Citibank merge

1999

• Financial Services Modernization Act passed

2000

• Chase Manhattan and J. P. Morgan merge

2001

- stock market collapses after 9/11 attack
- AOL merges with Time Warner
- Enron Corp. collapses
- American Airlines acquires TWA, making American the largest U.S. commercial airline

2002

- Congress passes Sarbanes-Oxley Act
- United Airlines declares bankruptcy
- WorldCom files for bankruptcy protection

2004

• New York Attorney General Eliot Spitzer brings civil action against mutual funds and the insurance industry

2005

• New York Stock Exchange and NASDAQ announce plans to merge with electronic trading networks

SELECTED Primary documents

- 1. Hudson's Bay Company Charter, 1670
- 2. Alexander Hamilton, Report on the Subject of Manufactures, 1791
- Constitution of the American Federation of Labor, 1886
- 4. Interstate Commerce Act, 1887
- 5. Andrew Carnegie, "Wealth," 1889
- 6. Sherman Antitrust Act, 1890
- 7. Pure Food and Drug Act, 1906
- 8. Standard Oil Company of New Jersey et al. v. United States, 1911
- 9. Clayton Antitrust Act, 1914
- Franklin D. Roosevelt, "Forgotten Man" Radio Speech, 1932
- 11. Securities Exchange Act, 1934
- 12. National Labor Relations Act, 1935
- Dwight D. Eisenhower's "Military-Industrial Complex" Address, 1961
- 14. Ronald Reagan's Address to the Nation on the Economy, 1981
- 15. United States v. Microsoft, 2000

1. HUDSON'S BAY COMPANY CHARTER, 1670

Royal charter for incorporating the Hudson's Bay Company, granted on May 2, 1670, by England's King Charles II. It gave this English fur-trading company wide proprietary rights to territory surrounding "Hudson's Bay" and to all lands drained by rivers flowing into it. The charter allowed the company to make laws for the "lands aforesaid" and to send warships and armed men "into any of their (the company's) plantations, forts, factories, or places of trade aforesaid, for the security and defense of the same." Two Frenchmen who founded the company—Pierre Esprit Radisson and Medard Chouart (Sieur des Groseilliers)—had been unable to interest French authorities in the fur-trading route through Hudson Bay and had turned to Prince Rupert, a cousin of Charles II, who secured the charter. The company eventually maintained trading posts throughout Canada and a few forts on U.S. soil; it still exists, but without its original monopolistic, territorial, and administrative rights.

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THE ROYAL CHARTER FOR INCORPORATING THE HUDSON'S BAY COMPANY, A.D. 1670

Charles the Second By the grace of God King of England Scotland France and Ireland defender of the faith &c To All to whome these presentes shall come greeting Whereas Our Deare and entirely Beloved Cousin Prince Rupert Count Palatyne of the Rhyne Duke of Bavaria and Cumberland &c Christopher Duke of Albemarle William Earle of Craven Henry Lord Arlington Anthony Lord Ashley Sir John Robinson and Sir Robert Vyner Knightes and Baronettes Sir Peter Colliton Baronett Sir Edward Hungerford Knight of the Bath Sir Paul Neele Knight Sir John Griffith and Sir Phillipp Carteret Knightes James

Hayes John Kirke Francis Millington William Prettyman John Fenn Esquires and John Portman Cittizen and Goldsmith of London have at theire owne great cost and charge undertaken an Expedicion for Hudsons Bay in the North west part of America for the discovery of a new Passage into the South Sea and for the finding some Trade for Furrs Mineralls and other considerable Commodityes and by such theire undertakeing have already made such discoveryes as doe encourage them to proceed further in pursuance of theire said designe by meanes whereof there may probably arise very great advantage to us and our Kingdome And whereas the said undertakers for theire further encouragement in the said designe have humbly besought us to Incorporate them and grant unto them and theire successors the sole Trade and Commerce of all those Seas Streightes Bayes Rivers Lakes Creekes and Soundes in whatsoever Latitude they shall bee that lye within the entrance of the Streightes commonly called Hudsons Streightes together with all the Landes Countryes and Territoryes upon the Coastes and Confynes of the Seas Streightes Bayes Lakes Rivers Creekes and Soundes aforesaid which are not now actually possessed by any of our Subjectes or by the Subjectes of any other Christian Prince or State Now know yee that Wee being desirous to promote all Endeavours tending to the publique good of our people and to encourage the said undertakeing have of our especiall grace certaine knowledge and meere mocion Given granted ratifyed and confirmed And by these Presentes for us our heires and Successors doe give grant ratifie and confirme unto our said Cousin Prince Rupert Christopher Duke of Albemarle William Earle of Craven Henry Lord Arlington Anthony Lord Ashley Sir John Robinson Sir Robert Vyner Sir Peter Colleton Sir Edward Hungerford Sir Paul Neile Sir John Griffith and Sir Phillipp Carterett James Hayes John Kirke Francis Millington William Prettyman John Fenn and John Portman That they and such others as shall bee admitted into the said Society as is hereafter expressed

shall bee one Body Corporate and Politique in deed and in name by the name of the Governor and Company of Adventures of England tradeing into Hudsons Bay and them by the name of the Governor and Company of Adventurers of England tradeing into Hudsons Bay one Body Corporate and Politique in deede and in name really and fully for ever for us our heirs and successors Wee doe make ordeyne constitute establish confirme and declare by these Presentes and that by the same name of Governor & Company of Adventurers of England Tradeing into Hudsons Bay they shall have perpetuall succession And that they and theire successors by the name of the Governor and Company of Adventurers of England tradeing into Hudsons Bay bee and at all tymes hereafter shall bee persons able and capable in Law to have purchase receive possesse enjoy and reteyne Landes Rentes priviledges libertyes Jurisdiccions Franchyses and hereditamentes of what kinde nature and quality soever they bee to them and theire Successors And alsoe to give grant demise alien assigne and dispose Landes Tenementes and hereditamentes and to doe and execute all and singuler other thinges by the same name that to them shall or may apperteyne to doe And that they and theire Successors by the name of the Governor and Company of Adventurers of England Tradeing into Hudsons Bay may pleade and bee impleaded answeare and bee answeared defend and bee defended in whatsoever Courtes and places before whatsoever Judges and Justices and other persons and Officers in all and singuler Accions Pleas Suitts Quarrells causes and demandes whatsoever of whatsoever kinde nature or sort in such manner and forme as any other our Liege people of this our Realme of England being persons able and capable in Lawe may or can have purchase receive possesse enjoy reteyne give grant demise alien assigne dispose pleade and bee defended doe permitt and execute And that the said Governor and Company of Adventurers of England Tradeing into Hudsons Bay and theire successors may have a Common Seale to serve for all the causes and busnesses of them and theire Successors and that itt shall and my bee lawful to the said Governor and Company and theire Successors the same Seall from tyme to tyme at theire will and pleasure to breake change and to make a new or alter as to them shall seeme expedient And further Wee will And by these presentes for us our Heires and successors Wee doe ordeyne that there shall bee from henceforth one of the same Company to bee elected and appointed in such forme as hereafter in these presentes is expressed which shall be called The Governor of the said Company And that the said Governor and Company shall or may elect seaven of theire number in such forme as hereafter in these presentes is expressed which shall bee called the Comittee of the said Company which Comittee of seaven or any three of them together with the Governor or Deputy Governor of the said Company for the tyme being shall have the direccion of the Voyages of and for the said Company and the Provision of the Shipping and Merchandizes thereunto belonging and alsoe the sale of all merchandizes Goodes and other thinges returned in all or any the Voyages or Shippes of or for the said Company and the mannageing and handleing of all other busness affaires and thinges belonging to the said Company And Wee will ordeyne and Grant by these presentes for us our heires and successors unto the said Governor and Company and theire successors that they the said Governor and Company and theire successors shall from henceforth for ever bee ruled ordered and governed according to such manner and forme as is hereafter in these presentes expressed and not otherwise And that they shall have hold reteyne and enjoy the Grantes Libertyes Priviledges Jurisdiccions and Immunityes only hereafter in these presentes granted and expressed and noe other And for the better execucion of our will and Grant in this behalfe Wee have assigned nominated constituted and made And by these presentes for us our heires and successors Wee doe assigne nominate constitute and make our said Cousin Prince

Rupert to bee the first and present Governor of the said Company and to continue in the said Office from the date of these presentes untill the tenth of November then next following if hee the said Prince Rupert shall soe long live and soe untill a new Governor bee chosen by the said Company in forme hereafter expressed And alsoe Wee have assigned nominated and appointed And by these presentes for us our heires and Successors Wee doe assigne nominate and constitute the said Sir John Robinson Sir Robert Vyner Sir Peter Colleton James Hayes John Kirke Francis Millington and John Portman to bee the seaven first and present Committees of the said Company from the date of these presentes untill the said tenth Day of November then also next following and soe untill new Committees shall bee chosen in forme hereafter expressed And further Wee will and grant by these presentes for us our heires and Successors unto the said Governor and Company and theire successors that itt shall and may bee lawfull to and for the said Governor and Company for the tyme being or the greater part of them present at any publique Assembly commonly called the Court Generall to bee holden for the said Company the Governor of the said Company being alwayes one from tyme to tyme to elect nominate and appoint one of the said Company to bee Deputy to the said Governor which Deputy shall take a corporall Oath before the Governor and three or more of the Committee of the said Company for the tyme being well truely and faithfully to execute his said Office of Deputy to the Governor of the said Company and after his Oath soe taken shall and may from tyme to tyme in the absence of the said Governor exercize and execute the Office of Governor of the said Company in such sort as the said Governor ought to doe And further Wee will and Grant and by these presentes for us our heires and Successors unto the said Governor and Company of Adventurers of England tradeing into Hudsons Bay and theire Successors That they or the greater part of them whereof the Governor for the Tyme being or his Deputy to bee

one from tyme to tyme and at all tymes hereafter shall and may have authority and power yearely and every yeare betweene the first and last day of November to assemble and meete together in some convenient place to bee appointed from tyme to tyme by the Governor or in his absence by the Deputy of the said Governor for the tyme being And that they being soe assembled itt shall and may bee lawfull to and for the said Governor or Deputy of the said Governor and the said Company for the tyme being or the greater part of them which then shall happen to bee present whereof the Governor of the said Company or his Deputy for the tyme being to bee one to elect and nominate one of the said Company which shall be Governor of the same Company for one whole yeare then next following which person being soe elected and nominated to bee Governor of the said Company as is aforesaid before hee bee admitted to the Execucion of the said Office shall take a Corporall Oath before the last Governour being his Predecessor or his Deputy and any three or more of the Committee of the said Company for the tyme being that hee shall from tyme to tyme well and truely execute the Office of Governour of the said Company in all thinges concerneing the same and that Ymediately after the same Oath soe taken hee shall and may execute and use the said Office of Governor of the said Company for one whole yeare from thence next following and in like sort Wee will and grant that aswell every one of the above named to bee of the said Company or fellowship as all other hereafter to bee admitted or free of the said Company shall take a Corporall Oath before the Governor of the said Company or his Deputy for the tyme being to such effect as by the said Governor and Company or the greater part of them in any publick Court to bee held for the said Company shall bee in reasonable and legall manner sett down and devised before they shall bee allowed or admitted to Trade or traffique as a freeman of the said Company And further Wee will and grant by these presentes for us our heires and successors unto the said Governor

and Company and theire successors that the said Governor or Deputy Governor and the rest of the said Company and theire successors for the tyme being or the greater part of them whereof the Governor or the Deputy Governor from tyme to tyme to bee one shall and may from tyme to tyme and at all tymes hereafter have power and authority yearely and every yeare betweene the first and last day of November to assemble and meete together in some convenient place from tyme to tyme to be appointed by the said Governour of the said Company or in his absence by his Deputy and that they being soe assembled itt shall and may bee lawfull to and for the said Governor or his Deputy and the Company for the tyme being or the greater part of them which then shall happen to bee present whereof the Governor of the said Company or his Deputy for the tyme being to bee one to elect and nominate seaven of the said Company which shall bee a Committee of the said Company for one whole yeare from thence next ensueing which persons being soe elected and nominated to bee a Committee of the said Company as aforesaid before they bee admitted to the execucion of theire Office shall take a Corporall Oath before the Governor or his Deputy and any three or more of the said Committee of the said Company being theire last Predecessors that they and every of them shall well and faithfully performe theire said Office and Committees in all thinges concerneing the same And that imediately after the said Oath soe taken they shall and may execute and use theire said Office of Committees of the said Company for one whole yeare from thence next following And moreover Our will and pleasure is And by these presentes for us our heires and successors Wee doe grant unto the said Governor and Company and theire successors that when and as often as itt shall happen the Governor or Deputy overnor of the said Company for the tyme being at any tyme within one yeare after that hee shall bee nominated elected and sworne to the Office of the Governor of the said Company as is aforesaid to dye or to bee removed from the said Office which Governor or Deputy Governor not demeaneing himselfe well in his said Office Wee will to bee removeable at the Pleasure of the rest of the said Company or the greater part of them which shall bee present at theire publick assemblies commonly called theire Generall Courtes holden for the said Company that then and soe often itt shall and may be lawfull to and for the Residue of the said Company for the tyme being or the greater part of them within convenient tyme after the death or removeing of any such Governor or Deputy Governor to assemble themselves in such convenient place as they shall thinke fitt for the election of the Governor or Deputy Governor of the said Company and that the said Company or the greater part of them being then and there present shall and may then and there before theire departure from the said place elect and nominate one other of the said Company to bee Governour or Deputy Governor for the said Company in the place and stead of him that soe dyed or was removed which person being soe elected and nominated to the Office of Governor or Deputy Governor of the said Company shall have and exercize the said Office for and dureing the residue of the said yeare takeing first a Corporall Oath as is aforesaid for the due execucion thereof And this to bee done from tyme to tyme soe often as the case shall soe require And also Our Will and Pleasure is and by these presentes for us our heires and successors Wee doe grant unto the said Governor and Company that when and as often as itt shall happen any person or persons of the Committee of the said Company for the tyme being at any tyme within one yeare next after that they or any of them shall bee nominated elected and sworne to the Office of Commitee of the said Company as is aforesaid to dye or to be removed from the said Office which Committees not demeaneing themselves well in theire said Office Wee will to be removeable at the pleasure of the said Governor and Company or the greater part of them whereof the Governor of the said Company for the tyme being or his Deputy to bee

one that then and soe often itt shall and may bee lawfull to and for the said Governor and the rest of the Company for the tyme being or the greater part of them whereof the Governor for the tyme being or his Deputy to bee one within convenient tyme after the death or removeing of any of the said Committee to assemble themselves in such convenient place as is or shall bee usuall and accustomed for the eleccion of the Governor of the said Company or where else the Governor of the said Company for the tyme being or his Deputy shall appoint And that the said Governor and Company or the greater part of them whereof the Governor for the tyme being or his Deputy to bee one being then and there present shall and may then and there before theire Departure from the said place elect and nominate one or more of the said Company to bee of the Committee of the said Company in the place and stead of him or them that soe died or were or was soe removed which person or persons soe elected and nominated to the Office of Committee of the said Company shall have and exercize the said Office for and dureing the residue of the said yeare takeing first a Corporall Oath as is aforesaid for the due execucion thereof and this to bee done from tyme to tyme soe often as the case shall require And to the end the said Governor and Company of Adventurers of England Tradeing into Hudsons Bay may bee encouraged to undertake and effectually to prosecute the said designe of our more especial grace certaine knowledge and meere Mocion Wee have given granted and confirmed And by these presentes for us our heires and successors doe give grant and confirme unto the said Governor and Company and theire successors the sole Trade and Commerce of all those Seas Streightes Bayes Rivers Lakes Creekes and Soundes in whatsoever Latitude they shall bee that lie within the entrance of the Streightes commonly called Hudsons Streightes together with all the Landes and Territoryes upon the Countryes Coastes and confynes of the Seas Bayes Lakes Rivers Creekes and Soundes aforesaid that are not already actually

possessed by or granted to any of our Subjectes or possessed by the Subjectes of any other Christian Prince or State with the Fishing of all Sortes of Fish Whales Sturgions and all other Royall Fishes in the Seas Bayes Isletes and Rivers within the premisses and the Fish therein taken together with the Royalty of the Sea upon the Coastes within the Lymittes aforesaid and all Mynes Royall aswell discovered as not discovered of Gold Silver Gemms and pretious Stones to bee found or discovered within the Territoryes Lymittes and Places aforesaid And that the said Land bee from henceforth reckoned and reputed as one of our Plantacions or Colonyes in America called Ruperts Land And further Wee doe by these presentes for us our heires and successors make create and constitute the said Governor and Company for the tyme being and theire successors the true and absolute Lordes and Proprietors of the same Territory lymittes and places aforesaid And of all other the premisses saving alwayes the faith Allegiance and Soveraigne Dominion due to us our heires and successors for the same To have hold possesse and enjoy the said Territory lymittes and places and all and singuler other the premisses hereby granted as aforesaid with theire and every of their Rightes Members Jurisdictions Prerogatives Royaltyes and Appurtenances whatsoever to them the said Governor and Company and theire Successors forever to bee holden of us our heires and successors as of our Mannor of East Greenwich in our Country of Kent in free and common Soccage and not in Capite or by Knightes Service yeilding and paying yearely to us our heires and Successors for the same two Elkcs and two Black beavers whensoever and as often as Wee our heires and successors shall happen to enter into the said Countryes Territoryes and Regions hereby granted And further our will and pleasure is And by these presentes for us our heires and successors Wee doe grant unto the said Governor and Company and to theire successors that itt shall and may be lawfull to and for the said Governor and Company and theire successors from tyme to tyme to assemble themselves for or about

any the matters causes affaires or businesses of the said Trade in any place or places for the same convenient within our Dominions or elsewhere and there to hold Court for the said Company and the affaires thereof And that alsoe itt shall and may bee lawfull to and for them and the greater part of them being soe assembled and that shall then and there bee present in any such place or places whereof the Governor or his Deputy for the tyme being to bee one to make ordeyne and constitute such and soe many reasonable Lawes Constitucions Orders and Ordinances as to them or the grater part of them being then and there present shall seeme necessary and convenient for the good Government of the said Company and of all Governors of Colonyes Fortes and Plantacions Factors Masters Mariners and other Officers employed or to bee employed in any of the Territoryes and Landes aforesaid and in any of theire Voyages and for the better advancement and contynuance of the said Trade or Traffick and Plantacions and the same Lawes Constitucions Orders and Ordinances soe made to putt in use ad execute accordingly and at theire pleasure to revoke and alter the same or any of them as the occasion shall require And that the said Governor and Company soe often as they shall make ordeyne or establish any such Lawes Constitucions Orders and Ordinances in such forme as aforesaid shall and may lawfully impose ordeyne limitt and provide such paines penaltyes and punishmentes upon all Offenders contrary to such Lawes Constitucions Orders and Ordinances or any of them as to the said Governor and Company for the tyme being or the greater part of them then and there being present the said Governor or his Deputy being alwayes one shall seeme necessary requisite or convenient for the observacion of the same Lawes Constitucions Orders and Ordinances And the same Fynes and Amerciamentes shall and may by theire Officers and Servantes from tyme to tyme to bee appointed for that purpose levy take and have to the use of the said Governor and Company and theire successors without the impediment of us our heires or successors or

of any the Officers or Ministers of us our heires or successors and without any accompt therefore to us our heires or successors to bee made All and singuler which Lawes Constitucions Orders and Ordinances soe as aforesaid to bee made Wee will to bee duely observed and kept under the paines and penaltyes therein to bee conteyned soe alwayes as the said Lawes Constitucions Orders and Ordinances Fynes and Amerciamentes bee reasonable and not contrary or repugnant but as neare as may bee agreeable to the Lawes Statutes or Customes of this our Realme And furthermore of our ample and abundant grace certaine knowledge and meere mocion Wee have granted and by these presentes for us our heires and successors doe grant unto the said Governor and Company and theire Successors That they and theire Successors and theire Factory Servantes and Agentes for them and on their behalfe and not otherwise shall for ever hereafter have use and enjoy not only the whole Entire and only Trade and Traffick and the whole entire and only liberty use and priviledge of tradeing and Trafficking to and from the Territory Lymittes and places aforesaid but alsoe the whole and entire Trade and Trafficke to and from all Havens Bayes Creekes Rivers Lakes and Seas into which they shall find entrance or passage by water or Land out of the Territoryes Lymittes or places aforesaid and to and with all the Natives and People Inhabitting or which shall inhabit within the Territoryes Lymittes and places aforesaid and to and with all other Nacions Inhabitting any the Coaste adjacent to the said Territoryes Lymittes and places which are not already possessed as aforesaid or whereof the sole liberty or priviledge of Trade and Trafficke is not granted to any other of our Subjectes And Wee of our further Royall favour And of our more espciall grace certaine knowledge and meere Mocion have granted and by these presentes for us our heires and Successors doe grant to the said Governor and Company and to theire Successors That neither the said Territoryes Lymittes and places hereby Granted as aforesaid nor any part thereof nor the islandes Havens Portes Cittyes

Townes or places thereof or therein conteyned shall bee visited frequented or haunted by any of the Subjects of us our heires or successors contrary to the true meaneing of these presentes and by vertue of our Prerogative Royall which wee will not have in that behalfe argued or brought into Question Wee Streightly Charge Command and prohibitt for us our heires and Successors all the subjectes of us our heires and Successors of what degree or Quality soever they bee that none of them directly or indirectly doe visit haunt frequent or Trade Trafficke or Adventure by way of Merchandize into or from any the said Territoryes Lymittes or Places hereby granted or any or either of them other then the said Governor and Company and such perticuler persons as now bee or hereafter shall bee of that Company theire Agentes Factors and Assignes unlesse itt bee by the Lycence and agreement of the said Governor and Company in writing first had and obteyned under theire Common Seale to bee granted upon paine that every such person or persons that shall Trade or Trafficke into or from any the Countryes Territoryes or Lymittes aforesaid other then the said Governor and Company and theire Successors shall incurr our Indignacion and the forfeiture and the losse of the Goodes Merchandizes and other thinges whatsoever which soe shall bee brought into this Realme of England or any the Dominions of the same contrary to our said Prohibicion or the purport or true meaneing of these presentes for which the said Governor and Company shall finde take and seize in other places out of our Dominions where the said Company theire Agentes Factors or Ministers shall Trade Traffick inhabitt by vertue of these our Letters Patente As alsoe the Shipp and Shippes with the Furniture thereof wherein such goodes Merchandizes and other thinges shall bee brought or found the one halfe of all the said Forfeitures to bee to us our heires and successors and the other halfe thereof Wee doe by these Presentes cleerely and wholly for us our heires and Successors Give and Grant unto the said Governor and Company and theire Successors And further all and every the said Offenders for theire

said contempt to suffer such other punishment as to us our heires or Successors for soe high a contempt shall seeme meete and convenient and not to bee in any wise delivered until they and every of them shall become bound unto the said Governor for the tyme being in the summe of one thousand Poundes at the least of noe tyme then after to Trade or Traffick into any of the said places Seas Streightes Bayes Portes Havens or Territoryes aforesaid contrary to our Expresse Commandment in that behalfe herein sett downe and published And further of our more especiall grace Wee have condiscended and granted And by these presentes for us our heires and Successor doe grant unto the said Governor and Company and theire successors That Wee our heires and Successors will not Grant liberty lycence or power to any person or persons whatsoever contrary to the tenour of these our Letters Patente to Trade trafficke or inhabit unto or upon any the Territoryes lymittes or places afore specifyed contrary to the true meaneing of these presentes without the consent of the said Governor and Company or the most part of them And of our more abundant grace and favour to the said Governor and Company Wee doe hereby declare our will and pleasure to bee that if it shall soe happen that any of the persons free or to bee free of the said Company of Adventurers of England Tradeing into Hudsons Bay who shall before the goeing forth of any Shipp or Shippes appointed for A Voyage or otherwise promise or agree by Writeing under his or theire handes to adventure any summe or Sumes of money towardes the furnishing any provision or maintainance of any voyage or voyages sett forth or to bee sett forth or intended or meant to bee sett forth by the said Governor and Company or the more part of them present at any Publick Assembly commonly called theire Generall Court shall not within the Space of twenty Dayes next after Warneing given to him or them by the said Governor or Company or theire knowne Officer or Minister bring in and deliver to the Treasurer or Treasurers appointed for the Company such summes of money as shall have beene expressed and sett

downe in writeing by the said Person or Persons subscribed with the name of the said Adventurer or Adventurers that then and at all Tymes after itt shall and may bee lawfull to and for the said Governor and Company or the more part of them present whereof the said Governor or his Deputy to bee one at any of theire Generall Courtes or Generall Assemblyes to remove and disfranchise him or them and every such person and persons at their wills and pleasures and hee or they soe removed and disfranchised not to bee permitted to trade into the Countryes Territoryes and Lymittes aforesaid or any part thereof nor to have any Adventure or Stock goeing or remaineing with or amongst the said Company without the speciall lycence of the said Governor and Company or the more part of them present at any Generall Court first had and obteyned in that behalfe Any thing before in these presentes to the contrary thereof in any wise notwithstanding And Our Will and Pleasure is And hereby wee doe alsoe ordeyne that itt shall and may bee lawfull to and for the said Governor and Company or the greater part of them whereof the Governor for the tyme being or his Deputy to bee one to admitt into and to bee of the said Company all such Servantes or Factors of or for the said Company and all such others as to them or the most part of them present at any Court held for the said Company the Governor or his Deputy being one shall bee thought fitt and agreeable with the Orders and Ordinances made and to bee made for the Government of the said Company And further Our will and pleasure is And by these presentes for us our heires and Successors Wee doe grant unto the said Governor and Company and to theire Successors that itt shall and may bee lawfull in all Eleccions and Bye-Lawes to bee made by the Generall Court of the Adventurers of the said Company that every person shall have a number of votes according to his Stock that is to say for every hundred poundes by him subscribed or brought into the present Stock one vote and that any of these that have Subscribed lesse then one hundred poundes may joyne theire respective summes to make upp one hundred poundes and have one vote joyntly for the same and not otherwise And further of our speciall grace certaine knowledge and meere mocion Wee doe for us our heires and successors grant to and with the said Governor and Company of Adventurers of England Tradeing into Hudsons Bay that all Landes Islandes Territoryes Plantacions Fortes Fortificacions Factoryes or Colonyes where the said Companyes Factoryes and Trade are or shall bee within any the Portes and places afore lymitted shall bee ymediately and from henceforth under the power and command of the said Governor and Company theire Successors and Assignes Saving the faith and Allegiance due to bee performed to us our heires and successors as aforesaid and that the said Governor and Company shall have liberty full Power and authority to appoint the establish Governors and all other Officers to governe them And that the Governor and his Councill of the severall and respective places where the said Company shall have Plantacions Fortes Factoryes Colonyes or Places of Trade within any the Countryes Landes or Territoryes hereby granted may have power to judge all persons belonging to the said Governor and Company or that shall live under them in all Causes whether Civill or Criminall according to the Lawes of this Kingdome and to execute Justice accordingly And in case any crime or misdemeanor shall bee committed in any of the said Companyes Plantacions Fortes Factoryes or Places of Trade within the Lymittes aforesaid where Judicature cannot bee executed for want of a Governor and Councill there then in such case itt shall and may bee lawfull for the chiefe Factor of that place and his Councill to transmitt the party together with the offence to such other Plantacion Factory or Fort where there shall bee a Governor and Councill where Justice may bee executed or into his Kingdome of England as shall bee thought most convenient there to receive such punishment as the nature of his offence shall deserve And Moreover Our will and pleasure is And by these presentes for us our heires and Successors Wee doe give and grant unto the said Governor and Company

and theire Successors free Liberty and Lycence in case they conceive it necessary to send either Shippes of War Men or Amunicion unto any theire Plantacions Fortes Factoryes or Places of Trade aforesaid for the security and defence of the same and to choose Commanders and Officers over them and to give them power and authority by Commission under theire Common Seale or otherwise to continue or make peace or Warre with any Prince or People whatsoever that are not Christians in any places where the said Company shall have any Plantacions Fortes or Factoryes or adjacent thereunto as shall bee most for the advantage and benefit of the said Governor and Company and of theire Trade and alsoe to right and recompence themselves upon the Goodes Estates or people of those partes by whome the said Governor and Company shall susteyne any injury losse or dammage or upon any other People whatsoever that shall any way contrary to the intent of these presentes interrupt wrong or injure them in theire said Trade within the said places Territoryes and Lymittes granted by this Charter and that itt shall and may bee lawfull to and for the said Governor and Company and theire Successors from tyme to tyme and at all tymes from henceforth to Erect and build such Castles Fortifications Fortes Garrisons Colonyes or Plantacions Townes or Villages in any partes or places within the Lymittes and Boundes granted before in these presentes unto the said Governor and Company as they in theire Discrecions shall thinke fitt and requisite and for the supply of such as shall bee needeful and convenient to keepe and bee in the same to send out of this Kingdome to the said Castles Fortes Fortifications Garrisons Colonyes Plantacions Townes or Villages all Kindes of Cloathing Provision of Victuales Ammunicion and Implementes necessary for such purpose paying the Dutyes and Customes for the same As alsoe to transport and carry over such number of Men being willing thereunto or not prohibited as they shall thinke fitt and alsoe to governe them in such legall and reasonable manner as the said Governor and Company shall thinke best and to inflict punishment for misdemeanors or impose such Fynes upon them for breach of theire Orders as in these Presentes are formerly expressed And further Our will and pleasure is And by these presentes for us our heires and Successors Wee doe grant unto the said Governor and Company and to theire Successors full Power and lawfull authority to seize upon the Persons of all such English or any other our Subjectes, which shall saile into Hudsons Bay or Inhabit in any of the Countryes Islandes or Territoryes hereby Granted to the said Governor and Company without theire leave and Licence in that Behalfe first had and obteyned or that shall contemne or disobey theire Orders and send them to England and that all and every Person or Persons being our Subjectes any wayes Imployed by the said Governor and Company within any the Partes places and Lymittes aforesaid shall bee lyable unto and suffer such punnishment for any Offences by them committed in the Partes aforesaid as the President and Councill for the said Governor and Company there shall thinke fitt and the meritt of the offence shall require as aforesaid And in case any Person or Persons being convicted and Sentenced by the President and Councill of the said Governor and Company in the Countryes Landes or Lymittes aforesaid theire Factors or Agentes there for any Offence by them done shall appeale from the same That then and in such Case itt shall and may be lawfull to and for the said President and Councill Factors or Agentes to seize upon him or them and to carry him or them home Prisoners into England to the said Governor and Company there to receive such condigne punnishment as his Cause shall require and the Law of this Nacion allow of and for the better discovery of abuses and injuryes to bee done unto the said Governor and Company or theire Successors by any Servant by them to bee imployed in the said Voyages and Plantacions itt shall and may be lawfull to and for the said Governor and Company and theire respective Presidentes Chiefe Agent or Governor in the partes aforesaid to examine upon Oath all Factors Masters Pursers Supra

Cargoes Commanders of Castles Fortes Fortications Plantacions or Colonyes or other Persons touching or concerneing any matter or thing in which by Law or usage an Oath may bee administered soe as the said Oath and the matter therein conteyned bee not repugnant but agreeable to the Lawes of this Realme And Wee doe hereby streightly charge and Command all and singuler our Admiralls Vice- Admiralls Justices Mayors Sheriffs Constables Baryliffes and all and singuler other our Officers Ministers Liege Men and Subjectes whatsoever to bee ayding favouring helping and assisting to the said Governor and Company and to theire Successors and to theire Deputyes Officers Factors Servantes Assignes and Ministers and every of them in executeing and enjoying the premisses as well on Land as on Sea from tyme to tyme when any of you shall thereunto bee required any Statute Act Ordinance Proviso Proclamation or restraint heretofore had made sett forth ordeyned or provided or any other matter cause or thing whatsoever to the contrary in any wise notwithstanding In witness whereof wee have caused these our Letters to bee made Patentes Witness Ourselves at Westminster the second day of May in the two and twentieth yeare of our Raigne

> By Writt of Privy Seale Pigott

Source:

Charters, Statutes, Orders in Council & C, Relating to the Hudson Bay Company. London: Hudson's Bay Co., 1957.

2. Alexander Hamilton, Report on the Subject of MANUFACTURES, 1791

Report submitted by U.S. secretary of the Treasury Alexander Hamilton to Congress on December 5, 1791, proposing federal aid to infant industries through protective tariffs. It responded to an argument put forth most notably by Thomas Jefferson that "Agriculture is the most beneficial and pro-

ductive object of human industry." Hamilton argued that the national welfare required the federal government to encourage manufacturing in order to increase productivity as well as the national income and provide a dependable home market for agriculture. Hamilton's views were influenced by Adam Smith's Wealth of Nations (1776), but he rejected Smith's laissez-faire view that the state must not direct economic processes. Of note are Hamilton's reliance on his own previous arguments favoring a national bank and establishment of a public debt. Also of note, considering more recent values, are his favoring immigration and also the employment of women (as being less costly than men) and children, even "of tender age." Congress took no action on the report, the only time a report of his failed. However, it later fueled arguments on both sides of the protection question.

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To the Speaker of the House of Representatives

The Secretary of the Treasury in obedience to the order of ye House of Representatives, of the 15th day of January 1790, has applied his attention, at as early a period as his other duties would permit, to the subject of Manufactures; and particularly to the means of promoting such as will tend to render the United States, independent on foreign nations, for military and other essential supplies. And he there [upon] respectfully submits the following Report.

The expediency of encouraging manufactures in the United States, which was not long since deemed very questionable, appears at this time to be pretty generally admitted. The embarrassments, which have obstructed the progress of our external trade, have led to serious reflections on the necessity of enlarging the sphere of our domestic commerce: the restrictive regulations, which in foreign markets abridge the vent of the increasing surplus of our Agriculture produce, serve to beget an earnest desire, that a more extensive demand for that surplus may be created at home: And the complete success, which has rewarded manufacturing enterprise, in some valuable branches, conspiring with the promising symptoms, which attend some less mature essays, in others, justify a hope, that the obstacles to the growth of this species of industry are less formidable than they were apprehended to be; and that it is not difficult to find, in its further extension; a full indemnification for any external disadvantages, which are or may be experienced, as well as an accession of resources, favourable to national independence and safety.

* * *

It is now proper to proceed a step further, and to enumerate the principal circumstances, from which it may be inferred—That manufacturing establishments not only occasion a positive augmentation of the Produce and Revenue of the Society, but that they contribute essentially to rendering them greater than they could possibly be, without such establishments. These circumstances are—

- 1. The division of Labour
- 2. An extension of the use of Machinery.
- 3. Additional employment to classes of the community not ordinarily engaged in the business.
- 4. The promoting of emigration from foreign Countries.
- 5. The furnishing greater scope for the diversity of talents and dispositions which discriminate men from each other.
- 6. The affording a more ample and various field for enterprize.
- 7. The creating in some instances a new, and securing in all, a more certain and steady demand for the surplus produce of the soil.

Each of these circumstances has a considerable influence upon the total mass of industrious effort in a community. Together, they add to it a degree of energy and effect, which are not easily conceived. Some comments upon each of them, in the order in which they have been stated, may serve to explain their importance.

I. As to the Division of Labour

It has justly been observed, that there is scarcely any thing of greater moment in the oeconomy of a nation, than the proper division of labour. The separation of occupations causes each to be carried to a much greater perfection, than it could possible acquire, if they were blended. This arises principally from three circumstances.

1st-The greater skill and dexterity naturally resulting from a constant and undivided application to a single object. . . . 2nd. The oeconomy of time-by avoiding the loss of it, incident to a frequent transition from one operation to another of a different nature. . . . 3rd. An extension of the use of Machinery. A man occupied on a single object will have it more in his power, and will be more naturally led to exert his imagination in devising methods to facilitate and abridge labour, than if he were perplexed by a variety of independent and dissimilar operations. . . . And from these causes united, the mere separation of the occupation of the cultivator, from that of the Artificer, has the effect of augmenting the productive powers of labour, and with them, the total mass of the produce or revenue of a Country. In this single view of the subject, therefore, the utility of Artificers or Manufacturers, towards promoting an increase of productive industry, is apparent.

II. As to an extension of the use of Machinery a point which though partly anticipated requires to be placed in one or two additional lights.

The employment of Machinery forms an item of great importance in the general mass of national industry. 'Tis an artificial force brought in aid of the natural force of man; and, to all the purposes of labour, is an increase of hands; an accession of strength, unincumbered too by the expence of maintaining the laborer. May it not therefore be fairly inferred, that those occupations, which give greatest scope to the use of this auxiliary, contribute most to the general Stock of industrious effort, and, in consequence, to the general product of industry?

... The substitution of foreign for domestic manufactures is a transfer to foreign nations of the advantages accruing from the employment of Machinery, in the modes in which it is capable of being employed, with most utility and to the greatest extent. The Cotton Mill invented in England, within the last twenty years, is a signal illustration of the general proposition, which has been just advanced. In consequence of it, all the different processes for spining Cotton are performed by means of Machines, which are put in motion by water. . . And it is an advantage of great moment that the operations of this mill continue with convenience, during the night, as well as through the day. The prodigious affect of such a Machine is easily conceived. To this invention is to be attributed essentially the immense progress, which has been so suddenly made in Great Britain in the various fabrics of Cotton.

III. As to the additional employment of classes of the community, not ordinarily engaged in the particular business.

This is not among the least valuable of the means, by which manufacturing institutions contribute to augment the general stock of industry and production. In places where those institutions prevail, besides the persons regularly engaged in them, they afford occasional and extra employment to industrious individuals and families, who are willing to devote the leisure resulting from the intermissions of their ordinary pursuits to collateral labours, as a resource of multiplying their acquisitions of [their] enjoyments. The husbandman himself experiences a new source of profit and support from the encreased industry of his wife and daughters; invited and stimulated by the demands of the neighboring manufactories.

... There is another of a nature allied to it [and] of a similar tendency. This is—the employment of persons who would otherwise be idle (and in many cases a burthen on the community), ... In general, women and Children are rendered more useful and the latter more early useful by manufacturing establishments, than they would otherwise be. Of the number of persons employed in the Cotton Manufactories of Great Britain, it is computed that 4/7 nearly are women and children; of whom the greatest proportion are children and many of them of a very tender age.

And thus it appears to be one of the attributes of manufactures, and one of no small consequence, to give occasion to the exertion of a greater quantity of Industry, even by the same number of persons, where they happen to prevail, than would exist, if there were no such establishment.

IV. As to the promoting of emigration from foreign Countries. . . . Manufacturers, who listening to the powerful invitations of a better price for their fabrics, or their labour, of greater cheapness of provisions and raw materials, of an exemption from the chief part of the taxes burthens and restraints, which they endure in the old world, of greater personal independence and consequence, under the operation of a more equal government, and of what is far more precious than mere religious toleration-a perfect equality of religious privileges; would probably flock from Europe to the United States to pursue their own trades or professions, if they were once made sensible of the advantages they would enjoy, and were inspired with an assurance of encouragement and employment, will, with difficulty, be induced to transplant themselves, with a view to becoming Cultivators of Land.

* * *

V. As to the furnishing greater scope for the diversity of talents and dispositions, which discriminate men from each other.

. . . The results of human exertion may be immensely increased by diversifying its objects. When all the different kinds of industry obtain in a community, each individual can find his proper element, and can call into activity the whole vigour of his nature. And the community is benefitted by the services of its respective members, in the manner, in which each can serve it with most effect.

If there be anything in a remark often to be met with—namely that there is, in the genius of the people of this country, a peculiar aptitude for mechanic improvements, it would operate as a forcible reason for giving opportunities to the exercise of that species of talent, by the propagation of manufactures. VI. As to the affording a more ample and various field for enterprise.

... To cherish and stimulate the activity of the human mind, by multiplying the objects of enterprise, is not among the least considerable of the expedients, by which the wealth of a nation may be promoted. Even things in themselves not positively advantageous, sometimes become so, by their tendency to provoke exertion. Every new scene, which is opened to the busy nature of man to rouse and exert itself, is the addition of a new energy to the general stock of effort.

The spirit of enterprise, useful and prolific as it is, must necessarily be contracted or expanded in proportion to the simplicity or variety of the occupations and productions, which are to be found in a Society. It must be less in a nation of mere cultivators, than in a nation of cultivators and merchants; less in a nation of cultivators, and merchants, than in a nation of cultivators, artificers and merchants.

VII. As to the creating, in some instances, a new, and securing in all a more certain and steady demand, for the surplus produce of the soil.

This is . . . a principal mean, by which the establishment of manufactures contributes to an augmentation of the produce or revenue of a country, and has an immediate and direct relation to the prosperity of Agriculture.

It is evident, that the exertions of the husbandman will be steady or fluctuating, vigorous or feeble, in proportion to the steadiness or fluctuation, adequateness, or inadequateness of the markets on which he must depend.... For the purpose of this vent, a domestic market is greatly to be preferred to a foreign one; because it is in the nature of things, far more to be relied upon.

It is a primary object of the policy of nations, to be able to supply themselves with subsistence from their own soils; and manufacturing nations, as far as circumstances permit, endeavor to procure, from the same source, the raw materials necessary for their own fabrics... * * *

But it is also a consequence of the policy, which has been noted, that the foreign demand for the products of Agricultural Countries, is, in a great degree, rather casual and occasional, than certain or constant

* * *

It merits particular observation, that the multiplication of manufactories not only furnishes a Market for those articles, which have been accustomed to be produced in abundance, in a country; but it likewise creates a demand for such as were either unknown or produced in inconsiderable quantities. The bowels as well as the surface of the earth are ransacked for articles which were before neglected. Animals, Plants and Minerals acquire an utility and value, which were before unexplored.

The foregoing considerations seem sufficient to establish, as general propositions, That it is the interest of nations to diversify the industrious pursuits of the individuals, who compose them—That the establishment of manufactures is calculated not only to increase the general stock of useful and productive labour; but even to improve the state of Agriculture in particular; certainly to advance the interests of those who are engaged in it. There are other views, that will be hereafter taken of the subject, which, it is conceived, will serve to confirm these inferences.

* * *

. . . The United States are to a certain extent in the situation of a country precluded from foreign Commerce. They can indeed, without difficulty obtain from abroad the manufactured supplies, of which they are in want; but they experience numerous and very injurious impediments to the emission and vent of their own commodities. Nor is this the case in reference to a single foreign nation only. The regulations of several countries, with which we have the most extensive intercourse, throw serious obstructions in the way of the principal staples of the United States. In such a position of things, the United States cannot exchange with Europe on equal terms; and the want of reciprocity would render them the victim of a system, which should induce them to confine their views to Agriculture and refrain from Manufactures. A constant and encreasing necessity, on their part, for the commodities of Europe, and only a partial and occasional demand for their own, in return, could not but expose them to a state of impoverishment, compared with the opulence to which their political and natural advantages authorise them to aspire.

. . . Tis for the United States to consider by what means they can render themselves least dependent, on the combinations, right or wrong of foreign policy.

It is no small consolation, that already the measures which have embarrassed our Trade, have accelerated internal improvements, which upon the whole have bettered our affairs. To diversify and extend these improvements is the surest and safest method of indemnifying ourselves for any inconveniences, which those or similar measures have a tendency to beget. If Europe will not take from us the products of our soil, upon terms consistent with our interest, the natural remedy is to contract as fast as possible our wants of her.

* * *

The supposed want of Capital for the prosecution of manufactures in the United States is the most indefinite of the objections which are usually opposed to it.

It is very difficult to pronounce any thing precise concerning the real extent of the monied capital of a Country, and still more concerning the proportion which it bears to the objects that invite the employment of Capital. It is not less difficult to pronounce how far the effect of any given quantity of money, as capital, or in other words, as a medium for circulating the industry and property of a nation, may be encreased by the very circumstance of the additional motion, which is given to it by new objects of employment. That effect, like the momentum of descending bodies, may not improperly be represented, as in a compound ratio to mass and velocity. It seems pretty certain, that a given sum of money, in a situation, in which the quick impulses of commercial activity were little felt, would appear inadequate to the circulation of as great a quantity of industry and property, as in one, in which their full influence was experienced.

It is not obvious, why the same objection might not as well be made to external commerce as to manufactures; since it is manifest that our immense tracts of land occupied and unoccupied are capable of giving employment to more capital than is actually bestowed upon them. It is certain, that the United States offer a vast field for the advantageous employment of Capital; but it does not follow, that there will not be found, in one way or another, a sufficient fund for the successful prosecution of any species of industry which is likely to prove truly beneficial.

The following considerations are of a nature to remove all inquietude on the score of want of Capital.

The introduction of Banks, as has been shewn on another occasion has a powerful tendency to extend the active Capital of a Country. Experience of the Utility of these Institutions is multiplying them in the United States. It is probable that they will be established wherever they can exist with advantage; and wherever, they can be supported, if administered with prudence, they will add new energies to all pecuniary operations.

The aid of foreign Capital may safely, and, with considerable latitude be taken into calculation. Its instrumentality has been experienced in our external commerce; and it has begun to be felt in various other modes. Not only our funds, but our Agriculture and other internal improvements have been animated by it. It has already in a few instances extended even to our manufactures.

It is a well known fact, that there are parts of Europe, which have more Capital, than profitable domestic objects of employment. Hence, among other proofs, the large loans continually

furnished, to foreign states. And it is equally certain that the capital of other parts may find more profitable employment in the United States, than at home. . . . Both these Causes operate to produce a transfer of foreign capital to the United States. 'Tis certain, that various objects in this country hold out advantages, which are with difficulty to be equalled elsewhere; and under the increasingly favorable impressions, which are entertained of our government, the attractions will become more and More strong. These impressions will prove a rich mine of prosperity to the Country, if they are confirmed and strengthened by the progress of our affairs. And to secure this advantage, little more is now necessary, than to foster industry, and cultivate order and tranquility, at home and abroad.

* * *

And whatever be the objects which originally attract foreign Capital, when once introduced, it may be directed towards any purpose of beneficial exertion, which is desired. And to detain it among us, there can be no expedient so effectual as to enlarge the sphere, within which it may be usefully employed: Though induced merely with views to speculations in the funds, it may afterwards be rendered subservient to the Interests of Agriculture, Commerce & Manufactures.

* * ;

But while there are Circumstances sufficiently strong to authorise a considerable degree of reliance on the aid of foreign Capital towards the attainment of the object in view, it is satisfactory to have good grounds of assurance, that there are domestic resources of themselves adequate to it. It happens, that there is a species of Capital actually existing within the United States, which relieves from all inquietude on the score of want of Capital—This is the funded Debt.

* * *

To all the arguments which are brought to evince the impracticability of success in manufacturing establishments in the United States, it might have been a sufficient answer to have referred to the experience of what has been already done. It is certain that several important branches have grown up and flourished with a rapidity which surprises: affording an encouraging assurance of success in future attempts: of these it may not be improper to enumerate the most considerable.

I. of Skins. Tanned and tawed leather dressed skins, shoes, boots and Slippers, harness and sadlery of all kinds. Portmanteau's and trunks, leather breeches, gloves, muffs and tippets, parchment and Glue.

II. of Iron. Barr and Sheet Iron, Steel, Nailrods & Nails, implements of husbandry, Stoves, pots and other household utensils, the steel and Iron work of carriages and for Shipbuilding, Anchors, scale beams and Weights & Various tools of Artificers, arms of different kinds; though the manufacture of these last has of late diminished for want of demand.

III. of Wood. Ships, Cabinet Wares and Turnery, Wool and Cotton cards and other Machinery for manufactures and husbandry, Mathematical instruments, Coopers wares of every kind.

IV. of flax & Hemp. Cables, sail-cloth, Cordage, twine and packthread.

V. Bricks and coarse tiles & Potters Wares.

VI. Ardent Spirits, and malt liquors.

VII. Writing and printing Paper, sheathing and wrapping Paper, pasteboards, fillers or press papers, paper hangings.

VIII. Hats of furr and Wool and of mixtures of both, Womens Stuff and Silk shoes.

IX. Refined Sugars.

X. Oils of Animals and seeds; Soap, Spermaceti and Tallow Candles

XI. Copper and brass wares, particularly utensils for distillers, Sugar refiners and brewers, And—Irons and other Articles for household Use, philosophical apparatus

XII. Tin Wares, for most purposes of Ordinary use.

XIII. Carriages of all kinds XIV. Snuff, chewing & smoaking Tobacco. XV. Starch and Hairpowder. XVI. Lampblack and other painters colours, XVII. Gunpowder

Besides manufactories of these articles which are carried on as regular Trades, and have attained to a considerable degree of maturity, there is a vast scene of household manufacturing, which contributes more largely to the supply of the Community, than could be imagined; without having made it an object of particular enquiry. This observation is the pleasing result of the investigation, to which the subject of the report has led, and is applicable as well to the Southern as to the middle and Northern States; great quantities of coarse cloths, coatings, serges, and flannels, linsey Woolseys, hosiery of Wool, cotton & thread, coarse fustians, jeans and Muslins, check(ed) and striped cotton and linen goods, bed ticks, Coverlets and Counterpanes, Tow linens, coarse shirtings, sheetings, toweling and table linen, and various mixtures of wool and cotton, and of Cotton & flax are made in the household way, and in many instances to an extent not only sufficient for the supply of the families in which they are made, but for sale, and (even in some cases) for exportation. It is computed in a number of districts that 2/3 3/4 and even 4/5 of all the clothing of the Inhabitants are made by themselves. The importance of so great a progress, as appears to have been made in family Manufactures, within a few years, both in a moral and political view, renders the fact highly interesting.

Neither does the above enumeration comprehend all the articles, that are manufactured as regular Trades. Many other occur, which are equally well established, but which not being of equal importance have been omitted. And there are many attempts stills in their Infancy, which though attended with very favorable appearances, could not have been properly comprized in an enumeration of manufactories, already established. There are other articles also of great importance, which tho' strictly speaking manufactures are omitted, as being immediately connected with husbandry: such are flour, pot & pearl ash, Pitch, tar, turpentine and the like. There remains to be noticed an objection to the encouragement of manufactures, of a nature different from those which question the probability of success. This is derived from its supposed tendency to give a monopoly of a advantages to particular classes at the expence of the rest of the community, who, it is affirmed, would be able to procure the requisite supplies of manufactured articles on better terms from foreigners, than from our own Citizens, and who it is alledged, are reduced to a necessity of paying an enhanced price for whatever they want, by every measure, which obstructs the free competition of foreign commodities.

* * *

It is not an unreasonable supposition, that measures, which serve to abridge the free competition of foreign But though it were true, that the immediate and certain effect of regulations controuling the competition of foreign with domestic fabrics was an increase of price, it is universally true, that the contrary is the ultimate effect with every successful manufacture. When a domestic manufacture has attained to perfection, and has engaged in the prosecution of it a competent number of Persons, it invariably becomes cheaper. Being free from the heavy charges, which attend the importation of foreign commodities, it can be afforded, and accordingly seldom or never fails to be sold Cheaper, in process of time, than was the foreign Article for which it is a substitute. The internal competition, which takes place, soon does away every thing like Monopoly, and by degrees reduces the price of the Article to the minimum of a reasonable profit on the Capital employed. This accords with the reason of the thing and with experience.

Whence it follows, that it is the interest of a community with a view to eventual and permanent oeconomy, to encourage the growth of manufactures. In a national view, a temporary enhancement of price must always be well compensated by a permanent reduction of it.

* * *

There seems to be a moral certainty, that the trade of a country which is both manufacturing and Agricultural will be more lucrative and prosperous, than that of a Country, which is, merely Agricultural...

Another circumstance which gives a superiority of commercial advantages to states, that manufacture as well as cultivate, consists in the more numerous attractions, which a more diversified market offers to foreign Customers, and greater scope, which it affords to mercantile enterprise. It is a position of indisputable truth in Commerce, depending too on very obvious reasons, that the greatest resort will ever be to those marts where commodities, while equally abundant, are most various. . . .

... Two important inferences are to be drawn, one, that there is always a higher probability of a favorable balance of Trade, in regard to countries in which manufactures founded on the basis of a thriving Agriculture flourish, than in regard to those, which are confined wholly or almost wholly to Agriculture; the other (which is also a consequence of the first) that countries of the former description are likely to possess more pecuniary wealth, or money, than those of the latter.

* * *

Not only the wealth; but the independence and security of a Country, appear to be materially connected with the prosperity of manufactures. Every nation, with a view to those great objects, ought to endeavour to possess within itself all the essentials of national supply. These comprise the means of Subsistence habitation clothing and defence.

The possession of these is necessary to the perfection of the body politic, to the safety as well as to the welfare of the society; the want of either, is the want of an important organ of political life and Motion; and in the various crises which await a state, it must severely feel the effects of any such deficiency. The extreme embarrassments of the United States during the late War, from an incapacity of supplying themselves, are still matter of keen recollection: A future war might be expected again to exemplify the mischiefs and dangers of a situation, to which that incapacity is still in too great a degree applicable, unless changed by timely and vigorous exertion. To effect this change as fast as shall be prudent, merits all the attention and all the Zeal of our Public Councils; 'tis the next great work to be accomplished.

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One more point of view only remains in which to Consider the expediency of encouraging manufacturers in the United states.

It is not uncommon to meet with an opinion that though the promoting of manufactures may be the interest of a part of the Union, it is contrary to that of another part. The Northern & southern regions are sometimes represented as having adverse interest in this respect. Those are called Manufacturing, these Agricultural states; and a species of opposition is imagined to subsist between the Manufacturing and Agricultural interests.

This idea of an opposition between those two interest is the common error of the early periods of every country. . . But it is nevertheless a maxim well established by experience, and generally acknowledged, where there has been sufficient experience, that the aggregate prosperity of manufactures, and the aggregate prosperity of Agriculture are intimately connected. . . .

* * *

... If the Northern and middle states should be the principal scenes of such establishments, they would immediately benefit the more southern, by creating a demand for productions; some of which they have in common with the other states, and others of which are either peculiar to them, or more abundant, or of better quality, than elsewhere. These productions, principally are Timber, flax, Hemp, Cotton, Wool, raw silk, Indigo, iron, lead, furs, hides, skins and coals. Of these articles Cotton & Indigo are peculiar to the southern states; as are hitherto Lead & Coal. Flax and Hemp are or may be raised in greater abundance there, than in the More Northern states; and the Wool of Virginia is said to be of better quality than that of any other state: a Circumstance rendered the more probable by the reflection that Virginia embraces the same latitudes with the finest Wool Countries of Europe. The Climate of the south is also better adapted to the production of silk.

The extensive cultivation of Cotton can perhaps hardly be expected, but from the previous establishment of domestic Manufactories of the Article; and the surest encouragement and vent, for the others, would result from similar establishments in respect to them.

* * *

In order to a better judgment of the Means proper to be resorted to by the United states, it will be of use to Advert to those which have been employed with success in other Countries. The principal of these are.

I Protecting duties—or duties on those foreign articles which are the rivals of the domestic ones, intended to be encouraged. . . . They enable the National Manufacturers to undersell all their foreign Competitors. . . .

II Prohibitions of rival articles or duties equivalent to prohibitions. . . . In general it is only fit to be employed when a manufacture, has made such a progress and is in so many hands as to insure a due competition, and an adequate supply on reasonable terms. Of duties equivalent to prohibitions, there are examples in the Laws of the United States, and there are other Cases to which the principle may be advantageously extended, but they are not numerous.

* * *

VIII The encouragement of new inventions and discoveries, at home, and of the introduction into the United States of such as may have been made in other countries; particularly those, which relate to machinery.

This is among the most useful and unexceptionable of the aids, which can be given to manufactures. The usual means of that encouragement are pecuniary rewards, and, for a time, exclusive privileges. The first must be employed, according to the occasion, and the utility of the invention, or discovery: For the last, so far as respects "authors and inventors" provision has been made by Law. But it is desirable in regard to improvements and secrets of extraordinary value, to be able to extend the same benefit to Introducers, as well as Authors and Inventors; a policy which has been practiced with advantage in other countries. Here, however, as in some other cases, there is cause to regret, that the competency of the authority of the National Government to the good, which might be done, is not without a question. Many aids might be given to industry; many internal improvements of primary magnitude might be promoted, by an authority operating throughout the Union, which cannot be effected, as well, if at all, by an authority confined within the limits of a single state.

* * *

IX Judicious regulations for the inspection of manufactured commodities. This is not among the least important of the means, by which the prosperity of manufactures may be promoted. It is indeed in many cases one of the most essential. Contributing to prevent frauds upon consumers at home and exporters to foreign countries—to improve the quality & preserve the character of the national manufactures, it cannot fail to aid the expeditious and advantageous Sale of them, and to serve as a guard against successful competition from other quarters. . . .

X The facilitating of pecuniary remittances from place to place is a point of considerable moment to trade in general, and to manufactures in particular; by rendering more easy the purchase of raw materials and provisions and the payment for manufactured supplies. A general circulation of Bank paper, which is to be expected from the institution lately established will be a most valuable mean to this end. But much good would also accrue from some additional provisions respecting inland bills of exchange. If those drawn in one state payable in another were made negotiable, everywhere, and interest and damages allowed in case of protest, it would greatly promote negotiations between the Citizens of different states, by rendering them more secure; and, with it the convenience and advantage of the Merchants and manufacturers of each.

XI The facilitating of the transportation of commodities. Improvements favoring this object intimately concern all the domestic interests of a community; but they may without impropriety be mentioned as having an important relation to manufactures. . . .

There can certainly be no object, more worthy of the cares of the local administrations; and it were to be wished, that there was no doubt of the power of the national Government to lend its direct aid, on a comprehensive plan.... "Good roads, canals, and navigable rivers, by diminishing the expence of carriage, put the remote parts of a country more nearly upon a level with those in the neighborhood of the town. They are upon that account the greatest of all improvements. They encourage the cultivation of the remote, which must always be the most extensive circle of the country....

* * *

All the additional duties which shall be laid . . . will yield a considerable surplus.

This surplus will serve.

First. To constitute a fund for paying the bounties which shall have been decreed.

Secondly. To constitute a fund for the operations of a Board, to be established, for promoting Arts, Agriculture, Manufactures and Commerce . . .

* *

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In countries where there is great private wealth much may be effected by the voluntary contributions of patriotic individuals, but in a community situated like that of the United States, the public purse must supply the deficiency of private resource. In what can it be so useful as in prompting and improving the efforts of industry? All which is humbly submitted.

Source:

Harold C. Syrett, ed. *The Papers of Alexander Hamilton*. New York: Columbia University Press, 1961-87.

3. CONSTITUTION OF THE AMERICAN FEDERATION OF LABOR, 1886

Charter of organization for the American Federation of Labor (AFL), the association of trade unions formed in December 1886 at a national labor convention in Columbus, Ohio. Delegates of the Federation of Organized Trades and Labor Unions and other labor groups, representing virtually the whole American trade union movement, assembled at Columbus in hopes of organizing all skilled craft unions under a single aegis. They founded the AFL as a permanent federation of trade unions, and elected Samuel Gompers its first president, a post he held every year except one until 1924. The constitution spelled out the AFL's structure and principles. It pledged strict recognition of each trade's autonomy and established the national or international union as the new federation's basic organizational unit. A membership tax was to be levied to raise money to assist striking workers and fund AFL legislative initiatives. The executive council, responsible for administering affairs at the national level, was charged with settling jurisdictional disputes, lobbying for legislation, investigating strikes and lockouts, and influencing public opinion.

PREAMBLE

Whereas, A struggle is going on in all the nations of the civilized world, between the oppressors and the oppressed of all countries, a struggle between the capitalist and the laborer, which grows in intensity from year to year, and will work disastrous results to the toiling millions, if they are not combined for mutual protection and benefit.

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It therefore behooves the representatives of the Trades and Labor Unions of America, in Convention, assembled, to adopt such measures and disseminate such principles among the mechanics and laborers of our country as will permanently unite them, to secure the recognition of the rights to which they are justly entitled.

We therefore declare ourselves in favor of the formation of a thorough Federation, embracing every Trade and Labor Organization in America.

CONSTITUTION

Article I—Name

Section 1. This association shall be known as "The American Federation of Labor," and shall consist of such Trades and Labor Unions as shall conform to its rules and regulations.

Article II—Objects

Section 1. The objects of this Federation shall be the encouragement and formation of local Trades and Labor Unions, and the closer Federation of such societies through the organization of Central Trades and Labor Unions in every city, and the further combination of such bodies into state, territorial, or provincial organizations, to secure legislation in the interests of the working masses.

Sec. 2. The establishment of National and International Trades Unions, based upon a strict recognition of the autonomy of each trade, and the promotion and advancement of such bodies.

Sec. 3. An American Federation of all National and International Trades Unions, to aid and assist each other; and, furthermore, to secure National Legislation in the interests of the working people, and influence public opinion, by peaceful and legal methods, in favor of Organized Labor.

Sec. 4. To aid and encourage the labor press of America.

Article III—Convention

Section 1. The convention of the Federation shall be held annually, on the second Tuesday of December, at such place as the delegates have selected at the preceding Convention.

Article IV—Representation

Section 1. The basis of representation in the convention shall be: From National or International Unions, for less than four thousand members, one delegate; four thousand or more, two delegates; eight thousand or more, three delegates; sixteen thousand or more, four delegates; thirtytwo thousand or more, five delegates; and so on; and from each Local or District Trades Union, not connected with, or having a National or International head, affiliated with this Federation, one delegate.

Sec. 2. No organization which has seceded from any Local, National or International or organization, shall be allowed a representation or recognition in this Federation.

Article V—Officers

Section 1. The officers of the Federation shall consist of a President, two Vice-Presidents, a Secretary, and a Treasurer, to be elected by the Convention.

Sec. 2. At the opening of the Convention the President shall take the chair and call the Convention to order, and preside until his successor is elected.

Sec. 3. The following Committee, consisting of three members each, shall be appointed by the President: 1st, Credentials; 2d, Rules and Order of Business; 3d, Resolutions; 4th, Finance; 5th, Report of Executive Council.

Sec. 4. Should a vacancy in any office occur between the annual meetings of the Convention, such vacancies shall be filled by the President of the Federation, by and with consent of the Executive Council. When a vacancy occurs in the office of President, the Vice-Presidents shall succeed in their respective order.

Sec. 5. The President and Secretary shall be members of the succeeding Convention in case they are not delegates, but without vote.

Article VI—Executive Council

Section 1. The Officers shall be an Executive Council with power to watch legislative measures directly affecting the interests of working people, and to initiate, whenever necessary, such legislative action as the Convention may direct. Sec. 2. The Executive Council shall use every possible means to organize new National or International Trades Unions, and to organize local Trades Unions and connect them with the Federation, until such time as there are a sufficient number to form a National or International Union, when it shall be the duty of the President of the Federation to see that such organization is formed.

Sec. 3. While we recognize the right of each trade to manage its own affairs, it shall be the duty of the Executive Council to secure the unification of all labor organizations, so far as to assist each other in any justifiable boycott, and with voluntary financial help in the event of a strike or lock-out, when duly approved by the Executive Council.

Sec. 4. When a strike has been approved by the Executive Council, the particulars of the difficulty, even if it be a lock-out, shall be explained in a circular issued by the President of the Federation to the unions affiliated therewith. It shall then be the duty of all affiliated societies to urge their Local Unions and members to make liberal financial donations in aid of the working people involved.

Article VII—Revenue

Section 1. The revenue of the Federation shall be derived from International, National, District and Local organizations, which shall pay into the treasury of the Federation a per capita tax of onehalf cent per month for each member in good standing, the same to be payable monthly to the Treasurer of the Federation.

Sec. 2. Delegates shall not be entitled to a seat in this Federation, unless the per capita tax of their organization is paid in full.

Sec. 3. Any organization, affiliated with this Federation, not paying its per capita tax on or before the 15th of each month, shall be notified of the fact by the President of the Federation, and if at the end of three months it is still in arrears, it shall be suspended from membership in the Federation, and can only be reinstated by vote of the Convention. Sec. 4. Each society affiliated with this Federation, shall make a monthly report of its standing and progress to the President of the Federation.

Sec. 5. It shall be the duty of the President to attend to all correspondence, publish a monthly journal, and travel, with consent of the Executive Council, wherever required in the interest of the Federation. His salary shall be \$1,000 per year, payable monthly, with mileage and expenses.

Sec. 6. Whenever the revenue of the Federation shall warrant such action, the Executive Council shall authorize the sending out of Trades Union speakers, from place to place, in the interests of the Federation.

Sec. 7. The funds of the Federation shall be banked monthly by three Trustees, who shall be selected by the Executive Council. The said Trustees shall be residents of the same city with the Treasurer. No money shall be paid out only in conformity with the rules laid down by the Executive Council.

Sec. 8. It shall be the duty of the Secretary to attend to such business as may be decided by the Executive Council.

Sec. 9. The accounts of the year shall be closed fourteen days prior to the assembling of the Convention, and a balance sheet, duly certified, shall be presented to the same.

Sec. 10. The remuneration for the loss of time by the executive council shall be at the rate of \$3.000 per diem; traveling and incidental expenses to be also defrayed.

Article VIII—Miscellaneous

Section 1. In all questions not covered by this Constitution, the Executive Council shall have power to make rules to govern the same, and shall report accordingly to the Federation.

Sec. 2. Charters for the Federation shall be granted by the President of the Federation, by and with the consent of the Executive Council, to all National and International, and Local bodies affiliated with this Federation.

Sec. 3. Any seven wage workers of good character, an favorable to Trades Unions, and not members of any body affiliated with this Federa-

tion, who will subscribe to this Constitution, shall have the power to form a local body, to be known as a "Federal Labor Union," and they shall hold regular meetings for the purpose of strengthening and advancing the Trades Union movement, and shall have the power to make their own rules in conformity with this Constitution, and shall be granted a local charter by the President of this Federation, provided the request for a charter be endorsed by the nearest Local or National Trades Union officials connected with this Federation.

Sec. 4. The charter fee for affiliated bodies shall be \$5.00, payable to the Treasurer of the Federation.

Sec. 5. Where there are one or more Local Unions in any city, belonging to a National or International Union, affiliated with this Federation, it shall be their duty to organize a Trades Assembly or Central Labor Union, or join such body, if already in existence.

Article IX—Amendments

Section 1. This Constitution can be amended or altered only at a regular session of the Convention, and to do so, it shall require a two-thirds vote of the delegates, and must be ratified within six weeks thereafter, by a majority vote of the members of the societies composing this Federation.

Sec. 2. This Constitution shall go into effect March 1st, 1887.

Source:

Report of the Sixth Annual Session of the Federation of Organized Trades and Labor Unions of the United States and Canada. Official Archives of the American Federation of Labor and Congress of Individual Organizations, Silver Spring, MD.

4. INTERSTATE COMMERCE ACT, 1887

Federal law that established the Interstate Commerce Commission (ICC), the first federal administrative agency. The act, introduced by Illinois senator Shelby M. Cullom and enacted on February 4, 1887, came as the result of public outcry over railroad abuses. The act applied only to railroads traveling through two or more states and provided that all railroad charges be "reasonable and just." It prohibited pooling arrangements, rebates, drawbacks, and other discriminatory rates, and it made the practice of charging more for a short haul than a long haul illegal. The ICC, charged with regulating railroad management, had the power to subpoena witnesses and documents and to require annual reports. The commission was strengthened by later legislation.

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Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the provisions of this act shall apply to any common carrier or carriers engaged in the transportation of passengers or property wholly by railroad, or partly by railroad and partly by water when both are used, under a common control, management, or arrangement, for a continuous carriage or shipment, from one State or Territory of the United States, or the District of Columbia, to any other State or Territory of the United States, or the District of Columbia, or from any place in the United States to an adjacent foreign country, or from any place in the United States through a foreign country to any other place in the United States, and also to the transportation in like manner of property shipped from any place in the United States to a foreign country and carried from such place to a port of trans-shipment, or shipped from a foreign country to any place in the United States and carried to such place from a port of entry either in the United States or an adjacent foreign country: Provided, however, That the provisions of this act shall not apply to the transportation of passengers or property, or to the receiving, delivering, storage, or handling of property, wholly within one State, and not shipped to or from a foreign country from or to any State or Territory as aforesaid.

The term "railroad" as used in this act shall include all bridges and ferries used or operated in connection with any railroad, and also all the road in use by any corporation operating a railroad, whether owned or operated under a contract, agreement, or lease; and the term "transportation" shall include all instrumentalities of shipment or carriage.

All charges made for any service rendered or to be rendered in the transportation of passengers or property as aforesaid, or in connection therewith, or for the receiving, delivering, storage, or handling of such property, shall be reasonable and just; and every unjust and unreasonable charge for such service is prohibited and declared to be unlawful.

Sec. 2. That if any common carrier subject to the provisions of this act shall, directly or indirectly, by any special rate, rebate, drawback, or other device, charge, demand, collect, or receive from any person or persons a greater or less compensation for any service rendered, or to be rendered, in the transportation of passengers or property, subject to the provisions of this act, than it charges, demands, collects, or receives from any other person or persons for doing for him or them a like and contemporaneous service in the transportation of a like kind of traffic under substantially similar circumstances and conditions, such common carrier shall be deemed guilty of unjust discrimination, which is hereby prohibited and declared to be unlawful.

Sec. 3. That it shall be unlawful for any common carrier subject to the provisions of this act to make or give any undue or unreasonable preference or advantage to any particular person, company, firm, corporation, or locality, or any particular description of traffic, in any respect whatsoever, or to subject any particular person, company, firm, corporation, or locality, or any particular description of traffic, to any undue or unreasonable prejudice or disadvantage in any respect whatsoever.

Every common carrier subject to the provisions of this act shall according to their respective powers, afford all reasonable, proper, and equal facilities for the interchange of traffic between their respective lines, and for the receiving, forwarding, and delivering of passengers and property to and from their several lines and those connection therewith, and shall not discriminate in their rates and charges between such connecting lines; but this shall not be construed as requiring any such common carrier to give the use of its tracks or terminal facilities to another carrier engaged in like business.

Sec. 4. That it shall be unlawful for any common carrier subject to the provisions of this act to charge or receive any greater compensation in the aggregate for the transportation of passengers or of like kind of property, under substantially similar circumstances and conditions, for a shorter than for a longer distance over the same line, in the same direction, the shorter being included within the longer distance; but this shall not be construed as authorizing any common carrier within the terms of this act to charge and receive as great compensation for a shorter as for a longer distance: Provided, however, That upon application to the Commission appointed under the provisions of this act, such common carrier may, in special cases, after investigation by the Commission, be authorized to charge less for longer than for shorter distances for the transportation of passengers or property; and the Commission may from time to time prescribe the extent to which such designated common carrier may be relieved from the operation of this section of this act.

Sec. 5. That it shall be unlawful for any common carrier subject to the provisions of this act to enter into any contract, agreement, or combination with any other common carrier or carriers for the pooling of freights of different and competing railroads, or to divide between them the aggregate or net proceeds of the earnings of such railroads, or any portion thereof; and in any case of an agreement for the pooling of freights as aforesaid, each day of its continuance shall be deemed a separate offense.

Sec. 6. That every common carrier subject to the provisions of this act shall print and keep for public inspection schedules showing the rates and fares and charges for the transportation of passengers and property which any such com-

mon carrier has established and which are in force at the time upon its railroad, as defined by the first section of this act. The schedules printed as aforesaid by any such common carrier shall plainly state the places upon its railroad between which property and passengers will be carried, and shall contain the classification of freight in force upon such railroad, and shall also state separately the terminal charges and any rules or regulations which in any wise change, affect, or determine any part or the aggregate of such aforesaid rates and fares and charges. Such schedules shall be plainly printed in large type, of at least the size of ordinary pica, and copies for the use of the public shall be kept in every depot or station upon any such railroad, in such places and in such form that they can be conveniently inspected.

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Every common carrier subject to the provisions of this act shall file with the Commission hereinafter provided for copies of its schedules of rates, fares, and charges which have been established and published in compliance with the requirements of this section, and shall promptly notify said Commission of all changes made in the same. Every such common carrier shall also file with said Commission copies of all contracts, agreements, or arrangements with other common carriers in relation to any traffic affected by the provisions of this act to which it may be a party. And in cases where passengers and freight pass over continuous lines or routes operated by more than one common carrier, and the several common carriers operating such lines or routes establish joint tariffs of rates or fares or charges for such continuous lines or routes, copies of such joint tariffs shall also, in like manner, be filed with said Commission. Such joint rates, fares, and charges on such continuous lines so filed as aforesaid shall be made public by such common carriers when directed by said Commission. . . .

If any such common carrier shall neglect or refuse to file or publish its schedules or tariffs of rates, fares, and charges as provided in this section, or any part of the same, such common carrier shall, in addition to other penalties herein prescribed, be subject to a writ of mandamus. . .and failure to comply with its requirements shall be punishable as and for a contempt; and the said Commissioners, as complainants, may also apply, in any such circuit of the United States, for a writ of injunction against such common carrier, to restrain such common carrier from receiving or transporting property among the several States and Territories of the United States. . . .

Sec. 7. That it shall be unlawful for any common carrier subject to the provisions of this act to enter into any combination, contract, or agreement, expressed or implied, to prevent, by change of time schedule, carriage in different cars, or by other means or devices, the carriage of freights from being continuous from the place of shipment to the place of destination; and no break of bulk, stoppage, or interruption made by such common carrier shall prevent the carriage of freights from being and being treated as one continuous carriage from the place of shipment to the place of destination, unless such break, stoppage, or interruption was made in good faith for some necessary purpose, and without any intent to avoid or unnecessarily interrupt such continuous carriage or to evade any of the provisions of this act.

Sec. 8. That in case any common carrier subject to the provisions of this act shall do, cause to be done, or permit to be done any act, matter, or thing in this act prohibited or declared to be unlawful, or shall omit to do any act, matter, or thing in this act required to be done, such common carrier shall be liable to the person or persons injured thereby for the full amount of damages sustained in consequence of any such violation of the provisions of this act, together with a reasonable counsel or attorney's fee, to be fixed by the court in every case of recovery, which attorney's fee shall be taxed and collected as part of the costs in the case.

Sec. 10. That any common carrier subject to the provisions of this act, or, whenever such common carrier is a corporation, any director or officer thereof, or any receiver, trustee, lessee, agent, or person acting for or employed by such corporation, who, alone or with any other corporation, company, person, or party, shall willfully do or cause to be done, or shall willingly suffer or permit to be done, any act, matter, or thing in this act prohibited or declared to be unlawful... shall be deemed guilty of a misdemeanor, and shall ... be subject to a fine of not to exceed five thousand dollars for each offense.

Sec. 11. That a Commission is hereby created and established to be known as the Inter-State Commerce Commission, which shall be composed of five Commissioners, who shall be appointed by the President, by and with the advice and consent of the Senate. . . . Any Commissioner may be removed by the President for inefficiency, neglect of duty, or malfeasance in office. Not more than three of the Commissioners shall be appointed from the same political party. No person in the employ of or holding any official relation to any common carrier subject to the provisions of this act, or owning stock or bonds thereof, or who is in any manner pecuniarily interested therein, shall enter upon the duties of or hold such office. Said Commissioners shall not engage in any other business, vocation, or employment. No vacancy in the Commission shall impair the right of the remaining Commissioners to exercise all the powers of the Commission.

Sec. 12. That the Commission hereby created shall have authority to inquire into the management of the business of all common carriers subject to the provisions of this act . . . and shall have the right to obtain from such common carriers full and complete information necessary to enable the Commission to perform the duties and carry out the objects for which it was created; and for the purposes of this act the Commission shall have power to require the attendance and testimony of witnesses and the production of all books, papers, tariffs, contracts, agreements, and documents relating to any matter under investigation, and to that end may invoke the aid of any court of the United States in requiring the attendance and testimony of witnesses and the production of books, papers, and documents under the provisions of this section.

Sec. 13. That any person, firm, corporation, or association, or any mercantile, agricultural, or manufacturing society, or any body politic or municipal organization complaining of anything done or omitted to be done by any common carrier subject to the provisions of this act in contravention of the provisions thereof, may apply to said Commission by petition. . . .

Said Commission shall in like manner investigate any complaint forwarded by the railroad commissioner or railroad commission of any State or Territory . . . and may institute any inquiry on its own motion in the same manner and to the same effect as though complaint had been made.

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Sec. 16. That whenever any common carrier, as defined in and subject to the provisions of this act, shall violate or refuse or neglect to obey any lawful order or requirement of the Commission in this act named, it shall be the duty of the Commission, and lawful for any company or person interested in such order or requirement, to apply, in a summary way, by petition . . . and the said court shall have power to hear and determine the matter. . . .

* * *

Sec. 20. That the Commission is hereby authorized to require annual reports from all common carriers subject to the provisions of this act. . . .

Sec. 21. That the Commission shall, on or before the first day of December in each year, make a report to the Secretary of the Interior, which shall be by him transmitted to Congress... This report shall contain such information and data collected by the Commission as may be considered of value in the determination of questions connected with the regulation of commerce, together with such recommendations as to additional legislation relating thereto as the Commission may deem necessary.

Sec. 22. That nothing in this act shall apply to the carriage, storage, or handling of property free or at reduced rates for the United States, State, or municipal governments, or for charitable purposes, or to or from fairs and expositions for exhibition thereat, or the issuance of mileage, excursion, or commutation passenger tickets; nothing in this act shall be construed to prohibit any common carrier from giving reduced rates to ministers of religion; nothing in this act shall be construed to prevent railroads from giving free carriage to their own officers and employees, or to prevent the principal officers of any railroad company or companies from exchanging passes or tickets with other railroad companies for their officers and employees; and nothing in this act contained shall in any way abridge or alter the remedies now existing at common law or by statute, but the provisions of this act are in addition to such remedies: Provided, That no pending litigation shall in any way be affected by this act.

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Approved, February 4, 1887.

Source:

Statutes at Large, vol. 25, pp. 379-387.

5. ANDREW CARNEGIE, "WEALTH," 1889

Essay, sometimes called "The Gospel of Wealth," written by American industrialist and philanthropist Andrew Carnegie and published in the North American Review in June 1889; he defended laissezfaire capitalism and also argued that rich men must use their surplus wealth to benefit the community. After claiming that competition and inequality of wealth are the inevitable costs of material development, Carnegie enunciated the duties of the rich man: to live modestly, to provide moderately for his dependents, and to administer all surplus revenues as trust funds, which he must administer to advance the general welfare of the community. The millionaire should be the "trustee for the poor." Carnegie followed this philosophy in his own life, donating some \$350 million to various social, educational, and cultural causes, especially public libraries, many of which are still in regular use.

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The problem of our age is the proper administration of wealth, so that the ties of brotherhood may still bind together the rich and poor in harmonious relationship. The conditions of human life have not only been changed, but revolutionized, within the past few hundred years. In former days there was little difference between the dwelling, dress, food, and environment of the chief and those of his retainers. The Indians are to-day where civilized man then was. When visiting the Sioux, I was led to the wigwam of the chief. It was just like the others in external appearance, and even within the difference was trifling between it and those of the poorest of his braves. The contrast between the palace of the millionaire and the cottage of the laborer with us to-day measures the change which has come with civilization.

This change, however, is not to be deplored, but welcomed as highly beneficial. It is well, nay, essential for the progress of the race, that the houses of some should be homes for all that is highest and best in literature and the arts, and for all the refinements of civilization, rather than that none should be so. Much better this great irregularity than universal squalor. Without wealth there can be no Maecenas. The "good old times" were not good old times. Neither master nor servant was as well situated then as to-day. A relapse to old conditions would be disastrous to both-not the least so to him who serves-and would sweep away civilization with it. But whether the change be for good or ill, it is upon us, beyond our power to alter, and therefore to be accepted and made the best of. It is a waste of time to criticize the inevitable.

It is easy to see how the change has come. One illustration will serve for almost every phase of the cause. In the manufacture of products we have the whole story. It applies to all combinations of human industry, as stimulated and enlarged by the inventions of this scientific age. Formerly articles were manufactured at the domestic hearth or in small shops which formed part of the household. The master and his apprentices worked side by side, the latter living with the master, and therefore subject to the same conditions. When these apprentices rose to be masters, there was little or no change in their mode of life, and they, in turn, educated in the same routine succeeding apprentices. There was, substantially, social equality, and even political equality, for those engaged in industrial pursuits had then little or no political voice in the State.

But the inevitable result of such a mode of manufacture was crude articles at high prices. Today the world obtains commodities of excellent quality at prices which even the generation preceding this would have deemed incredible. In the commercial world similar causes have produced similar results, and the race is benefited thereby. The poor enjoy what the rich could not before afford. What were the luxuries have become the necessaries of life. The laborer has now more comforts than the farmer had a few generations ago. The farmer has more luxuries than the landlord had, and is more richly clad and better housed. The landlord has books and pictures rarer, and appointments more artistic, than the King could then obtain.

The price we pay for this salutary change is, no doubt, great. We assemble thousands of operatives in the factory, in the mine, and in the counting-house, of whom the employer can know little or nothing, and to whom the employer is little better than a myth. All intercourse between them is at an end. Rigid Castes are formed, and, as usual, mutual ignorance breeds mutual distrust. Each Caste is without sympathy for the other, and ready to credit anything disparaging in regard to it. Under the law of competition, the employer of thousands is forced into the strictest economies, among which the rates paid to labor figure prominently, and often there is friction between the employer and the employed, between capital and labor, between rich and poor. Human society loses homogeneity.

The price which society pays for the law of competition, like the price it pays for cheap comforts and luxuries, is also great; but the advantages of this law are also greater still, for it is to this law that we owe our wonderful material development, which brings improved conditions in its train. But, whether the law is benign or not, we must say of it, as we say of the change in the conditions of men to which we have referred: It is here, we cannot evade it; no substitutes for it have been found; and while the law may be sometimes hard for the individual, it is best for the race, because it insures the survival of the fittest in every department. We accept and welcome, therefore, as conditions to which we must accommodate ourselves, great inequality of environment, the concentration of business, industrial and commercial, in the hands of a few, and the law of competition between these, as being not only beneficial, but essential for the future progress of the race. Having accepted these, it follows that there must be great scope for the exercise of special ability in the merchant and in the manufacturer who has to conduct affairs upon a great scale. That this talent for organization and management is rare among men is proved by the fact that it invariably secures for its possessor enormous rewards, no matter where or under what laws or conditions. The experienced in affairs always rate the Man whose services can be obtained as a partner as not only the first consideration, but such as to render the question of his capital scarcely worth considering, for such men soon create capital; while, without the special talent required, capital soon takes wings. Such men become interested in forms or corporations using millions; and estimating only simple interest to be made upon the capital invested, it is inevitable that their income must exceed their expenditures, and that they must accumulate wealth. Nor is there any middle ground which such men can occupy, because the great manufacturing or commercial concern which does not earn at least interest upon its capital

soon becomes bankrupt. It must either go forward or fall behind: to stand still is impossible. It is a condition essential for its successful operation that it should be thus far profitable, and even that, in addition to interest on capital, it should make profit. It is a law, as certain as any of the others named, that men possessed of this peculiar talent for affairs, under the free play of economic forces, must, of necessity, soon be in receipt of more revenue than can be judiciously expended upon themselves; and this law is as beneficial for the race as the others.

Objections to the foundations upon which society is based are not in order, because the condition of the race is better with these than it has been with any others which have been tried. Of the effect of any new substitutes proposed we cannot be sure. The Socialist or Anarchist who seeks to overturn present conditions is to be regarded as attacking the foundation upon which civilization itself rests, for civilization took its start from the day that the capable, industrious workman said to his incompetent and lazy fellow, "If thou dost not sow, thou shalt not reap," and thus ended primitive Communism by separating the drones from the bees. One who studies this subject will soon be brought face to face with the conclusion that upon the sacredness of property civilization itself depends-the right of the laborer to his hundred dollars in the savings bank, and equally the legal right of the millionaire to his millions. To those who propose to substitute Communism for this intense Individualism the answer, therefore, is: The race has tried that. All progress from that barbarous day to the present time has resulted from its displacement. Not evil, but good, has come to the race from the accumulation of wealth by those who have the ability and energy that produce it.

But even if we admit for a moment that it might be better for the race to discard its present foundation, Individualism, that it is a nobler ideal that man should labor, not for himself alone, but in and for a brotherhood of his fellows, and share with them all in common, realizing Swedenborg's idea of Heaven, where, as he says, the angels derive their happiness, not from laboring for self, but for each other-even admit all this, and a sufficient answer is, This is not evolution, but revolution. It necessitates the changing of human nature itself-a work of aeons, even if it were good to change it, which we cannot know. It is not practicable in our day or in our age. Even if desirable theoretically, it belongs to another and long-succeeding sociological stratum. Our duty is with what is practicable now; with the next step possible in our day and generation. It is criminal to waste our energies in endeavoring to uproot, when all we can profitably or possibly accomplish is to bend the universal tree of humanity a little in the direction most favorable to the production of good fruit under existing circumstances. We might as well urge the destruction of the highest existing type of man because he failed to reach our ideal as to favor the destruction of Individualism, Private Property, the Law of Accumulation of Wealth, and the Law of Competition; for these are the highest results of human experience, the soil in which society so far has produced the best fruit. Unequally or unjustly, perhaps, as these laws sometimes operate, and imperfect as they appear to the Idealist, they are, nevertheless, like the highest type of man, the best and most valuable of all that humanity has yet accomplished.

We start, then, with a condition of affairs under which the best interests of the race are promoted, but which inevitably gives wealth to the few. Thus far, accepting conditions as they exist, the situation can be surveyed and pronounced good. The question then arises-and, if the foregoing be correct, it is the only question with which we have to deal-What is the proper mode of administering wealth after the laws upon which civilization is founded have thrown it into the hands of the few? And it is of this great question that I believe I offer the true solution. It will be understood that fortunes are here spoken of, not moderate sums saved by many years of effort, the returns from which are required for the comfortable maintenance and education of families. This is not wealth, but

only *competence*, which it should be the aim of all to acquire.

There are but three modes in which surplus wealth can be disposed of. It can be left to the families of the decedents; or it can be bequeathed for public purposes; or, finally, it can be administered during their lives by its possessors. Under the first and second modes most of the wealth of the world that has reached the few has hitherto been applied. Let us in turn consider each of these modes. The first is the most injudicious. In monarchical countries, the estates and the greatest portion of the wealth are left to the first son, that the vanity of the parent may be gratified by the thought that his name and title are to descend to succeeding generations unimpaired. The condition of this class in Europe to-day teaches the futility of such hopes or ambitions. The successors have become impoverished through their follies or from the fall in the value of land. Even in Great Britain the strict law of entail has been found inadequate to maintain the status of an hereditary class. Its soil is rapidly passing into the hands of the stranger. Under republican institutions the division of property among the children is much fairer, but the question which forces itself upon thoughtful men in all lands is: Why should men leave great fortunes to their children? If this is done from affection, is it not misguided affection? Observation teaches that, generally speaking, it is not well for the children that they should be so burdened. Neither is it well for the state. Beyond providing for the wife and daughters moderate sources of income, and very moderate allowances indeed, if any, for the sons, men may well hesitate, for it is no longer questionable that great sums bequeathed oftener work more for the injury than for the good of the recipients. Wise men will soon conclude that, for the best interests of the members of their families and of the state, such bequests are an improper use of their means.

It is not suggested that men who have failed to educate their sons to earn a livelihood shall cast them adrift in poverty. If any man has seen fit to rear his sons with a view to their living idle lives, or, what is highly commendable, has instilled in them the sentiment that they are in a position to labor for public ends without reference to pecuniary considerations, then, of course, the duty of the parent is to see that such are provided for in moderation. There are instances of millionaires' sons unspoiled by wealth, who, being rich, still perform great services in the community. Such are the very salt of the earth, as valuable as, unfortunately, they are rare; still it is not the exception, but the rule, that men must regard; and, looking at the usual result of enormous sums conferred upon legatees, the thoughtful man must shortly say, "I would as soon leave to my son a curse as the almighty dollar," and admit to himself that it is not the welfare of the children, but family pride, which inspires these enormous legacies.

As to the second mode, that of leaving wealth at death for public uses, it may be said that this is only a means for the disposal of wealth, provided a man is content to wait until he is dead before it becomes of much good in the world. Knowledge of the results of legacies bequeathed is not calculated to inspire the brightest hopes of much posthumous good being accomplished. The cases are not few in which the real object sought by the testator is not attained, nor are they few in which his real wishes are thwarted. In many cases the bequests are so used as to become only monuments of his folly. It is well to remember that it requires the exercise of not less ability than that which acquired the wealth to use it so as to be really beneficial to the community. Besides this, it may fairly be said that no man is to be extolled for doing what he cannot help doing, nor is he to be thanked by the community to which he only leaves wealth at death. Men who leave vast sums in this way may fairly be thought men who would not have left it at all, had they been able to take it with them. The memories of such cannot be held in grateful remembrance, for there is no grace in their gifts. It is not to be wondered at that such bequests seem so generally to lack the blessing.

The growing disposition to tax more and more heavily large estates left at death is a cheering indication of the growth of a salutary change in public opinion. The State of Pennsylvania now takes-subject to some exceptions-one-tenth of the property left by its citizens. The budget presented in the British Parliament the other day proposes to increase the death-duties; and, most significant of all, the new tax is to be a graduated one. Of all forms of taxation, this seems the wisest. Men who continue hoarding great sums all their lives, the proper use of which for public ends would work good to the community, should be made to feel that the community, in the form of the state, cannot thus be deprived of its proper share. By taxing estates heavily at death the state marks its condemnation of the selfish millionaire's unworthy life.

It is desirable that nations should go much further in this direction. Indeed, it is difficult to set bounds to the share of a rich man's estate which should go at his death to the public through the agency of the state, and by all means such taxes should be graduated, beginning at nothing upon moderate sums to dependents, and increasing rapidly as the amounts swell, until of the millionaire's hoard, as of Shylock's, at least:

" . . . The other half Comes to the privy coffer of the state."

This policy would work powerfully to induce the rich man to attend to the administration of wealth during his life, which is the end that society should always have in view, as being that by far most fruitful for the people. Nor need it be feared that this policy would sap the root of enterprise and render men less anxious to accumulate, for to the class whose ambition it is to leave great fortunes and be talked about after their death, it will attract even more attention, and, indeed, be a somewhat nobler ambition to have enormous sums paid over to the state from their fortunes.

There remains, then, only one mode of using great fortunes; but in this we have the true antidote for the temporary unequal distribution of wealth, the reconciliation of the rich and the poor-a reign of harmony-another ideal, differing, indeed, from that of the Communist in requiring only the further evolution of existing conditions, not the total overthrow of our civilization. It is founded upon the present most intense individualism, and the race is prepared to put it in practice by degrees whenever it pleases. Under its sway we shall have an ideal state, in which the surplus wealth of the few will become, in the best sense, the property of the many, because administered for the common good; and this wealth, passing through the hands of the few, can be made a much more potent force for the elevation of our race than if it had been distributed in small sums to the people themselves. Even the poorest can be made to see this, and to agree that great sums gathered by some of their fellow-citizens and spent for public purposes, from which the masses reap the principal benefit, are more valuable to them than if scattered among them through the course of many years in trifling amounts.

If we consider what results flow from the Cooper Institute, for instance, to the best portion of the race in New York not possessed of means, and compare these with those which would have arisen for the good of the masses from an equal sum distributed by Mr. Cooper in his lifetime in the form of wages, which is the highest form of distribution, being for work done and not for charity, we can form some estimate of the possibilities for the improvement of the race which lie embedded in the present law of the accumulation of wealth. Much of this sum, if distributed in small quantities among the people, would have been wasted in the indulgence of appetite, some of it in excess; and it may be doubted whether even the part put to the best use, that of adding to the comforts of the home, would have yielded results for the race, as a race, at all comparable to those which are flowing and are to flow from the Cooper Institute from generation to generation. Let the advocate of violent or radical change ponder well this thought.

We might even go so far as to take another instance, that of Mr. Tilden's bequest of five millions of dollars for a free library in the city of New York; but in referring to this one cannot help saying involuntarily, How much better if Mr. Tilden had devoted the last years of his own life to the proper administration of this immense sum; in which case neither legal contest nor any other cause of delay could have interfered with his aims. But let us assume that Mr. Tilden's millions finally become the means of giving to this city a noble public library, where the treasures of the world contained in books will be open to all forever, without money and without price. Considering the good of that part of the race which congregates in and around Manhattan Island, would its permanent benefit have been better promoted had these millions been allowed to circulate in small sums through the hands of the masses? Even the most strenuous advocate of Communism must entertain a doubt upon this subject. Most of those who think will probably entertain no doubt whatever.

Poor and restricted are our opportunities in this life; narrow our horizon; our best work most imperfect; but rich men should be thankful for one inestimable boon. They have it in their power during their lives to busy themselves in organizing benefactions from which the masses of their fellows will derive lasting advantage, and thus dignify their own lives. The highest life is probably to be reached, not by such imitation of the life of Christ as Count Tolstoi gives us, but, while animated by Christ's spirit, by recognizing the changed conditions of this age, and adopting modes of expressing this spirit suitable to the changed conditions under which we live; still laboring for the good of our fellows, which was the essence of his life and teaching, but laboring in a different manner.

This, then, is held to be the duty of the man of Wealth: First, to set an example of modest, unostentatious living, shunning display or extravagance; to provide moderately for the legitimate wants of those dependent upon him; and after doing so to consider all surplus revenues which come to him simply as trust funds, which he is called upon to administer, and strictly bound as a matter of duty to administer in the manner which, in his judgment, is best calculated to produce the most beneficial results for the community—the man of wealth thus becoming the mere agent and trustee for his poorer brethren, bringing to their service his superior wisdom, experience, and ability to administer, doing for them better than they would or could do for themselves.

We are met here with the difficulty of determining what are moderate sums to leave to members of the family; what is modest, unostentatious living; what is the test of extravagance. There must be different standards for different conditions. The answer is that it is as impossible to name exact amounts or actions as it is to define good manners, good taste, or the rules of propriety; but, nevertheless, these are verities, well known although undefinable. Public sentiment is quick to know and to feel what offends these. So in the case of wealth. The rule in regard to good taste in the dress of men or women applies here. Whatever makes one conspicuous offends the canon. If any family be chiefly known for display, for extravagance in home, table, equipage, for enormous sums ostentatiously spent in any form upon itself-if these be its chief distinctions, we have no difficulty in estimating its nature or culture. So likewise in regard to the use or abuse of its surplus wealth, or to generous, free-handed cooperation in good public uses, or to unabated efforts to accumulate and hoard to the last, whether they administer or bequeath. The verdict rests with the best and most enlightened public sentiment. The community will surely judge, and its judgments will not often be wrong.

The best uses to which surplus wealth can be put have already been indicated. Those who would administer wisely must, indeed, be wise, for one of the serious obstacles to the improvement of our race is indiscriminate charity. It were

better for mankind that the millions of the rich were thrown into the sea than so spent as to encourage the slothful, the drunken, the unworthy. Of every thousand dollars spent in so called charity to-day, it is probable that \$950 is unwisely spent; so spent, indeed, as to produce the very evils which it proposes to mitigate or cure. A well-known writer of philosophic books admitted the other day that he had given a quarter of a dollar to a man who approached him as he was coming to visit the house of his friend. He knew nothing of the habits of this beggar, knew not the use that would be made of this money, although he had every reason to suspect that it would be spent improperly. This man professed to be a disciple of Herbert Spencer; yet the quarter-dollar given that night will probably work more injury than all the money which its thoughtless donor will ever be able to give in true charity will do good. He only gratified his own feelings, saved himself from annoyanceand this was probably one of the most selfish and very worst actions of his life, for in all respects he is most worthy.

In bestowing charity, the main consideration should be to help those who will help themselves; to provide part of the means by which those who desire to improve may do so; to give those who desire to rise the aids by which they may rise; to assist, but rarely or never to do all. Neither the individual nor the race is improved by alms-giving. Those worthy of assistance, except in rare cases, seldom require assistance; the really valuable men of the race never do, except in cases of accident or sudden change. Every one has, of course, cases of individuals brought to his own knowledge where temporary assistance can do genuine good, and these he will not overlook. But the amount which can be wisely given by the individual for individuals is necessarily limited by his lack of knowledge of the circumstances connected with each. He is the only true reformer who is as careful and as anxious not to aid the unworthy as he is to aid the worthy, and, perhaps, even more so, for in almsgiving more injury is probably done by rewarding vice than by relieving virtue.

The rich man is thus almost restricted to following the examples of Peter Cooper, Enoch Pratt of Baltimore, Mr. Pratt of Brooklyn, Senator Stanford, and others, who know that the best means of benefiting the community is to place within its reach the ladders upon which the aspiring can rise—parks, and means of recreation, by which men are helped in body and mind; works of art, certain to give pleasure and improve the public taste, and public institutions of various kinds, which will improve the general condition of the people—in this manner returning their surplus wealth to the mass of their fellows in the forms best calculated to do them lasting good.

Thus is the problem of Rich and Poor to be solved. The laws of accumulation will be left free; the laws of distribution free. Individualism will continue, but the millionaire will be but a trustee for the poor; intrusted for a season with a great part of the increased wealth of the community, but administering it for the community far better than it could or would have done for itself. The best minds will thus have reached a stage in the development of the race in which it is clearly seen that there is no mode of disposing of surplus wealth creditable to thoughtful and earnest men into whose hands it flows save by using it year by year for the general good. This day already dawns. But a little while, and although, without incurring the pity of their fellows, men may die sharers in great business enterprises from which their capital cannot be or has not been withdrawn, and is left chiefly at death for public uses; yet the man who dies leaving behind him millions of available wealth, which was his to administer during life, will pass away "unwept, unhonored, and unsung," no matter to what uses he leaves the dross which he cannot take with him. Of such as these the public verdict will then be: "The man who dies thus rich dies disgraced."

Such, in my opinion, is the true Gospel concerning Wealth, obedience to which is destined some day to solve the problem of the Rich and the Poor, and to bring "Peace on earth, among men Good-Will."

Source:

John Scott, ed. Living Documents in American History. New York: Washington Square Press, 1964–68.

6. SHERMAN ANTITRUST ACT, 1890

First federal U.S. legislation to regulate trusts, enacted on July 2, 1890. Introduced by Republican senator John Sherman, it declared illegal "every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations." The legislation, based on Congress's constitutional power to regulate interstate commerce, grew out of public dissatisfaction with the abuses of business trusts and corporations controlling various commodities. While at first, Supreme Court decisions condemned labor rather than business practices, the act was used successfully in President Theodore Roosevelt's "trust-busting" campaigns and in later actions. The law was strengthened and clarified by the Clayton Antitrust Act of 1914.

An Act

To protect trade and commerce against unlawful restraints and monopolies.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

Sec. 1. Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is hereby declared to be illegal. Every person who shall make any such contract or engage in any such combination or conspiracy, shall be deemed guilty of a misdemeanor, and, on conviction thereof, shall be punished by fine not exceeding five thousand dollars, or by imprisonment not exceeding one year, or by both said punishments, in the discretion of the court.

Sec. 2. Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty of a misdemeanor, and, on conviction thereof, shall be punished by fine not exceeding five thousand dollars, or by imprisonment not exceeding one year, or by both said punishments, in the discretion of the court.

Sec. 3. Every contract, combination in form of trust or otherwise, or conspiracy, in restraint of trade or commerce in any Territory of the United States or of the District of Columbia, or in restraint of trade or commerce between any such Territory and another, or between any such Territory or Territories and any State or States or the District of Columbia, or with foreign nations, or between the District of Columbia and any State or States or foreign nations, is hereby declared illegal. Every person who shall make any such contract or engage in any such combination or conspiracy, shall be deemed guilty of a misdemeanor, and, on conviction thereof, shall be punished by fine not exceeding five thousand dollars, or by imprisonment not exceeding one year, or by both said punishments, in the discretion of the court.

Sec. 4. The several circuit courts of the United States are hereby invested with jurisdiction to prevent and restrain violations of this act; and it shall be the duty of the several district attorneys of the United States, in their respective districts, under the direction of the Attorney-General, to institute proceedings in equity to prevent and restrain such violations. Such proceedings may be by way of petition setting forth the case and praying that such violation shall be enjoined or otherwise prohibited. When the parties complained of shall have been duly notified of such petition the court shall proceed, as soon as may be, to the hearing and determination of the case; and pending such petition and before final decree, the court may at any time make such temporary restraining order or prohibition as shall be deemed just in the premises.

Sec. 5. Whenever it shall appear to the court before which any proceeding under section four of this act may be pending, that the ends of justice require that other parties should be brought before the court, the court may cause them to be summoned, whether they reside in the district in which the court is held or not; and subpoenas to that end may be served in any district by the marshal thereof.

Sec. 6. Any property owned under any contract or by any combination, or pursuant to any conspiracy (and being the subject thereof) mentioned in section one of this act, and being in the course of transportation from one State to another, or to a foreign country, shall be forfeited to the United States, and may be seized and condemned by like proceedings as those provided by law for the forfeiture, seizure, and condemnation of property imported into the United States contrary to law.

Sec. 7. Any person who shall be injured in his business or property by any other person or corporation by reason of anything forbidden or declared to be unlawful by this act, may sue therefor in any circuit court of the United States in the district in which the defendant resides or is found, without respect to the amount in controversy, and shall recover three fold the damages by him sustained, and the costs of suit, including a reasonable attorney's fee.

Sec. 8. That the word "person," or "persons," wherever used in this act shall be deemed to include corporations and associations existing under or authorized by the laws of either the United States, the laws of any of the Territories, the laws of any State, or the laws of any foreign country.

Source:

Statutes at Large, vol. 26, pp. 209-210.

7. PURE FOOD AND DRUG ACT, 1906

Federal legislation enacted on June 30, 1906, prohibiting the manufacture, sale, or transportation of adulterated or fraudulently labeled foods and drugs shipped in foreign or interstate commerce. Among the items prohibited were confectionery that contained dangerous colorings or flavorings, food composed of filthy or decomposed animal matter, food containing poisonous ingredients, and food adulterated to conceal inferior goods. Labels of proprietary medicines were required to indicate the percentages of narcotics, stimulants, or other potentially harmful ingredients.

The same day, Congress enacted the Meat Inspection Act, giving the U.S. secretary of agriculture the power to inspect meat and condemn products that are "unsound, unhealthful, unwholesome, or otherwise unfit for human food." The act was intended to correct unsanitary and dangerous practices in the meat-packing industry, such as resulted in the "embalmed beef" scandal, when soldiers in the Spanish-American War (1898) were fed tainted meat. The act allowed for federal inspection of all companies.

Although President Theodore Roosevelt and others had previously backed pure food and drug legislation, the impetus for these acts came from the publication of Upton Sinclair's The Jungle the same year. Sinclair, a socialist, meant his expose of conditions in the meat-packing industry to highlight the exploitation of immigrant workers like his book's protagonist. Instead, the public focused on the sections describing the processing of diseased cattle and the fate of workers who fell unreclaimed into open vats "till but the bones of them had gone out to the world as Durham's Pure Leaf Lard."

The 1906 Pure Food and Drug Act was superseded by the Food and Drug Act of June 24, 1938. It prohibited the sale of foods dangerous to health as well as foods, drugs, and cosmetics packaged in insanitary or contaminated containers. It required manufacturers of foods, drugs, and cosmetics to list their ingredients on the labels. It also prohibited the sale of "poisonous" or "deleterious" substances and broadened the definitions of "adulteration" and "misbranding." The Food and Drug Administration was authorized to enforce the act, and inspection stations were established in several large cities. Three months earlier, in the Wheeler-Lea Act, sponsored by Senator Burton K. Wheeler of Montana and Representative Clarence F. Lea of California, individuals and agencies were prohibited from presenting false or misleading statements about "food, drugs, diagnostic and therapeutic devices, and cosmetics" in interstate media. This statute gave the Federal Trade Commission control over such advertising and gave the Food and Drug Administration authority over questions of misbranding.

An Act

For preventing the manufacture, sale, or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines, and liquors, and for regulating traffic therein, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That is shall be unlawful for any article of food or drug which is adulterated or misbranded, within the meaning of this Act; and any person who shall violate any of the provisions of this section shall be guilty of a misdemeanor, and for each offense shall, upon conviction thereof, be fined not to exceed five hundred dollars or shall be sentenced to one year's imprisonment, or both such fine and imprisonment, in the discretion of the court, and for each subsequent offense and conviction thereof shall be fined not less than one thousand dollars or sentenced to one year's imprisonment, or both such fine and imprisonment, in the discretion of the court.

Sec. 2. That the introduction into any State or Territory or the District of Columbia from any other State or Territory or the District of Columbia, or from any foreign country, or shipment to any foreign country of any article of food or drugs which is adulterated or misbranded, within the meaning of this Act, is hereby prohibited; and any person who shall ship or deliver for shipment from any State or Territory or the District of Columbia to any other State or Territory or the District of Columbia, or to a foreign country, or who shall receive in any State or Territory or the District of Columbia from any other State or Territory or the District of Columbia, or foreign country, and having so received, shall deliver, in original unbroken packages, for pay or otherwise, or offer to deliver to any other person, any such article so adulterated or misbranded within the meaning of this Act, or any person who shall sell or offer for sale in the District of Columbia or the Territories of the United States any such adulterated or misbranded foods or drugs, or export or offer to export the same to any foreign country, shall be guilty of a misdemeanor, and for such offense be fined not exceeding two hundred dollars for the first offense, and upon conviction for each subsequent offense not exceeding three hundred dollars or be imprisoned not exceeding one year, or both, in the discretion of the court: Provided, That no article shall be deemed misbranded or adulterated within the provisions of this Act when intended for except to any foreign country and prepared or packed according to the specifications or directions of the foreign purchaser when no substance is used in the preparation or packing thereof in conflict with the laws of the foreign country to which said article is intended to be shipped; but if said article shall be in fact sold or offered for sale for domestic use or consumption, then this proviso shall not exempt said article from the operation of any of the other provisions of this Act.

Sec. 3. That the Secretary of the Treasury, the Secretary of Agriculture, and the Secretary of Commerce and Labor shall make uniform rules and regulations for carrying out the provisions of this Act, including the collection and examination of specimens of foods and drugs manufactured or offered for sale in the District of Columbia, or in any Territory of the United States, or which shall be offered for sale in unbroken packages in any State other than that in which they shall have been respectively manufactured or produced, or which shall be received from any foreign country, or intended for shipment to any foreign country, or which may be submitted for examination by the chief health, food, or drug officer of any State, Territory, or the District of Columbia, or at any domestic or foreign port through which such product is offered for interstate commerce, or for export or import between the United States and any foreign port or country.

Sec. 4. That the examinations of specimens of foods and drugs shall be made in the Bureau of Chemistry of the Department of Agriculture, or under the direction and supervision of such Bureau, for the purpose of determining from such examinations whether such articles are adulterated or misbranded within the meaning of this Act; and if it shall appear from any such examination that any of such specimens is adulterated or misbranded within the meaning of this Act, the Secretary of Agriculture shall cause notice thereof to be given to the party from whom such sample was obtained. Any party so notified shall be given an opportunity to be heard, under such rules and regulations as may be prescribed as aforesaid, and if it appears that any of the provisions of this Act have been violated by such party, then the Secretary of Agriculture shall at once certify the facts to the proper United States district attorney, with a copy of the results of the analysis or the examination of such article duly authenticated by the analyst or officer making such examination, under the oath of such officer. After judgment of the court, notice shall be given by publication in such manner as may be prescribed by the rules and regulations aforesaid.

Sec. 5. That it shall be the duty of each district attorney to whom the Secretary of Agriculture shall report any violation of this Act, or to whom any health or food or drug officer or agent of any State, Territory, or the District of Columbia shall present satisfactory evidence of any such violation, to cause appropriate proceedings to be commenced and prosecuted in the proper courts of the United States, without delay, for the enforcement of the penalties as in such case herein provided.

Sec. 6. That the term "drug," as used in this Act, shall include all medicines and preparations recognized in the United States Pharmacopoeia or National Formulary for internal or external use, and any substance or mixture of substances intended to be used for the cure, mitigation, or prevention of disease of either man or other animals. The term "food," as used herein, shall include all articles used for food, drink, confectionery, or condiment by man or other animals, whether simple, mixed, or compound.

Sec. 7. That for the purposes of this Act an article shall be deemed to be adulterated:

In case of drugs:

First. If, when a drug is sold under or by a name recognized in the United States Pharmacopoeia or National Formulary, it differs from the standard of strength, quality, or purity, as determined by the test laid down in the United States Pharmacopoeia or National Formulary official at the time of investigation: *Provided*, That no drug defined in the United States Pharmacopoeia or National Formulary shall be deemed to be adulterated under this provision if the standard of strength, quality, or purity be plainly stated upon the bottle, box, or other container thereof although the standard may differ from that determined by the test laid down in the United States Pharmacopoeia or National Formulary.

Second. If its strength or purity fall below the professed standard or quality under which it is sold.

In the case of confectionery:

If it contain terra alba, barytes, talc, chrome yellow, or other mineral substance or poisonous color or flavor, or other ingredient deleterious or detrimental to health, or any vinous, malt or spirituous liquor or compound or narcotic drug. In the case of food:

First. If any substance has been mixed and packed with it so as to reduce or lower or injuriously affect its quality or strength.

Second. If any substance has been substituted wholly or in part for the article.

Third. If any valuable constituent of the article has been wholly or in part abstracted.

Fourth. If it be mixed, colored, powdered, coated, or stained in a manner whereby damage or inferiority is concealed.

Fifth. If it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health: *Provided*, That when in the preparation of food products for shipment they are preserved by any external application applied in such manner that the preservative is necessarily removed mechanically, or by maceration in water, or otherwise, and directions for the removal of said preservative shall be printed on the covering or the package, the provisions of this Act shall be construed as applying only when said products are ready for consumption.

Sixth. If it consists in whole or in part of a filthy, decomposed, or putrid animal or vegetable substance, or any portion of an animal unfit for food, whether manufactured or not, or if it is the product of a diseased animal, or one that has died otherwise than by slaughter.

Sec. 8. That the term, "misbranded," as used herein, shall apply to all drugs, or articles of food, or articles which enter into the composition of food, the package or label of which shall bear any statement, design, or device regarding such article, or the ingredients or substances contained therein which shall be false or misleading in any particular, and to any food or drug product which is falsely branded as to the State, Territory, or country in which it is manufactured or produced.

That for the purposes of this Act an article shall also be deemed to be misbranded:

In case of drugs:

First. If it be an imitation of or offered for sale under the name of another article.

Second. If the contents of the package as originally put up shall have been removed, in whole or in part, and other contents shall have been placed in such package, or if the package fail to bear a statement on the label of the quantity or proportion of any alcohol, morphine, opium, cocaine, heroin, alpha or beta eucaine, chloroform, cannabis indica, chloral hydrate, or acetanilide, or any derivative or preparation of any such substances contained therein.

In the case of food:

First. If it be an imitation of or offered for sale under the distinctive name of another article.

Second. If it be labeled or branded so as to deceive or mislead the purchaser, or purport to be a foreign product when not so, or if the contents of the package as originally put up shall have been removed in whole or in part and other contents shall have been placed in such package, or if it fail to bear a statement on the label of the quantity or proportion of any morphine, opium, cocaine, heroin, alpha or beta eucaine, chloroform, cannabis indica, chloral hydrate, or acetanilide, or any derivative or preparation of any such substances contained therein.

Third. If in package form, and the contents are stated in terms of weight or measure, they are not plainly and correctly stated on the outside of the package.

Fourth. If the package containing it or its label shall bear any statement, design, or device regarding the ingredients or the substances contained therein, which statement, design, or device shall be false or misleading in any particular: *Provided*, That an article of food which does not contain any added poisonous or deleterious ingredients shall not be deemed to be adulterated or misbranded in the following cases:

First. In the case of mixtures or compounds which may be now or from time to time hereafter known as articles of food, under their own distinctive names, and not an imitation of or offered for sale under the distinctive name of another article, if the name be accompanied on the same label or brand with a statement of the place where said article has been manufactured or produced.

Second. In the case of articles labeled, branded, or tagged so as to plainly indicate that they are compounds, imitations, or blends, and the word "compound," "imitation," or "blend," as the case may be, is plainly stated on the package in which it is offered for sale: Provided, That the term blend as used herein shall be construed to mean a mixture of like substances, not excluding harmless coloring or flavoring ingredients used for the purpose of coloring and flavoring only: And provided further, That nothing in this Act shall be construed as requiring or compelling proprietors or manufacturers of proprietary foods which contain no unwholesome added ingredient to disclose their trade formulas, except in so far as the provisions of this Act may require to secure freedom from adulteration or misbranding.

Sec. 9. That no dealer shall be prosecuted under the provisions of this Act when he can establish a guaranty signed by the wholesaler, jobber, manufacturer, or other party residing in the United States, from whom he purchases such articles, to the effect that the same is not adulterated or misbranded within the meaning of this Act, designating it. Said guaranty, to afford protection, shall contain the name and address of the party or parties making the sale of such articles to such dealer, and in such case said party or parties shall be amenable to the prosecutions, fines, and other penalties which would attach, in due course, to the dealer under the provisions of this Act.

Sec. 10. That any article of food, drug, or liquor that is adulterated or misbranded within the meaning of this Act, and is being transported from one State, Territory, District, or insular possession to another for sale, or, having been transported, remains unloaded, unsold, or in original unbroken packages, or if it be sold or offered for sale in the District of Columbia or the Territories, or insular possessions of the United States, or if it be imported from a foreign country for sale, or if it is intended for export to a foreign country, shall be liable to be proceeded against in any district court of the United States within the district where the same is found, and seized for confiscation by a process of libel for condemnation. And if such article is condemned as being adulterated or misbranded, or of a poisonous or deleterious character, within the meaning of this Act, the same shall be disposed of by destruction or sale, as the said court may direct, and the proceeds thereof, if sold, less the legal costs and charges, shall be paid into the Treasury of the United States, but such goods shall not be sold in any jurisdiction contrary to the provisions of this Act or the laws of that jurisdiction: Provided, however, That upon the payment of the costs of such libel proceedings and the execution and delivery of a good and sufficient bond to the effect that such articles shall not be sold or otherwise disposed of contrary to the provisions of this Act, or the laws of any State, Territory, District, or insular possession, the court may by order direct that such articles be delivered to the owner thereof. The proceedings of such libel cases shall conform, as near as may be, to the proceedings in admiralty, except that either party may demand trial by jury of any issue of fact joined in any such case, and all such proceedings shall be at the suit of and in the name of the United States.

Sec. 11. The Secretary of the Treasury shall deliver to the Secretary of Agriculture, upon his request from time to time, samples of foods and drugs which are being imported into the United States or offered for import, giving notice thereof to the owner or consignee, who may appear before the Secretary of Agriculture, and have the right to introduce testimony, and if it appear from the examination of such samples that any article of food or drug offered to be imported into the United States is adulterated or misbranded within the meaning of this Act, or is otherwise dangerous to the health of the people of the United States, or is of a kind forbidden entry into, or forbidden to be sold or restricted in sale in the country in which it is made or from which

it is exported, or is otherwise falsely labeled in any respect, the said article shall be refused admission, and the Secretary of the Treasury shall refuse delivery to the consignee and shall cause the destruction of any goods refused delivery which shall not be exported by the consignee within three months from the date of notice of such refusal under such regulations as the Secretary of the Treasury may prescribe: Provided, That the Secretary of the Treasury may deliver to the consignee such goods pending examination and decision in the matter on execution of a penal bond for the amount of the full invoice value of such goods, together with the duty thereon, and on refusal to return such goods for any cause to the custody of the Secretary of the Treasury, when demanded, for the purpose of excluding them from the country, or for any other purpose, said consignee shall forfeit the full amount of the bond: And provided further, That all charges for storage, cartage, and labor on goods which are refused admission or delivery shall be paid by the owner or consignee, and in default of such payment shall constitute a lien against any future importation made by such owner or consignee.

Sec. 12. That the term "Territory" as used in this Act shall include the insular possessions of the United States. The word "person" as used in this Act shall be construed to import both the plural and the singular, as the case demands, and shall include corporations, companies, societies and associations. When construing and enforcing the provisions of this Act, the act, omission, or failure of any officer, agent, or other person acting for or employed by any corporation, company, society, or association, within the scope of his employment or office, shall in every case be also deemed to be the act, omission, or failure of such corporation, company, society, or association as well as that of the person.

Sec. 13. That this Act shall be in force and effect from and after the first day of January, nineteen hundred and seven.

Source:

Statutes at Large, vol. 34, pp. 768-772.

8. STANDARD OIL COMPANY OF NEW JERSEY ET AL. V. UNITED STATES, 1911

U.S. Supreme Court decision issued on May 15, 1911, upholding the dissolution of the Standard Oil Company, a powerful monopolistic trust, on the grounds that it represented an "unreasonable" restraint of trade under the Sherman Antitrust Act. The decision resulted from a lawsuit initiated by the federal government in 1906, charging Standard Oil and others with conspiring to restrain trade and commerce in petroleum and related products. The Supreme Court, in upholding a 1909 U.S. circuit court ruling that the company had to divest itself of numerous subsidiaries, declared that the Sherman Antitrust Act should be applied according to the "rule of reason."

As Justice White points out, the case file was exceptionally voluminous and the allegations unusually complicated. However, its prosecution was then, and continues to be, a landmark event. The excerpts here include Justice White's use of history to come to his decision.

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Chief Justice White delivered the opinion of the court:

The Standard Oil Company of New Jersey and thirty-three other corporations, John D. Rockefeller, William Rockefeller, and five other individual defendants, prosecute this appeal to reverse a decree of the court below. Such decree was entered upon a bill filed by the United States under authority of Section 4 of the act of July 2, 1890 known as the anti-trust act. . . . The record is inordinately voluminous, consisting of twentythree volumes of printed matter, aggregating about 12,000 pages, containing a vast amount of confusing and conflicting testimony relating to innumerable, complex, and varied business transactions, extending over a period of nearly forty years. In an effort to pave the way to reach the subjects which we are called upon to consider, we propose at the outset, following the order of the bill, to give the merest possible outline of its contents, to summarize the answer, to indicate the course of the trial, and point out briefly the decision below rendered.

The bill and exhibits, covering 170 pages of the printed record, was filed on November 15, 1906. Corporations known as Standard Oil Company of New Jersey, Standard Oil Company of California, Standard Oil Company of Indiana, Standard Oil Company of Iowa, Standard Oil Company of Kansas, Standard Oil Company of Kentucky, Standard Oil Company of Nebraska, Standard Oil Company of New York, Standard Oil Company of Ohio, and sixty-two other corporations and partnerships, as also seven individuals, were named as defendants. The bill was divided into thirty numbered sections, and sought relief upon the theory that the various defendants were engaged in conspiring "to restrain the trade and commerce in petroleum, commonly called 'crude oil,' in refined oil, and in the other products of petroleum, among the several states and territories of the United States and the District of Columbia and with foreign nations, and to monopolize the said commerce." The conspiracy was alleged to have been formed in or about the year 1870 by three of the individual defendants, viz.: John D. Rockefeller, William Rockefeller, and Henry M. Flagler. The detailed averments concerning the alleged conspiracy were arranged with reference to three periods, the first from 1870 to 1882, the second from 1882 to 1899, and the third from 1899 to the time of the filing of the bill.

[Discussions of the bill and jurisdiction are omitted]

We are thus brought face to face with the merits of the controversy.

Both as to the law and as to the facts, the opposing contentions pressed in the argument are numerous, and in all their aspects are so irreconcilable that it is difficult to reduce them to some fundamental generalization, which, by being disposed of, would decide them all. For instance, as to the law. While both sides agree that the determination of the controversy rests upon the correct construction and application of the 1st and 2d sections of the anti-trust act, yet the views as to the meaning of the act are as wide apart as the poles, since there is no real point of agreement on any view of the act. And this also is the case as to the scope and effect of authorities relied upon, even although in some instances one and the same authority is asserted to be controlling.

So also is it as to the facts. Thus, on the one hand, with relentless pertinacity and minuteness of analysis, it is insisted that the facts establish that the assailed combination took its birth in a purpose to unlawfully acquire wealth by oppressing the public and destroying the just rights of others, and that its entire career exemplifies an inexorable carrying out of such wrongful intents, since, it is asserted, the pathway of the combination from the beginning to the time of the filing of the bill is marked with constant proofs of wrong inflicted upon the public, and is strewn with the wrecks resulting from crushing out, without regard to law, the individual rights of others. Indeed, so conclusive, it is urged, is the proof on these subjects, that it is asserted that the existence of the principal corporate defendant-the Standard Oil Company of New Jersey-with the vast accumulation of property which it owns or controls, because of its infinite potency for harm and the dangerous example which its continued existence affords, is an open and enduring menace to all freedom of trade, and is a byword and reproach to modern economic methods. On the other hand, in a powerful analysis of the facts, it is insisted that they demonstrate that the origin and development of the vast business which the defendants control was but the result of lawful competitive methods, guided by economic genius of the highest order, sustained by courage, by a keen insight into commercial situations, resulting in the

acquisition of great wealth, but at the same time serving to stimulate and increase production, to widely extend the distribution of the products of petroleum at a cost largely below that which would have otherwise prevailed, thus proving to be at one and the same time a benefaction to the general public as well as of enormous advantage to individuals. It is not denied that in the enormous volume of proof contained in the record in the period of almost a lifetime, to which that proof is addressed, there may be found acts of wrongdoing, but the insistence is that they were rather the exception than the rule, and in most cases were either the result of too great individual zeal in the keen rivalries of business, or of the methods and habits of dealing which, even if wrong, were commonly practised at the time. And to discover and state the truth concerning these contentions both arguments call for the analysis and weighing, as we have said at the outset, of a jungle of conflicting testimony covering a period of forty years-a duty difficult to rightly perform, and, even if satisfactorily accomplished, almost impossible to state with any reasonable regard to brevity.

Duly appreciating the situation just stated, it is certain that only one point of concord between the parties is discernible, which is, that the controversy in every aspect is controlled by a correct conception of the meaning of the 1st and 2d sections of the anti-trust act. We shall therefor-departing from what otherwise would be the natural order of analysis-make this one point of harmony the initial basis of our examination of the contentions. . . . When we have done this, we shall then approach the facts. . . .

First. The text of the act and its meaning.

We quote the text of the 1st and 2d sections of the act, as follows:

"Section 1. Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several states or with foreign nations, is hereby declared to be illegal. Every person how shall make any such contract, or engaged in any such combination or conspiracy, shall be deemed guilty of a misdemeanor, and, on conviction thereof, shall be punished by fine not exceeding \$5,000, or by imprisonment not exceeding one year, or by both said punishments, in the discretion of the court.

"Sec. 2. Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons to monopolize, any part of the trade or commerce among the several states, or with foreign nations, shall be deemed guilty of a misdemeanor, and, on conviction thereof, shall be punished by fine not exceeding \$5,000, or by imprisonment not exceeding one year, or by both said punishments, in the discretion of the court." [26 Stat. at L. 209, chap. 647, U.S. Comp. Stat. 1901, p. 3200.]

The debates show that doubt as to whether there was a common law of the United States which governed the subject in the absence of legislation was among the influences leading to the passage of the act. They conclusively show, however, that the main cause which led to the legislation was the thought that it was required by the economic condition of the times; that is, the vast accumulation of wealth in the hands of corporations and individuals, the enormous development of corporate organization, the facility for combination which such organization afforded, the fact that the facility was being used, and that combinations known as trusts were being multiplied, and the widespread impression that their power had been and would be exerted to oppress individual and injure the public generally. Although debates may not be used as a mean for interpreting a statute, that rule, in the nature of things, is not violated by resorting to debates as a means of ascertaining the environment at the time of the enactment of a particular law; that is, the history of the period when it was adopted.

* * *

The evils which led to the public outcry against monopolies [in England] and to the final denial of the power to make them may be thus summarily stated: (1) The power which the monopoly gave to the one who enjoyed it, to fix the price and thereby injure the public; (2) The power which it engendered of enabling a limitation on production; and (3) The danger of deterioration in quality of the monopolized article which it was deemed was the inevitable resultant of the monopolistic control over its production and sale....

* * *

And by operation of the mental process which led to considering as a monopoly acts which, although they did not constitute a monopoly, were thought to produce some of its baneful effects, so also because of the impediment or burden to the due course of trade which they produced, such acts came to be referred to as in restraint of trade....

Generalizing these considerations, the situation is this: 1. That by the common law, monopolies were unlawful because of their restriction upon individual freedom of contract and their injury to the public. 2. That as to necessaries of life, the freedom of the individual to deal was restricted where the nature and character of the dealing was such as to engender the presumption of intent to bring about at least one of the injuries which it was deemed would result from monopoly-that is, an undue enhancement of price. 3. That to protect the freedom of contract of the individual, not only in his own interest, but principally in the interest of the common weal, a contract of an individual by which he put an unreasonable restraint upon himself as to carrying on his trade or business was void. And that at common law the evils consequent upon. . . those things to be treated as coming within monopoly and sometimes to be called monopoly, and the same considerations caused monopoly, because of its operation and effect, to be brought within and spoken of generally as impeding the due course of, or being in restraint of, trade.

* * *

In this country also the acts from which it was deemed there resulted a part, if not all, of the

injurious consequences ascribed to monopoly, came to be referred to as a monopoly itself. In other words, here as had been the case in England, practical common sense caused attention to be concentrated not upon the theoretically correct name to be given to the condition or acts which gave rise to a harmful result, but to the result itself and to the remedying of the evils which it produced. . . .

It is also true that while the principles concerning contracts in restraint of trade, that is, voluntary restraint put by a person on his right to pursue his calling, hence only operating subjectively, came generally to be recognized in accordance with the English rule, it came moreover to pass that contracts or acts which it was considered had a monopolistic tendency, especially those which were thought to unduly diminish competition and hence to enhance prices—in other words, to monopolize—came also in a generic sense to be spoken of and treated as they had been in England, as restricting the due course of trade, and therefore as being in restraint of trade.

* * *

In view of the common law and the law in this country as to restraint of trade, which we have reviewed, and the illuminating effect which that history must have under the rule to which we have referred, we think it results:

a. That the context manifests that the statute was drawn in the light of the existing practical conception of the law of restraint of trade....

b. That in view of the many new forms of contracts and combinations which were being evolved from existing economic conditions, it was deemed essential by an all-embracing enumeration to make sure that no form of contract or combination by which an undue restraint of interstate or foreign commerce was brought about could save such restraint from condemnation.

c. . . . Thus not specifying, but indubitably contemplating and requiring a standard, it follows that it was intended that the standard of reason which had been applied at the common law and in this country in dealing with subjects of the character embraced by the statute was intended to be the measure used for the purpose of determining whether, in a given case, a particular act had or had not brought about the wrong against which the statute provided.

And a consideration of the text of the 2d section serves to establish that it was intended to supplement the 1st, and to make sure that by no possible guise could the public policy embodied in the 1st section be frustrated or evaded. . . . By reference to the terms of Section 8 it is certain that the word "person" clearly implies a corporation as well as an individual.

* * *

Undoubtedly, the words "to monopolize" and "monopolize," as used in the section, reach every act bringing about the prohibited results....

Second. The contentions of the parties as to the meaning of the statute, and the decisions of this court relied upon concerning those contentions. [Omitted]

Third. The facts and the application of the statute to them.

Beyond dispute the proofs establish substantially as alleged in the bill the following facts:

1. The creation of the Standard Oil Company of Ohio.

2. The organization of the Standard Oil Trust of 1882, and also a previous one of 1879, not referred to in the bill, and the proceedings in the supreme court of Ohio, culminating in a decree based upon the finding that the company was unlawfully a party to that trust; the transfer by the trustees of stocks in certain of the companies; the contempt proceedings; and, finally, the increase of the capital of the Standard Oil Company of New Jersey and the acquisition by that company of the shares of the stock of the other corporations in exchange for its certificates.

The vast amount of property and the possibilities of far-reaching control which resulted from the facts last stated are shown by the statement which we have previously annexed concerning the parties to the trust agreement of

1882, and the corporations whose stock was held by the trustees under the trust, and which came therefore to be held by the New Jersey corporation. But these statements do not with accuracy convey an appreciation of the situation as it existed at the time of the entry of the decree below, since, during the more than ten years which elapsed between the acquiring by the New Jersey corporation of the stock and other property which was formerly held by the trustees under the trust agreement, the situation, of course, had somewhat changed-a change which, when analyzed in the light of the proof, we think establishes that the result of enlarging the capital stock of the New Jersey company and giving it the vast power to which we have referred produced its normal consequences; that is, it gave to the corporation, despite enormous dividends and despite the dropping out of certain corporations enumerated in the decree of the court below, an enlarged and more perfect sway and control over the trade and commerce in petroleum and its products. . .

Giving to the facts just stated the weight which it was deemed they were entitled to, in the light afforded by the proof of other cognate facts and circumstances, the court below held that the acts and dealings established by the proof operated to destroy the "potentiality of competition" which otherwise would have existed to such an extent as to cause the transfer of stock which were made to the New Jersey Corporation and the control which resulted over the many and various subsidiary corporations to be a combination or conspiracy in restraint of trade, in violation of the 1st section of the act, but also to be an attempt to monopolize and monopolization bringing about a perennial violation of the 2d section.

We see no cause to doubt the correctness of these conclusions, considering the subject from every aspect; that is, both in view of the facts established by the record and the necessary operation and effect of the law as we have construed it upon the inferences deducible from the facts, for the following reasons:

a. Because the unification of power and control over petroleum and its products which was the inevitable result of the combining in the New Jersey corporation by the increase of its stock and the transfer to it of the stocks of so many other corporations, aggregating so vast a capital, gives rise, in and of itself, in the absence of countervailing circumstances, to say the least, to the prima facie presumption of intent and purpose to maintain the dominancy over the oil industry, not as a result of normal methods of industrial development, but by new means of combination which were resorted to in order that greater power might be added than would otherwise have arisen had normal methods been followed, the whole with the purpose of excluding others from the trade, and thus centralizing in the combination of a perpetual control of the movements of petroleum and its products in the channels of interstate commerce.

b. Because the prima facie presumption of intent to restrain trade, to monopolize and to bring about monopolization, resulting from the act of expanding the stock of the New Jersey corporation and vesting it with such vast control of the oil industry, is made conclusive by considering (1) the conduct of the persons or corporations who were mainly instrumental in bringing about the extension of power in the New Jersey corporation before the consummation of the result and prior to the formation of that trust agreements of 1879 and 1882; (2) by considering the proof as to what was done under those agreements and the acts which immediately preceded the vesting of power in the New Jersey corporation, as well as by weighing the modes in which the power vested in that corporation has been exerted and the results which have arisen from it.

> * * *

Fourth, The remedy to be administered. *

* *

As penalties which are not authorized by law may not be inflicted by judicial authority, it follows that to meet the situation with which we are confronted the application of remedies two-fold in character becomes essential: 1st. To forbid the doing in the future of acts like those which we have found to have been done in the past which would be violative of the statute. 2d. The exertion of such measure of relief as will effectually dissolve the combination found to exist in violation of the statute, and thus neutralize the extension and continually operating force which the possession of the power unlawfully obtained has brought and will continue to bring about.

In applying remedies for this purpose, however, the fact must not be overlooked that injury to the public by the prevention of an undue restraint on, or the monopolization of, trade or commerce, is the foundation upon which the prohibitions of the statute rest, and moreover that one of the fundamental purposes of the statute is to protect, not to destroy, rights of property.

Let us, then, as a means of accurately determining what relief we are to afford, first come to consider what relief was afforded by the court below, in order to fix how far it is necessary to take from or add to that relief, to the end that the prohibitions of the statute may have complete and operative force.

... Section 5 of the decree forbade the New Jersey corporation from in any form or manner exercising any ownership or exerting any power directly or indirectly in virtue of its apparent title to the stocks of the subsidiary corporations, and prohibited those subsidiary corporations from paying any dividends to the New Jersey corporations, or doing any act which would recognize further power in that company, except to the extent that it was necessary to enable that company to transfer the stock. So far as the owners of the stock of the subsidiary corporations and the corporations themselves were concerned after the stock had been transferred, Section 6 of the decree enjoined them from in any way conspiring or combining to violate the act, or to monopolize or attempt to monopolize in virtue of their ownership of the stock transferred

to them, and prohibited all agreements between the subsidiary corporations or other stockholders in the future, tending to produce or bring about further violations of the act.

By Section 7, pending the accomplishment of the dissolution of the combination by the transfer of stock, and until it was consummated, the defendants . . . were enjoined from engaging in or carrying on interstate commerce. . . . So far as the decree held that the ownership of the stock of the New Jersey corporation constituted a combination in violation of the 1st section and an attempt to create a monopoly or to monopolize under the 2d section, and commanded the dissolution of the combination, the decree was clearly appropriate. And this also is true of Section 5 of the decree, which restrained both the New Jersey corporation and the subsidiary corporations from doing anything which would recognize or give effect to further ownership in the New Jersey corporation of the stocks which were ordered to be retransferred.

* * *

Our conclusion is that the decree below was right and should be affirmed, except as to the minor matters concerning which we have indicated the decree should be modified. Our order will therefore be one of affirmance, with directions, however, to modify the decree in accordance with this opinion. The court below to retain jurisdiction to the extent necessary to compel compliance in every respect with its decree.

And it is so ordered.

Source:

Supreme Court Reporter, vol. 31, pp. 502-534.

9. CLAYTON ANTITRUST ACT, 1914

Federal legislation enacted on October 15, 1914, that supplemented the Sherman Antitrust Act and outlawed specific practices that would "substantially lessen competition or tend to create a monopoly in any line of commerce." It prohibited exclusive sales contracts, discrimination in prices among different producers, interlocking directorates in large corporations engaged in the same business, rebates, and the acquisition of stock by one company in another. Labor unions and agricultural cooperatives were exempted from the act on the grounds that "the labor of a human being is not a commodity or article of commerce." As a result, the Clayton Act sought to overcome impediments to collective action by labor, such as the 1908 U.S. Supreme Court decision Loewe v. Lawlor (208 U.S. 274). In this case, the first applying the Sherman Antitrust Act against organized labor, the Court held that a union boycott constituted a conspiracy in restraint of trade.

An Act

An Act To supplement existing laws against unlawful restraints and monopolies, and for other purposes.

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Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That "antitrust laws," as used herein, includes the Act entitled "An Act to protect trade and commerce against unlawful restraints and monopolies," approved July second, eighteen hundred and ninety; sections seventy-three to seventy-seven, inclusive, of an Act entitled "An Act to reduce taxation, to provide revenue for the Government, and for other purposes," of August twenty-seventh, eighteen hundred and ninety-four; and Act entitled "An Act to amend sections seventy-three and seventy-six of the Act of August twenty-seventh, eighteen hundred and ninety-four, entitled 'An Act to reduce taxation, to provide revenue for the Government, and for other purposes," approved February twelfth, nineteen hundred and thirteen, and also this Act.

"Commerce," as used herein, means trade or commerce among the several States and with foreign nations, or between the District of Columbia or any Territory of the United States and any State, Territory, or foreign nation, or between any insular possessions or other places under the jurisdiction of the United States, or between any such possession or place and any State or Territory of the United States or the District of Columbia or any foreign nation, or within the District of Columbia or any Territory or any insular possession or other place under the jurisdiction of the United States: *Provided*, That nothing in this Act contained shall apply to the Philippine Islands.

The word "person" or "persons" wherever used in this Act shall be deemed to include corporations and associations existing under or authorized by the laws of either the United States, the laws of any of the Territories, the laws of any State, or the laws of any foreign country.

Sec. 2. That it shall be unlawful for any person engaged in commerce, in the course of such commerce, either directly or indirectly to discriminate in price between different purchasers of commodities, which commodities are sold for use, consumption, or resale within the United States or any Territory thereof or the District of Columbia or any insular possession or other place under the jurisdiction of the United States, where the effect of such discrimination may be to substantially lessen competition or tend to create a monopoly in any line of commerce: Provided, That nothing herein contained shall prevent discrimination in price between purchasers of commodities on account of differences in the grade, quality, or quantity of the commodity sold, or that makes only due allowance for difference in the cost of selling or transportation, or discrimination in price in the same or different communities made in good faith to meet competition: And provided further, That nothing herein contained shall prevent persons engaged in selling goods, wares, or merchandise in commerce from selecting their own customers in bona fide transactions and not in restraint of trade.

Sec. 3. That it shall be unlawful for any person engaged in commerce, in the course of such commerce, to lease or make a sale or contract for sale of goods, wares, merchandise, machinery, supplies or other commodities, whether patented or unpatented, for use, consumption or resale within the United States or and Territory thereof or the District of Columbia or any insular possession or other place under the jurisdiction of the United States, or fix a price charged therefor, or discount from, or rebate upon, such price, or the condition, agreement or understanding that the lessee or purchaser thereof shall not use or deal in the goods wares, merchandise, machinery, supplies or other commodities of a competitor or competitors of the lessor or seller, where the effect of such lease, sale, or contract for sale or such condition, agreement or understanding may be to substantially lessen competition or tend to create a monopoly in any line of commerce.

Sec. 4. That any person who shall be injured in his business or property by reason of anything forbidden in the antitrust laws may sue therefor in any district court of the United States in the district in which the defendant resides or is found or has an agent, without respect to the amount in controversy, and shall recover threefold the damages by him sustained, and the cost of suit, including a reasonable attorney's fee.

Sec. 5. That a final judgment or decree hereafter rendered in any criminal prosecution or in any suit or proceeding in equity brought by or on behalf of the United States under the antitrust laws to the effect that a defendant has violated said laws shall be prima facie evidence against such defendant in any suit or proceeding brought by any other party against such defendant under said laws as to all matters respecting which said judgment or decree would be an estoppel as between the parties thereto: Provided, This section shall not apply to consent judgments or decrees entered before any testimony has been taken: Provided further, This section shall not apply to consent judgments or decrees rendered in criminal proceedings or suits in equity, now pending, in which the taking of testimony has been commenced but has not been concluded, provided such judgments or decrees are rendered before any further testimony is taken.

Whenever any suit or proceeding in equity or criminal prosecution is instituted by the United States to prevent, restrain or punish violations of any of the antitrust laws, to running of the statute of limitations in respect of each and every private right of action arising under said laws and based in whole or in part on any matter complained of in said suit or proceeding shall be suspended during the pendency thereof.

Sec. 6. That the labor of a human being is not a commodity or article of commerce. Nothing contained in the antitrust laws shall be construed to forbid the existence and operation of labor, agricultural, or horticultural organizations, instituted for the purposes of mutual help, and not having capital stock of conducted for profit, or to forbid or restrain individual members of such organizations from lawfully carrying out the legitimate objects thereof; nor shall such organizations, or the members thereof, be held or construed to be illegal combinations or conspiracies in restraint of trade, under the antitrust law.

Sec. 7. That no corporation engaged in commerce shall acquire, directly or indirectly, the whole or any part of the stock or other share capital of another corporation engaged also in commerce, where the effect of such acquisition may be to substantially lessen competition between the corporation whose stock is so acquired and the corporation making the acquisition, or to restrain such commerce in any section or community, or tend to create a monopoly of any line of commerce.

No corporation shall acquire, directly or indirectly, the whole or any part of the stock or other share capital of two or more corporations engaged in commerce where the effect of such acquisition, or the use of such stock by the voting or granting of proxies or otherwise, may be to substantially lessen competition between such corporations, or any of them, whose stock or other share capital is so acquired, or to restrain such commerce in any section or community, or tend to create a monopoly of any line of commerce.

This section shall not apply to corporations purchasing such stock solely for investment and

not using the same by voting or otherwise to bring about, or in attempting to bring about, the substantial lessening of competition. Nor shall anything contained in this section prevent a corporation engaged in commerce from causing the formation of subsidiary corporations for the actual carrying on of their immediate lawful business, or the natural and legitimate branches or extensions thereof, or from owning and holding all or a part of the stock of such subsidiary corporations, when the effect of such formation is not to substantially lessen competition.

Nor shall anything herein contained be construed to prohibit any common carrier subject to the laws to regulate commerce from aiding in the construction of branches or short lines so located as to become feeders to the main line of the company so aiding in such construction or from acquiring or owning all or any part of the stock of such branch lines, nor to prevent any such common carrier from acquiring and owning all or any part of the stock of a branch or short line constructed by an independent company where there is no substantial competition between the company owning the branch line so constructed and the company owning the main line acquiring the property or an interest therein, nor to prevent such common carrier from extending any of its lines through the medium of the acquisition of stock or otherwise of any other such common carrier where there is no substantial competition between the company extending its lines and the company whose stock, property, or an interest therein is so acquired.

Nothing contained in this section shall be held to affect or impair any right heretofore legally acquired: *Provided*, That nothing in this section shall be held or construed to authorize or make lawful anything heretofore prohibited or made illegal by the antitrust laws, nor to exempt any person from the penal provisions thereof or the civil remedies therein provided.

Sec. 8. That from and after two years from the date of the approval of this Act no person shall at the same time be a director or other offi-

cer or employee of more than one bank, banking association or trust company, organized or operating under the laws of the United States, either of which has deposits, capital, surplus, and undivided profits aggregating more than \$5,000,000; and no private banker or person who is a director in any bank or trust company, organized and operating under the laws of a State, having deposits, capital, surplus, and undivided profits aggregating more than \$5,000,000 shall be eligible to be a director in any bank or banking association organized or operating under the laws of the United States. The eligibility of a director, officer, or employee under the foregoing provisions shall be determined by the average amount of deposits, capital, surplus, and undivided profits as shown in the official statements of such bank, banking association, or trust company filed provided by law during the fiscal year next preceding the date set for the annual election of directors, and when a director, officer, or employee has been elected or selected in accordance with the provisions of this Act it shall be lawful for him to continue as such for one year thereafter under said election or employment.

No bank, banking association or trust company, organized or operating under the laws of the United States, in any city or incorporated town or village of more than two hundred thousand inhabitants, as shown by the last preceding decennial census of the United States, shall have as a director or other officer or employee any private banker or any director or other officer or employee of any other bank, banking association or trust company located in the same place: Provided, That nothing in this section shall apply to mutual savings banks not having a capital stock represented by shares: Provided further, That a director or other officer or employee of such bank, banking association or trust company may be a director or other officer or employee of not more than one other bank or trust company organized under the laws of the United States or any State where the entire capital stock of one is owned by stockholders in the other: And provided *further,* That nothing contained in this section shall forbid a director of class A of a Federal reserve bank, as defined in the Federal Reserve Act, from being an officer or director or both an officer and director in one member bank.

That from and after two years from the date of approval of this Act no person at the same time shall be a director in any two or more corporations, any one of which has capital, surplus, and undivided profits aggregating more than \$1,000,000, engaged in whole or in part in commerce, other than banks, banking associations, trust companies and common carriers subject to the Act to regulate commerce, approved February fourth, eighteen hundred and eighty-seven, if such corporations are or shall have been theretofore, by virtue of their business and location of operation, competitors, so that the elimination of competition by agreement between them would constitute a violation of any of the provisions of any of the antitrust laws. The eligibility of a director under the foregoing provision shall be determined by the aggregate amount of capital, surplus, and undivided profits, exclusive of dividends declared but not paid to stockholders, at the end of the fiscal year of said corporation next preceding the election of directors, and when a director has been elected in accordance with the provisions of this Act it shall be lawful for him to continue as such for one year thereafter.

When any person elected or chosen as a director or officer or selected as an employee of any bank or other corporation subject to the provisions of this Act is eligible at the time of his election or selection to act for such bank or other corporation in such capacity his eligibility to act in such capacity shall not be affected and he shall not become or be deemed amenable to any of the provisions hereof by reason of any change in the affairs of such bank or other corporation from whatsoever cause, whether specifically excepted by any of the provisions hereof or not, until the expiration of one year from the date of his election or employment. Sec. 9. Every president, director, officer or manager of any firm, association or corporation engaged in commerce as a common carrier, who embezzles, steals, abstracts or willfully misapplies, or willfully permits to be misapplied, any of the moneys, funds, credits, securities, property or assets of such firm, association or corporation, arising or accruing from, or used in, such commerce, in whole or in part, or willfully or knowingly converts the same to his own use or to the use of another, shall be deemed guilty of a felony and upon conviction shall be fined not less than \$500 or confined in the penitentiary not less than one year nor more than ten years, or both, in the discretion of the court.

Prosecutions hereunder may be in the district court of the United States for the district wherein the offense may have been committed.

That nothing in this section shall be held to take away or impair the jurisdiction of the courts of the several States under the laws thereof; and a judgment of conviction or acquittal on the merits under the laws of any State shall be a bar to any prosecution hereunder for the same act or acts.

Sec. 10. That after two years from the approval of this Act no common carrier engaged in commerce shall have any dealings in securities, supplies or other articles of commerce, or shall make or have any contracts for construction or maintenance of any kind, to the amount of more than \$50,000, in the aggregate, in any one year, with another corporation, firm, partnership or association when the said common carrier shall have upon its board of directors or as its president, manager or as its purchasing or selling officer, or agent in the particular transaction, any person who is at the same time a director, manager, or purchasing or selling officer of, or who has any substantial interest in, such other corporation, firm, partnership or association, unless and except such purchases shall be made from, or such dealings shall be with, the bidder whose bid is the most favorable to such common carrier, to be ascertained by competitive bidding under regulations to be prescribed by rule or otherwise by the Interstate Commerce Commission. No bid shall be received unless the name and address of the bidder or the names and addresses of the officers, directors and general managers thereof, if the bidder be a corporation, or of the members, if it be a partnership or firm, be given with the bid.

Any person who shall, directly or indirectly, do or attempt to do anything to prevent anyone from bidding or shall do any act to prevent free and fair competition among the bidders or those desiring to bid shall be punished as prescribed in this section in the case of an officer or director.

Every such common carrier having any such transactions or making any such purchases shall within thirty days after making the same file with the Interstate Commerce Commission a full and detailed statement of the transaction showing the manner of the competitive bidding, who were the bidders, and the names and addresses of the directors and officers of the corporations and the members of the firm or partnership bidding; and whenever the said commission shall, after investigation or hearing, have reason to believe that the law has been violated in and about the said purchases or transactions it shall transmit all papers and documents and its own views or findings regarding the transaction to the Attorney General.

If any common carrier shall violate this section it shall be fined not exceeding \$25,000; and every such director, agent, manager or officer thereof who shall have knowingly voted for or directed the act constituting such violation or who shall have aided or abetted in such violation shall be deemed guilty of a misdemeanor and shall be fined not exceeding \$5,000, or confined in jail not exceeding one year, or both, in the discretion of the court.

Sec. 11. That authority to enforce compliance with sections two, three, seven and eight of this Act by the persons respectively subject thereto is hereby vested: in the Interstate Commerce Commission where applicable to common carriers, in the Federal Reserve Board where applicable to banks, banking associations and trust companies, and in the Federal Trade Commission where applicable to all other character of commerce, to be exercised as follows:

Whenever the commission or board vested with jurisdiction thereof shall have reason to believe that any person is violating or has violated any of the provisions of sections two, three, seven and eight of this Act, it shall issue and serve upon such person a complaint stating its charges in that respect, and containing a notice of a hearing upon a day and at a place therein fixed at least thirty days after the service of said compliant. The person so complained of shall have the right to appear at the place and time so fixed and show cause why an order should not be entered by the commission or board requiring such person to cease and desist from the violation of the law so charged in said complaint. Any person may make application, and upon good cause shown may be allowed by the commission or board, to intervene and appear in said proceeding by counsel or in person. The testimony in any such proceeding shall be reduced to writing and filed in the office of the commission or board. If upon such hearing the commission or board, as the case may be, shall be of the opinion that any of the provisions of said section have been or are being violated, it shall make a report in writing in which it shall state its findings as to the facts, and shall issue and cause to be served on such person an order requiring such person to cease and desist from such violations, and divest itself of the stock held or rid itself of the directors chosen contrary to the provisions of sections seven and eight of this Act, if any there be, in the manner and within the time fixed by said order. Until a transcript of the record in such hearing shall have been filed in a circuit court of appeals of the United States, as hereinafter provided, the commission or board may at any time, upon such notice and in such manner as it shall deem proper, modify or set aside, in whole or in part, any report or any order made or issued by it under this section.

If such person fails or neglects to obey such order of the commission or board while the same

is in effect, the commission or board may apply to the circuit court of appeals of the United States, within any circuit where the violation complained of was or is being committed or where such person resides or carries on business, for the enforcement of its order, and shall certify and file with its application a transcript of the entire record in the proceeding, including all the testimony taken and the report and order of the commission or board. Upon such filing of the application and transcript the court shall cause notice thereof to be served upon such person and thereupon shall have jurisdiction of the proceeding and of the question determined therein, and shall have power to make and enter upon the pleadings, testimony, and proceedings set forth in such transcript a decree affirming, modifying, or setting aside the order of the commission or board. The findings of the commission or board as to the facts, if supported by testimony, shall be conclusive. If either party shall apply to the court for leave to adduce additional evidence, and shall show to the satisfaction of the court that such additional evidence is material and that there were reasonable grounds for the failure to adduce such evidence in the proceeding before the commission or board, the court may order such additional evidence to be taken before the commission or board and to be adduced upon the hearing in such manner and upon such terms and conditions as to the court may seem proper. The commission or board may modify its findings as to the facts, or make new findings, by reason of the additional evidence so taken, and it shall file such modified or new findings, which, if supported by testimony, shall be conclusive, and its recommendation, if any, for the modification or setting aside of its original order, with the return of such additional evidence. The judgment and decree of the court shall be final, except that the same shall be subject to review by the Supreme Court upon certiorari as provided in section two hundred and forty of the Judicial Code.

Any party required by such order of the commission or board to cease and desist from a

violation charged may obtain a review of such order in said circuit of appeals by filing in the court a written petition praying that the order of the commission or board be set aside. A copy of such petition shall be forthwith served upon the commission or board, and thereupon the commission or board forthwith shall certify and file in the court a transcript of the record as hereinbefore provided. Upon the filing of the transcript the court shall have the same jurisdiction to affirm, set aside, or modify the order of the commission or board as in the case of an application by the commission or board for the enforcement of its order, and the findings of the commission or board as to the facts, if supported by testimony, shall in like manner be conclusive.

The jurisdiction of the circuit court of appeals of the United States to enforce, set aside, or modify orders of the commission or board shall be exclusive.

Such proceedings in the circuit court of appeals shall be given precedence over other cases pending therein, and shall be in every way expedited. No order of the commission or board or the judgment of the court to enforce the same shall in any wise relieve or absolve any person from any liability under the antitrust Acts.

Complaints, orders, and other processes of the commission or board under this section may be served by anyone duly authorized by the commission or board, either (a) by delivering a copy thereof to the person to be served, or to a member of the partnership to be served, or to the president, secretary, or other executive officer or a director of the corporation to be served; or (b) by leaving a copy thereof at the principal office or place of business of such person; or (c) by registering and mailing a copy thereof addressed to such person at his principal office or place of business. The verified return by the person so serving said complaint, order, or other process setting forth the manner of said service shall be proof of the same, and the return post-office receipt for said complaint, order, or other process registered and mailed as aforesaid shall be proof of the service of the same.

Sec. 12. That any suit, action, or proceeding under the antitrust laws against a corporation may be brought not only in the judicial district whereof it is an inhabitant, but also in any district wherein it may be found or transacts business; and all process in such cases may be served in the district of which it is an inhabitant, or wherever it may be found.

Sec. 13. That in any suit, action, or proceeding brought by or on behalf of the United States subpoenas for witnesses who are required to attend a court of the United States in any judicial district in any case, civil or criminal, arising under the antitrust laws may run into any other district: *Provided*, That in civil cases no writ of subpoena shall issue for witnesses living out of the district in which the court is held at a greater distance than one hundred miles from the place of holding the same without the permission of the trial court being first had upon proper application and cause shown.

Sec. 14. That whenever a corporation shall violate any of the penal provisions of the antitrust laws, such violation shall be deemed to be also that of the individual directors, officers, or agents of such corporation who shall have authorized, ordered, or done any of the acts constituting in whole or in part such violation, and such violation shall be deemed a misdemeanor, and upon conviction therefor of any such director, officer, or agent he shall be punished by a fine of not exceeding \$5,000 or by imprisonment for not exceeding one year, or by both, in the discretion of the court.

Sec. 15. That the several district courts of the United States are hereby invested with jurisdiction to prevent and restrain violations of this Act, and it shall be the duty of the several district attorneys of the United States, in their respective districts, under the direction of the Attorney General, to institute proceedings in equity to prevent and restrain such violations. Such proceedings may be by way of petition setting forth the case and praying that such violation shall be enjoined or otherwise prohibited. When the parties complained of shall have been duly notified of such petition, the court shall proceed, as soon as may be, to the hearing and determination of the case; and pending such petition, and before final decree, the court may at any time make such temporary restraining order or prohibition as shall be deemed just in the premises. Whenever it shall appear to the court before which any such proceeding may be pending that the ends of justice require that other parties should be brought before the court, the court may cause them to be summoned, whether they reside in the district in which the court is held or not, and subpoenas to that end may be served in any district by the marshal thereof.

Sec. 16. That any person, firm, corporation, or association shall be entitled to sue for and have injunctive relief, in any court of the United States having jurisdiction over the parties, against threatened loss or damage by a violation of the antitrust laws, including sections two, three, seven and eight of this Act, when and under the same conditions and principles as injunctive relief against threatened conduct that will cause loss or damage is granted by courts of equity, under the rules governing such proceedings, and upon the execution of proper bond against damages for an injunction improvidently granted and a showing that the danger of irreparable loss or damage is immediate, a preliminary injunction may issue: Provided, That nothing herein contained shall be construed to entitle any person, firm, corporation, or association, except the United States, to bring suit in equity for injunctive relief against any common carrier subject to the provisions of the Act to regulate commerce, approved February fourth, eighteen hundred and eighty-seven, in respect of any matter subject to the regulation, supervision, or other jurisdiction of the Interstate Commerce Commission.

Sec. 17. That no preliminary injunction shall be issued without notice to the opposite party.

No temporary restraining order shall be granted without notice to the opposite party unless it shall clearly appear from specific facts

shown by affidavit or by the verified bill that immediate and irreparable injury, loss, or damage will result to the applicant before notice can be served and a hearing had thereon. Every such temporary restraining order shall be indorsed with the date and hour of issuance, shall be forthwith filed in the clerk's office and entered of record, shall define the injury and state why it is irreparable and why the order was granted without notice, and shall by its terms expire within such time after entry, not to exceed ten days, as the court or judge may fix, unless within the time so fixed the order is extended for a like period for good cause shown, and the reasons for such extension shall be entered of record. In case a temporary restraining order shall be granted without notice in the contingency specified, the matter of the issuance of a preliminary injunction shall be set down for a hearing at the earliest possible time and shall take precedence of all matters except older matters of the same character; and when the same comes up for hearing the party obtaining the temporary restraining order shall proceed with the application for a preliminary injunction, and if he does not do so the court shall dissolve the temporary restraining order. Upon two days' notice to the party obtaining such temporary restraining order the opposite party may appear and move the dissolution or modification of the order, and in that event the court or judge shall proceed to hear and determine the motion as expeditiously as the ends of justice may require.

Section two hundred and sixty-three of an Act entitled "An Act to codify, revise, and amend the laws relating to the judiciary," approved March third, nineteen hundred and eleven, is hereby repealed.

Nothing in this section contained shall be deemed to alter, repeal, or amend section two hundred and sixty-six of an Act entitled "An Act to codify, revise, and amend the laws relating to the judiciary," approved March third, nineteen hundred and eleven.

Sec. 18. That, except as otherwise provided in section 16 of this Act, no restraining order or

interlocutory order of injunction shall issue, except upon the giving of security by the applicant in such sum as the court or judge may deem proper, conditioned upon the payment of such costs and damages as may be incurred or suffered by any party who may be found to have been wrongfully enjoined or restrained thereby.

Sec. 19. That every order of injunction or restraining order shall set forth the reasons for the issuance of the same, shall be specific in terms, and shall describe in reasonable detail, and not by reference to the bill of complaint or other document, the act or acts sought to be restrained, and shall be binding only upon the parties to the suit, their officers, agents, servants, employees, and attorneys, or those in active concert or participating with them, and who shall, by personal service or otherwise, have received actual notice of the same.

Sec. 20. That no restraining order or injunction shall be granted by any court of the United States, or a judge or the judges thereof, in any case between an employer and employees, or between employers and employees, or between employees, or between persons employed and persons seeking employment, involving, or growing out of, a dispute concerning terms or conditions of employment, unless necessary to prevent irreparable injury to property, or to a property right, of the party making the application, for which injury there is no adequate remedy at law, and such property or property right must be described with particularity in the application, which must be in writing and sworn to by the applicant or by his agent or attorney.

And no such restraining order or injunction shall prohibit any person or persons, whether singly or in concert, from terminating any relation of employment, or from ceasing to perform any work or labor, or from recommending, advising, or persuading others by peaceful means so to do; or from attending at any place where any such person or persons may lawfully be, for the purpose of peacefully obtaining or communicating information, or from peacefully persuading any person to work or to abstain from working; or from ceasing to patronize or to employ any party to such dispute, or from recommending, advising, or persuading others by peaceful and lawful means so to do; or from paying or giving to, or withholding from, any person engaged in such dispute, any strike benefits or other moneys or things of value; or from peaceably assembling in a lawful manner, and for lawful purposes; or from doing any act or thing which might lawfully be done in the absence of such dispute by any party thereto; nor shall any of the acts specified in this paragraph be considered or held to be violations of any law of the United States.

Sec. 21. That any person who shall willfully disobey any lawful writ, process, order, rule, decree, or command of any district court of the United States or any court of the District of Columbia by doing any act or thing therein, or thereby forbidden to be done by him, if the act or thing so done by him be of such character as to constitute also a criminal offense under any statute of the United States, or under the laws of any State in which the act was committed, shall be proceeded against for his said contempt as hereinafter provided.

Sec. 22. That whenever it shall be made to appear to any district court of judge thereof, or to any judge therein sitting, by the return of a proper officer on lawful process, or upon the affidavit of some credible person, or by information filed by any district attorney, that there is reasonable ground to believe that any person has been guilty of such contempt, the court or judge thereof, or any judge therein sitting, may issue a rule requiring the said person so charged to show cause upon a day certain why he should not be punished therefor, which rule, together with a copy of the affidavit or information, shall be served upon the person charged, with sufficient promptness to enable him to prepare for and make return to the order at the time fixed therein. If upon or by such return, in the judgment of the court, the alleged contempt be not sufficiently purged, a trial shall be directed at a time and place fixed by the court:

Provided, however, That if the accused, being a natural person, fail or refuse to make return to the rule to show cause, an attachment may issue against his person to compel an answer, and in case of his continued failure or refusal, or if for any reason it be impracticable to dispose of the matter on the return day, he may be required to give reasonable bail for his attendance at the trial and his submission to the final judgment of the court. Where the accused is a body corporate, an attachment for the sequestration of its property may be issued upon like refusal or failure to answer.

In all cases within the purview of this Act such trial may be by the court, or, upon demand of the accused, by a jury; in which latter event the court may impanel a jury from the jurors then in attendance, or the court or the judge thereof in chambers may cause a sufficient number of jurors to be selected and summoned, as provided by law, to attend at the time and place of trial, at which time a jury shall be selected and impaneled as upon a trial for misdemeanor; and such trial shall conform, as near as may be, to the practice in criminal cases prosecuted by indictment or upon information.

If the accused be found guilty, judgment shall be entered accordingly, prescribing the punishment, either by fine or imprisonment, or both, in the discretion of the court. Such fine shall be paid to the United States or to the complainant or other party injured by the act constituting the contempt, or may, where more than one is so damaged, be divided or apportioned among them as the court may direct, but in no case shall the fine to be paid to the United States exceed, in case the accused is a natural person, the sum of \$1,000, nor shall such imprisonment exceed the term of six months: Provided, That in any case the court or a judge thereof may, for good cause shown, by affidavit or proof taken in open court or before such judge and filed with the papers in the case, dispense with the rule to show cause, and may issue an attachment for the arrest of the person charged with contempt; in which event such person, when arrested, shall be brought before such court or a judge thereof without unnecessary delay and shall be admitted to bail in a reasonable penalty for his appearance to answer to the charge or for trial for the contempt; and thereafter the proceedings shall be the same as provided herein in case the rule had issued in the first instance.

Sec. 23. That the evidence taken upon the trial of any persons so accused may be preserved by bill of exceptions, and any judgment of conviction may be reviewed upon writ of error in all respects as now provided by law in criminal cases, and may be affirmed, reversed, or modified as justice may require. Upon the granting of such writ of error, execution of judgment shall be stayed, and the accused, if thereby sentenced to imprisonment, shall be admitted to bail in such reasonable sum as may be required by the court, or by any justice, or any judge of any district court of the United States or any court of the District of Columbia.

Sec. 24. That nothing herein contained shall be construed to relate to contempts committed in the presence of the court, or so near thereto as to obstruct the administration of justice, nor to contempts committed in disobedience of any lawful writ, process, order, rule, decree, or command entered in any suit or action brought or prosecuted in the name of, or on behalf of, the United States, but the same, and all other cases of contempt not specifically embraced within section twenty-one of this Act, may be punished in conformity to the usages at law and in equity now prevailing.

Sec. 25. That no proceeding for contempt shall be instituted against any person unless begun within one year from the date of the act complained of; nor shall any such proceeding be a bar to any criminal prosecution for the same act or acts; but nothing herein contained shall affect any proceedings in contempt pending at the time of the passage of this Act.

Sec. 26. If any clause, sentence, paragraph, or part of this Act shall, for any reason, be

adjudged by any court of competent jurisdiction to be invalid, such judgment shall not affect, impair, or invalidate the remainder thereof, but shall be confined in its operation to the clause, sentence, paragraph, or part thereof directly involved in the controversy in which such judgment shall have been rendered.

Source:

Statutes at Large, vol. 38, pp. 730-740.

10. FRANKLIN D. ROOSEVELT, "FORGOTTEN MAN" RADIO SPEECH, 1932

National radio address delivered by Franklin D. Roosevelt, then Democratic governor of New York, on April 7, 1932, in which he argued that hope for national economic recovery from the Great Depression resided with the ordinary farmer and industrial worker-"the forgotten man at the bottom of the economic pyramid." Roosevelt spoke from Albany under the auspices of the Democratic National Committee. An emerging presidential candidate, he used the speech to present his alternative to the Republican Hoover administration's economic reform effort. Roosevelt likened the nation's economic crisis in 1932 to the grave emergency America faced in 1917 as it entered World War I. Just as America had mobilized economically for war from "bottom to top," he asserted, so it now must do to survive the Depression. An economic reform program, he said, must rest upon the "forgotten man," who represented the indispensable unit of economic power. Roosevelt advocated federal measures to restore the farmer's purchasing power, provide mortgage relief to small banks and home owners, and lower tariffs to promote export markets for American goods.



Although I understand that I am talking under the auspices of the Democratic National Committee, I do not want to limit myself to politics. I do not want to feel that I am addressing an audience of Democrats, nor that I speak merely as a Democrat myself. The present condition for our national affairs is too serious to be viewed through partisan eyes for partisan purposes.

Fifteen years ago my public duty called me to an active part in a great national emergency the World War. Success then was due to a leadership whose vision carried beyond the timorous and futile gesture of sending a tiny army of 150,000 trained soldiers and the regular Navy to the aid of our Allies.

The generalship of that moment conceived of a whole nation mobilized for war, economic, industrial, social and military resources gathered into a vast unit, capable of and actually in the process of throwing into the scales 10,000,000 men equipped with physical needs and sustained by the realization that behind them were the united efforts of 110,000,000 human beings. It was a great plan because it was built from bottom to top and not from top to bottom.

In my calm judgment, the nation faces today a more grave emergency than in 1917.

It is said that Napoleon lost the Battle of Waterloo because he forgot his infantry. He staked too much upon the more spectacular but less substantial cavalry.

The present Administration in Washington provides a close parallel. It has either forgotten or it does not want to remember the infantry of our economic army.

These unhappy times call for the building of plans that rest upon the forgotten, the unorganized but the indispensable units of economic power, for plans like those of 1917 that build from the bottom up and not from the top down, that put their faith once more in the forgotten man at the bottom of the economic pyramid.

Obviously, these few minutes tonight permit no opportunity to lay down the ten or a dozen closely related objectives of a plan to meet our present emergency, but I can draw a few essentials, a beginning, in fact, of a planned program. It is the habit of the unthinking to turn in times like this to the illusions of economic magic. People suggest that huge expenditures of public funds by the Federal Government and by State and local governments will completely solve the unemployment problem. But it is clear that even if we could raise many billions of dollars and find definitely useful public works to spend these billions on, even all that money would not give employment to the 7,000,000 or 10,000,000 people who are out of work.

Let us admit frankly that it would be only a stopgap. A real economic cure must go to the killing of bacteria in the system rather than to the treatment of external symptoms.

How much do the shallow thinkers realize, for example, that approximately one-half of our population, fifty or sixty million people, earn their living by farming or in small towns where existence immediately depends on farms. They have today lost their purchasing power. Why? They are receiving for farm products less than the cost to them of growing these farm products.

The result of this loss of purchasing power is that many other millions of people engaged in industry in the cities cannot sell industrial products to the farming half of the nation. This brings home to every city worker that his own employment is directly tied up with the farmer's dollar. No nation can long continue half bankrupt. Main Street, Broadway, the mills, the mines will close if half of the buyers are broke.

I cannot escape the conclusion that one of the essentials of a national program of restoration must be to restore purchasing power to the farming half of the country. Without this the wheels of railroads and of factories will not turn.

Closely associated with this first objective is the problem of keeping the home-owner and the farm-owner where he is, without being dispossessed through the foreclosure of his mortgage.

His relationship to the great banks of Chicago and New York is pretty remote. The two billion dollar fund which President Hoover and the Congress have put at the disposal of the big banks, the railroads and the corporations of the nation is not for him.

His is a relationship to his little local bank or local loan company. It is a sad fact that even though the local lender in many cases does not want to evict the farmer or homeowner by foreclosure proceedings, he is forced to do so in order to keep his bank or company solvent. Here should be an objective of government itself, to provide at least as much assistance to the little fellow as it is now giving to the large banks and corporations. That is another example of building from the bottom up.

One other objective closely related to the problem of selling American products is to provide a tariff policy based upon economic common sense rather than upon politics—hot air—pull.

This country during the past few years, culminating with the Hawley-Smoot Tariff of 1929, has compelled the world to build tariff fences so high that world trade is decreasing to the vanishing point. The value of goods internationally exchanged is today less than half of what it was three or four years ago.

Every man and woman who gives any thought to the subject knows that if our factories run even 80 per cent of capability they will turn out more products that we as a nation can possibly use ourselves.

The answer is that if they are to run on 80 per cent of capacity we must sell some goods abroad. How can we do that if the outside nations cannot pay us in cash—and we know by sad experience that they cannot do that. The only way they can pay us is in their own goods or raw materials, but this foolish tariff of ours makes that impossible.

What we must do is this: To revise our tariff on the basis of a reciprocal exchange of goods, allowing other nations to buy and to pay for our goods by sending us such of their goods as will not seriously throw any of our industries out of balance, and, incidentally, making impossible in this county the continuance of pure monopolies which cause us to pay excessive prices for many of the necessities of life.

Such objectives as these three—restoring farmers' buying power, relief to the small banks and homeowners and a reconstructed tariff policy—these are only a part of ten or a dozen vital factors.

But they seem to be beyond the concern of a National Administration which can think in terms only of the top of the social and economic structure. They have sought temporary relief from the top down rather than permanent relief from the bottom up. They have totally failed to plan ahead in a comprehensive way. They have waited until something has cracked and then at the last moment have sought to prevent total collapse.

It is high time to get back to fundamentals. It is high time to admit with courage that we are in the midst of an emergency at least equal to that of war. Let us mobilize to meet it.

Source:

Landmark Documents in American History, Facts On File, Inc.

11. SECURITIES EXCHANGE ACT, 1934

Federal legislation enacted on June 6, 1934, that established the Securities and Exchange Commission (SEC) to regulate American stock exchanges and to enforce the U.S. Securities Act enacted May 27, 1933. The latter act was designed to ensure full disclosure to purchasers of all stocks and bonds offered for public sale (with the exception of certain government bonds, railroad securities, and securities of some nonprofit institutions). The securities were to be registered with the U.S. Federal Trade Commission, and such registration had to include accurate and complete financial and other relevant information, as well as a prospectus. The prospectus was required to be given to every potential investor. The act imposed stiff penalties for the sale of misrepresented or unregistered securities.

The SEC, consisting of five members appointed by the president and approved by the Senate, was authorized to license stock exchanges and regulate securities trading. To prevent unfair and deceptive practices, the act required that current information about corporations whose securities were traded be made available to investors and that each security traded be registered with the SEC. The Federal Reserve Board was authorized to regulate margin requirements in securities trading so as to reduce speculation. Roosevelt appointed financier and speculator Joseph P. Kennedy, father of the future president, as the SEC's first chair, because "he knew the tricks of the trade."

Congress designed both acts to curb the problems that led to the stock market crash of 1929. While recessions occurred periodically after the 1930s, the country did not suffer a major depression again in the 20th century. However, a number of securities regulations were modified or abrogated during the prosperity of the 1990s. By taking advantage of loopholes the changes had opened, and through downright corruption, corporate executives contributed to a severe downturn in the stock markets of the first years of the 21st century.

An Act

To provide for the regulation of securities exchanges and of over-the-counter markets operating in interstate and foreign commerce and through the mails, to prevent inequitable and unfair practices on such exchanges and markets, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

Title I—Regulation of Securities Exchanges Short Title

Section 1. This Act may be cited as the "Securities Exchange Act of 1934."

Necessity for Regulation as Provided in This Title

Sec. 2. For the reasons hereinafter enumerated,

transactions in securities as commonly conducted upon securities exchanges and over-the-counter markets are affected with a national public interest which makes it necessary to provide for regulation and control of such transactions and of practices and matters related thereto, including transactions by officers, directors, and principal security holders, to require appropriate reports, and to impose requirements necessary to make such regulation and control reasonably complete and effective, in order to protect interstate commerce, the national credit, the Federal taxing power, to protect and make more effective the national banking system and Federal Reserve System, and to insure the maintenance of fair and honest markets in such transactions:

(1) Such transactions (a) are carried on in large volume by the public generally and in large part originate outside the States in which the exchanges and over-the-counter markets are located and/or are effected by means of the mails and instrumentalities of interstate commerce; (b) constitute an important part of the current of interstate commerce; (c) involve in large part the securities of issuers engaged in interstate commerce; (d) involve the use of credit, directly affect the financing of trade, industry, and transportation in interstate commerce, and directly affect and influence the volume of interstate commerce; and affect the national credit.

(2) The prices established and offered in such transactions are generally disseminated and quoted throughout the United States and foreign countries and constitute a basis for determining and establishing the prices at which securities are bought and sold, the amount of certain taxes owing to the United States and to the several States by owners, buyers, and sellers of securities, and the value of collateral for bank loans.

(3) Frequently the prices of securities on such exchanges and markets are susceptible to manipulation and control, and the dissemination of such prices gives rise to excessive speculation, resulting in sudden and unreasonable fluctuations in the prices of securities which (a) cause alternately unreasonable expansion and unreasonable contraction of the volume of credit available for trade, transportation, and industry in interstate commerce, (b) hinder the proper appraisal of the value of securities and thus prevent a fair calculation of taxes owing to the United States and to the several States by owners, buyers, and sellers of securities, and (c) prevent the fair valuation of collateral for bank loans and/or obstruct the effective operation of the national banking system and Federal Reserve System.

(4) National emergencies, which produce widespread unemployment and the dislocation of trade, transportation, and industry, and which burden interstate commerce and adversely affect the general welfare, are precipitated, intensified, and prolonged by manipulation and sudden and unreasonable fluctuations of security prices and by excessive speculation on such exchanges and markets, and to meet such emergencies the Federal Government is put to such great expense as to burden the national credit.

Source:

United States Statutes at Large, vol. 48, pp. 881-909.

12. NATIONAL LABOR RELATIONS ACT, 1935

New Deal legislation, enacted on July 5, 1935, that created the National Labor Relations Board (NLRB) and guaranteed workers the right to organize and to bargain collectively through their chosen representatives. It represented a major landmark in the history of the labor movement.

Previously, in an act of March 23, 1932, Congress forbade the use of federal court injunctions to preserve antiunion employment contracts or to restrain strikes, boycotts, or picketing, except where such strikes affected the public safety. Sponsored by Senator George W. Norris of Nebraska and Representative Fiorello LaGuardia of New York, it protected workers' rights to join a union by prohibiting "yellow dog" contracts (agreements by which employers required their workers not to join unions and not to participate in any strike against the employers).

The National Labor Relations Act was also sponsored by Senator Wagner joined by Representative William P. Connery Jr. of Massachusetts. It authorized the NLRB to investigate complaints, issue cease-and-desist orders against unfair labor practices in interstate commerce, protect the right to collective bargaining, and arbitrate labor disputes. It prohibited employers from interfering with workers' rights to organize or to join independent unions, from promoting company unions, from discriminating in employment because of union membership, from punishing employees who file charges or testify under the act, and from refusing to negotiate with an elected union.

Its constitutionality was upheld 5-4 on April 12, 1937 in NLRB v. Jones and Laughlin Steel Corporation (301 U.S. 1).



An Act

To diminish the causes of labor disputes burdening or obstructing interstate and foreign commerce, to create a National Labor Relations Board, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

Findings and Policy

Section 1. The denial by employers of the right of employees to organize and the refusal by employers to accept the procedure of collective bargaining lead to strikes and other forms of industrial strife or unrest, which have the intent or the necessary effect of burdening or obstructing commerce by (a) impairing the efficiency, safety, or operation of the instrumentalities of commerce; (b) occurring in the current of commerce; (c) materially affecting, restraining, or controlling the flow of raw materials or manufactured or processed goods from or into the channels of commerce, or the prices of such materials or goods in commerce; or (d) causing diminution of employment and wages in such volume as substantially to impair or disrupt the market for goods flowing from or into the channels of commerce.

The inequality of bargaining power between employees who do not possess full freedom of association or actual liberty of contract, and employers who are organized in the corporate or other forms of ownership association substantially burdens and affects the flow of commerce, and tends to aggravate recurrent business depressions, by depressing wage rates and the purchasing power of wage earners in industry and by preventing the stabilization of competitive wage rates and working conditions within and between industries.

Experience has proved that protection by law of the right of employees to organize and bargain collectively safeguards commerce from injury, impairment, or interruption, and promotes the flow of commerce by removing certain recognized sources of industrial strife and unrest, by encouraging practices fundamental to the friendly adjustment of industrial disputes arising out of differences as to wages, hours, or other working conditions, and by restoring equality of bargaining power between employers and employees.

It is hereby declared to be the policy of the United States to eliminate the causes of certain substantial obstructions to the free flow of commerce and to mitigate and eliminate these obstructions when they have occurred by encouraging the practice and procedure of collective bargaining and by protecting the exercise by workers of full freedom of association, selforganization, and designation of representatives of their own choosing, for the purpose of negotiating the terms and conditions of their employment or other mutual aid or protection...

Rights of Employees

Sec. 7. Employees shall have the right to selforganization, to form, join, or assist labor organizations, to bargain collectively through representatives of their own choosing, and to engage in concerted activities, for the purpose of collective bargaining or other mutual aid or protection.

Sec. 8. It shall be an unfair labor practice for an employer—

(1) To interfere with, restrain, or coerce employees in the exercise of the rights guaranteed in section 7.

(2) To dominate or interfere with the formation or administration of any labor organization or contribute financial or other support to it: *Provided*, That subject to rules and regulations made and published by the Board pursuant to section 6(a), an employer shall not be prohibited from permitting employees to confer with him during working hours without loss of time or pay.

(3) By discrimination in regard to hire or tenure of employment or any term or condition of employment to encourage or discourage membership in any labor organization: Provided, That nothing in this Act, or in the National Industrial Recovery Act (U.S.C., Supp. VII, title 15, secs. 701-712), as amended from time to time, or in any code or agreement approved or prescribed thereunder, or in any other statute of the United States, shall preclude an employer from making an agreement with a labor organization (not established, maintained, or assisted by any action defined in this Act as an unfair labor practice) to require as a condition of employment membership therein, if such labor organization is the representative of the employees as provided in section 9(a), in the appropriate collective bargaining unit covered by such agreement when made.

(4) To discharge or otherwise discriminate against an employee because he has filed charges or given testimony under this Act.

(5) To refuse to bargain collectively with the representatives of his employees, subject to the provisions of Section 9(a).

Source:

Statutes at Large, Vol. 48, pp. 449-457.

13. Dwight D. Eisenhower's "Military-Industrial Complex" Address, 1961

Address to the American public delivered by U.S. president Dwight D. "Ike" Eisenhower on January 17, 1961, as he prepared to leave office. Eisenhower pointed out the dangers not only of the ruthless, hostile communist ideology but also of the military establishment and arms industry built to combat communism's global ambitions. He warned against "the acquisition of unwarranted influence, whether sought or unsought, by the military-industrial complex," whose enormous power, if not properly meshed with peaceful methods and goals, could threaten American liberties and the democratic process. He also warned that centralized research could inhibit intellectual curiosity and that public policy could become "the captive of the scientifictechnological elite." He urged the nation not to plunder tomorrow's resources for today's comforts and argued that disarmament must be a continuing imperative.

My fellow Americans:

Three days from now, after half a century in the service of our country, I shall lay down the responsibilities of office as, in traditional and solemn ceremony, the authority of the Presidency is vested in my successor.

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This evening I come to you with a message of leave-taking and farewell, and to share a few final thoughts with you, my countrymen.

Like every other citizen, I wish the new President, and all who will labor with him, Godspeed. I pray that the coming years will be blessed with peace and prosperity for all. Our people expect their President and the Congress to find essential agreement on issues of great moment, the wise resolution of which will better shape the future of the Nation. My own relations with the Congress, which began on a remote and tenuous basis when, long ago, a member of the Senate appointed me to West Point, have since ranged to the intimate during the war and immediate post-war period, and, finally, to the mutually interdependent during these past eight years.

In this final relationship, the Congress and the Administration have, on most vital issues, cooperated well, to serve the national good rather than mere partisanship, and so have assured that the business of the Nation should go forward. So, my official relationship with the Congress ends in a feeling, on my part, of gratitude that we have been able to do so much together.

II.

We now stand ten years past the midpoint of a century that has witnessed four major wars among great nations. Three of these involved our own country. Despite these holocausts America is today the strongest, the most influential and most productive nation in the world. Understandably proud of this pre-eminence, we yet realize that America's leadership and prestige depend, not merely upon our unmatched material progress, riches and military strength, but on how we use our power in the interests of world peace and human betterment.

III.

Throughout America's adventure in free government, our basic purposes have been to keep the peace; to foster progress in human achievement, and to enhance liberty, dignity and integrity among people and among nations. To strive for less would be unworthy of a free and religious people. Any failure traceable to arrogance, or our lack of comprehension or readiness to sacrifice would inflict upon us grievous hurt both at home and abroad.

Progress toward these noble goals is persistently threatened by the conflict now engulfing the world. It commands our whole attention, absorbs our very beings. We face a hostile ideology—global in scope, atheistic in character, ruthless in purpose, and insidious in method. Unhappily the danger it poses promises to be of indefinite duration. To meet it successfully, there is called for, not so much the emotional and transitory sacrifices of crisis, but rather those which enable us to carry forward steadily, surely, and without complaint the burdens of a prolonged and complex struggle—with liberty the stake. Only thus shall we remain, despite every provocation, on our charted course toward permanent peace and human betterment.

Crises there will continue to be. In meeting them, whether foreign or domestic, great or small, there is a recurring temptation to feel that some spectacular and costly action could become the miraculous solution to all current difficulties. A huge increase in newer elements of our defense; development of unrealistic programs to cure every ill in agriculture; a dramatic expansion in basic and applied research—these and many other possibilities, each possibly promising in itself, may be suggested as the only way to the road we wish to travel.

But each proposal must be weighed in the light of a broader consideration: the need to maintain balance in and among national programs—balance between the private and the public economy, balance between cost and hoped for advantage—balance between the clearly necessary and the comfortably desirable; balance between our essential requirements as a nation and the duties imposed by the nation upon the individual; balance between actions of the moment and the national welfare of the future. Good judgment seeks balance and progress; lack of it eventually finds imbalance and frustration.

The record of many decades stands as proof that our people and their government have, in the main, understood these truths and have responded to them well, in the face of stress and threat. But threats, new in kind or degree, constantly arise. I mention two only.

IV.

A vital element in keeping the peace is our military establishment. Our arms must be mighty, ready for instant action, so that no potential aggressor may be tempted to risk his own destruction.

Our military organization today bears little relation to that known by any of my predecessors

in peacetime, or indeed by the fighting men of World War II or Korea. Until the latest of our world conflicts, the United States had no armaments industry. American makers of plowshares could, with time and as required, make swords as well. But now we can no longer risk emergency improvisation of national defense; we have been compelled to create a permanent armaments industry of vast proportions. Added to this, three and a half million men and women are directly engaged in the defense establishment. We annually spend on military security more than the net income of all United States corporations.

This conjunction of an immense military establishment and a large arms industry is new in the American experience. The total influence economic, political, even spiritual—is felt in every city, every State house, every office of the Federal government. We recognize the imperative need for this development. Yet we must not fail to comprehend its grave implications. Our toil, resources and livelihood are all involved; so is the very structure of our society.

In the councils of government, we must guard against the acquisition of unwarranted influence, whether sought or unsought, by the military-industrial complex. The potential for the disastrous rise of misplaced power exists and will persist.

We must never let the weight of this combination endanger our liberties or democratic processes. We should take nothing for granted. Only an alert and knowledgeable citizenry can compel the proper meshing of the huge industrial and military machinery of defense with our peaceful methods and goals, so that security and liberty may prosper together. Akin to, and largely responsible for the sweeping changes in our industrial-military posture, has been the technological revolution during recent decades.

In this revolution, research has become central; it also becomes more formalized, complex, and costly. A steadily increasing share is conducted for, by, or at the direction of, the Federal government. Today, the solitary inventor, tinkering in his shop, has been over-shadowed by task forces of scientists in laboratories and testing fields. In the same fashion, the free university, historically the fountainhead of free ideas and scientific discovery, has experienced a revolution in the conduct of research. Partly because of the huge costs involved, a government contract becomes virtually a substitute for intellectual curiosity. For every old blackboard there are now hundreds of new electronic computers.

The prospect of domination of the nation's scholars by Federal employment, project allocations, and the power of money is ever present and is gravely to be regarded. Yet, in holding scientific research and discovery in respect, as we should, we must also be alert to the equal and opposite danger that public policy could itself become the captive of a scientific-technological elite.

It is the task of statesmanship to mold, to balance, and to integrate these and other forces, new and old, within the principles of our democratic system—ever aiming toward the supreme goals of our free society.

V.

Another factor in maintaining balance involves the element of time. As we peer into society's future, we—you and I, and our government must avoid the impulse to live only for today, plundering, for our own ease and convenience, the precious resources of tomorrow. We cannot mortgage the material assets of our grandchildren without risking the loss also of their political and spiritual heritage. We want democracy to survive for all generations to come, not to become the insolvent phantom of tomorrow.

VI.

Down the long lane of the history yet to be written America knows that this world of ours, ever growing smaller, must avoid becoming a community of dreadful fear and hate, and be instead, a proud confederation of mutual trust and respect. Such a confederation must be one of equals. The weakest must come to the conference table with the same confidence as do we, protected as we are by our moral, economic, and military strength. That table, though scarred by many past frustrations, cannot be abandoned for the certain agony of the battlefield.

Disarmament, with mutual honor and confidence, is a continuing imperative. Together we must learn how to compose differences, not with arms, but with intellect and decent purpose. Because this need is so sharp and apparent I confess that I lay down my official responsibilities in this field with a definite sense of disappointment. As one who has witnessed the horror and the lingering sadness of war-as one who knows that another war could utterly destroy this civilization which has been so slowly and painfully built over thousands of years-I wish I could say tonight that a lasting peace is in sight. Happily, I can say that war has been avoided. Steady progress toward our ultimate goal has been made. But, so much remains to be done. As a private citizen. I shall never cease to do what little I can to help the world advance along that road.

VII.

So—in this my last good night to you as your President—I thank you for the many opportunities you have given me for public service in war and peace. I trust that in that service you find some things worthy; as for the rest of it, I know you will find ways to improve performance in the future.

You and I—my fellow citizens—need to be strong in our faith that all nations, under God, will reach the goal of peace with justice. May we be ever unswerving in devotion to principle, confident but humble with power, diligent in pursuit of the Nation's great goals. To all the peoples of the world, I once more give expression to America's prayerful and continuing aspiration:

We pray that peoples of all faiths, all races, all nations, may have their great human needs satisfied; that those now denied opportunity shall come to enjoy it to the full; that all who yearn for freedom may experience its spiritual blessings; that those who have freedom will understand, also, its heavy responsibilities; that all who are insensitive to the needs of others will learn charity; that the scourges of poverty, disease and ignorance will be made to disappear from the earth, and that, in the goodness of time, all peoples will come to live together in a peace guaranteed by the binding force of mutual respect and love.

Source:

Public Papers of the Presidents, Dwight D. Eisenhower, 1960, pp. 1,035–1,040.

14. RONALD REAGAN'S ADDRESS TO THE NATION ON THE ECONOMY, 1981

President Ronald Reagan gave his first broadcast address to the nation on February 5, 1981. His topic was the state of the economy. He warned that the nation was facing its "worst economic mess since the Great Depression," and he urged the adoption of his economic program. He called for tax cuts to stimulate investment and for reduced government spending to cut inflation and unemployment. He asked Congress and business and labor groups to cooperate with his efforts. Reagan used a number of visual aids to illustrate his remarks, including charts with red and blue lines to indicate tax and spending trends, as well as a crumpled dollar bill (which he held in one hand) and a quarter, a dime, and a penny (which he held in the other) to demonstrate how the 1960 value of a dollar had fallen to 36 cents.

Good evening.

I'm speaking to you tonight to give you a report on the state of our Nation's economy. I regret to say that we're in the worst economic mess since the Great Depression.

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A few days ago I was presented with a report I'd asked for, a comprehensive audit, if you will, of our economic condition. You won't like it. I didn't like it. But we have to face the truth and then go to work to turn things around. And make no mistake about it, we can turn them around.

I'm not going to subject you to the jumble of charts, figures, and economic jargon of that audit, but rather will try to explain where we are, how we got there, and how we can get back. First, however, let me just give a few "attention getters" from the audit.

The Federal budget is out of control, and we face runaway deficits of almost \$480 billion for this budget year that ends September 30th. That deficit is larger than the entire Federal budget in 1957, and so is the almost \$80 billion we will pay in interest this year on the national debt.

Twenty years ago, in 1960, our Federal Government payroll was less than \$13 billion. Today it is \$75 billion. During these 20 years our population has only increased by 23.3 percent. The Federal budget has gone up 528 percent.

Now, we've just had 2 years of back-to-back double-digit inflation—13.3 percent in 1979, 12.4 percent last year. The last time this happened was in World War I.

In 1960 mortgage interest rates averaged about 6 percent. They're 2 1/2 times as high now, 15.4 percent.

The percentage of your earnings the Federal Government took in taxes in 1960 has almost doubled.

And finally there are 7 million Americans caught up in the personal indignity and human tragedy of unemployment. If they stood in a line, allowing 3 feet for each person, the line would reach from the coast of Maine to California.

Well, so much for the audit itself. Let me try to put this in personal terms. Here is a dollar such as you earned, spent, or saved in 1960. And here is a quarter, a dime, and a penny—36 cents. That's what this 1960 dollar is worth today. And if the present world inflation rate should continue 3 more years, that dollar of 1960 will be worth a quarter. What initiative is there to save? And if we don't save we're short of the investment capital needed for business and industry expansion. Workers in Japan and West Germany save several times the percentage of their income than Americans do.

What's happened to that American dream of owning a home? Only 10 years ago a family could buy a home, and the monthly payment averaged little more than a quarter—27 cents out of each dollar earned. Today, it takes 42 cents out of every dollar of income. So, fewer than 1 out of 11 families can afford to buy their first new home.

Regulations adopted by government with the best of intentions have added \$666 to the cost of an automobile. It is estimated that together regulations of every kind, on shopkeepers, farmers, and major industries, add \$100 billion or more to the cost of the goods and services we buy. And then another \$20 billion is spent by government handling the paperwork created by those regulations.

I'm sure you re getting the idea that the audit presented to me found government policies of the last few decades responsible for our economic troubles. We forgot or just overlooked the fact that government—any government—has a built-in tendency to grow. Now, we all had a hand in looking to government for benefits as if government had some source of revenue other than our earnings. Many if not most of the things we thought of or that government offered to us seemed attractive.

In the years following the Second World War it was easy, for a while at least, to overlook the price tag. Our income more than doubled in the 25 years after the war. We increased our takehome pay in those 25 years by more than we had amassed in all the preceding 150 years put together. Yes, there was some inflation, 1 or 1 1/2 percent a year. That didn't bother us. But if we look back at those golden years, we recall that even then voices had been raised, warning that inflation, like radioactivity, was cumulative and that once started it could get out of control.

Some government programs seemed so worthwhile that borrowing to fund them didn't

bother us. By 1960 our national debt stood at \$284 billion. Congress in 1971 decided to put a ceiling of \$400 billion on our ability to borrow. Today the debt is \$934 billion. So-called temporary increases or extensions in the debt ceiling have been allowed 21 times in these 10 years, and now I've been forced to ask for another increase in the debt ceiling or the government will be unable to function past the middle of February—and I've only been here 16 days. Before we reach the day when we can reduce the debt ceiling, we may in spite of our best efforts see a national debt in excess of a trillion dollars. Now, this is a figure that's literally beyond our comprehension.

We know now that inflation results from all that deficit spending. Government has only two ways of getting money other than raising taxes. It can go into the money market and borrow, competing with its own citizens and driving up interest rates, which it has done, or it can print money, and it's done that. Both methods are inflationary.

We're victims of language. The very word "inflation" leads us to think of it as just high prices. Then, of course, we resent the person who puts on the price tags, forgetting that he or she is also a victim of inflation. Inflation is not just high prices; it's a reduction in the value of our money. When the money supply is increased but the goods and services available for buying are not, we have too much money chasing too few goods. Wars are usually accompanied by inflation. Everyone is working or fighting, but production is of weapons and munitions, not things we can buy and use.

Now, one way out would be to raise taxes so that government need not borrow or print money. But in all these years of government growth, we've reached, indeed surpassed, the limit of our people's tolerance or ability to bear an increase in the tax burden. Prior to World War II, taxes were such that on the average we only had to work just a little over 1 month each year to pay our total Federal, State, and local tax bill. Today we have to work 4 months to pay that bill. Some say shift the tax burden to business and industry, but business doesn't pay taxes. Oh, don't get the wrong idea. Business is being taxed, so much so that we're being priced out of the world market. But business must pass its costs of operations—and that includes taxes—on to the customer in the price of the product. Only people pay taxes, all the taxes. Government just uses business in a kind of sneaky way to help collect the taxes. They're hidden in the price; we aren't aware of how much tax we actually pay.

Today this once great industrial giant of ours has the lowest rate of gain in productivity of virtually all the industrial nations with whom we must compete in the world market. We can't even hold our own market here in America against foreign automobiles, steel, and a number of other products. Japanese production of automobiles is almost twice as great per worker as it is in America. Japanese steelworkers outproduce their American counterparts by about 25 percent.

Now, this isn't because they're better workers. I'll match the American working man or woman against anyone in the world. But we have to give them the tools and equipment that workers in the other industrial nations have.

We invented the assembly line and mass production, but punitive tax policies and excessive and unnecessary regulations plus government borrowing have stifled our ability to update plant and equipment. When capital investment is made, it's too often for some unproductive alterations demanded by government to meet various of its regulations. Excessive taxation of individuals has robbed us of incentive and made overtime unprofitable.

We once produced about 40 percent of the world's steel. We now produce 19 percent. We were once the greatest producer of automobiles, producing more than all the rest of the world combined. That is no longer true, and in addition, the "Big Three," the major auto companies in our land, have sustained tremendous losses in the past year and have been forced to lay off thousands of workers. All of you who are working know that even with cost-of-living pay raises, you can't keep up with inflation. In our progressive tax system, as you increase the number of dollars you earn, you find yourself moved up into higher tax brackets, paying a higher tax rate just for trying to hold our own. The result? Your standard of living is going down.

Over the past decades we've talked of curtailing government spending so that we can then lower the tax burden. Sometimes we've even taken a run at doing that. But there were always those who told us that taxes couldn't be cut until spending was reduced. Well, you know, we can lecture our children about extravagance until we run out of voice and breath. Or we can cure their extravagance by simply reducing their allowance.

It's time to recognize that we've come to a turning point. We're threatened with an economic calamity of tremendous proportions, and the old business-as-usual treatment can't save us. Together, we must chart a different course.

We must increase productivity. That means making it possible for industry to modernize and make use of the technology which we ourselves invented. That means putting Americans back to work. And that means above all bringing government spending back within government revenues, which is the only way, together with increased productivity, that we can reduce and, yes, eliminate inflation.

In the past we've tried to fight inflation one year and then, with unemployment increased, turn the next year to fighting unemployment with more deficit spending as a pump primer. So, again, up goes inflation. It hasn't worked. We don't have to choose between inflation and unemployment—they go hand in hand. It's time to try something different, and that's what we're going to do.

I've already placed a freeze on hiring replacements for those who retire or leave government service. I've ordered a cut in government travel, the number of consultants to the government, and the buying of office equipment and other items. I've put a freeze on pending regulations and set up a task force under Vice President Bush to review regulations with an eye toward getting rid of as many as possible. I have decontrolled oil, which should result in more domestic production and less dependence on foreign oil. And I'm eliminating that ineffective Council on Wage and Price Stability.

But it will take more, much more. And we must realize there is no quick fix. At the same time, however, we cannot delay in implementing an economic program aimed at both reducing tax rates to stimulate productivity and reducing the growth in government spending to reduce unemployment and inflation.

On February 18th, I will present in detail an economic program to Congress embodying the features I've just stated. It will propose budget cuts in virtually every department of government. It is my belief that these actual budget cuts will only be part of the savings. As our Cabinet Secretaries take charge of their departments, they will search out areas of waste, extravagance, and costly overhead which could yield additional and substantial reductions.

Now, at the same time we're doing this, we must go forward with a tax relief package. I shall ask for a 10-percent reduction across the board in personal income tax rates for each of the next 3 years. Proposals will also be submitted for accelerated depreciation allowances for business to provide necessary capital so as to create jobs.

Now, here again, in saying this, I know that language, as I said earlier, can get in the way of a clear understanding of what our program is intended to do. Budget cuts can sound as if we're going to reduce total government spending to a lower level than was spent the year before. Well, this is not the case. The budgets will increase as our population increases, and each year we'll see spending increases to match that growth. Government revenues will increase as the economy grows, but the burden will be lighter for each individual, because the economic base will have been expanded by reason of the reduced rates. Now, let me show you a chart that I've had drawn to illustrate how this can be.

Here you see two trend lines. The bottom line shows the increase in tax revenues. The red line on top is the increase in government spending. Both lines turn upward, reflecting the giant tax increase already built into the system for this year 1981, and the increases in spending built into the '81 and '82 budgets and on into the future. As you can see, the spending line rises at a steeper slant than the revenue line. And that gap between those lines illustrates the increasing deficits we've been running, including this year's \$80 billion deficit.

Now, in the second chart, the lines represent the positive effects when Congress accepts our economic program. Both lines continue to rise, allowing for necessary growth, but the gap narrows as spending cuts continue over the next few years until finally the two lines come together, meaning a balanced budget.

I am confident that my administration can achieve that. At that point tax revenues, in spite of rate reductions, will be increasing faster than spending, which means we can look forward to further reductions in the tax rates.

Now, in all of this we will, of course, work closely with the Federal Reserve System toward the objective of a stable monetary policy.

Our spending cuts will not be at the expense of the truly needy. We will, however, seek to eliminate benefits to those who are not really qualified by reason of need.

As I've said before, on February 18th I will present this economic package of budget reductions and tax reform to a joint session of Congress and to you in full detail.

Our basic system is sound. We can, with compassion, continue to meet our responsibility to those who, through no fault of their own, need our help. We can meet fully the other legitimate responsibilities of government. We cannot continue any longer our wasteful ways at the expense of the workers of this land or of our children. Since 1960 our government has spent \$5.1 trillion. Our debt has grown by \$648 billion. Prices have exploded by 178 percent. How much better off are we for all that? Well, we all know we're very much worse off. When we measure how harshly these years of inflation, lower productivity, and uncontrolled government growth have affected our lives, we know we must act and act now. We must not be timid. We will restore the freedom of all men and women to excel and to create. We will unleash the energy and genius of the American people, traits which have never failed us.

To the Congress of the United States, I extend my hand in cooperation, and I believe we can go forward in a bipartisan manner. I've found a real willingness to cooperate on the part of Democrats and members of my own party.

To my colleagues in the executive branch of government and to all Federal employees, I ask that we work in the spirit of service.

I urge those great institutions in America, business and labor, to be guided by the national interest, and I'm confident they will. The only special interest that we will serve is the interest of all the people.

We can create the incentives which take advantage of the genius of our economic system—a system, as Walter Lippmann observed more than 40 years ago, which for the first time in history gave men "a way of producing wealth in which the good fortune of others multiplied their own."

Our aim is to increase our national wealth so all will have more, not just redistribute what we already have which is just a sharing of scarcity. We can begin to reward hard work and risk-taking, by forcing this Government to live within its means.

Over the years we've let negative economic forces run out of control. We stalled the judgment day, but we no longer have that luxury. We're out of time.

And to you, my fellow citizens, let us join in a new determination to rebuild the foundation of

our society, to work together, to act responsibly. Let us do so with the most profound respect for that which must be preserved as well as with sensitive understanding and compassion for those who must be protected.

We can leave our children with an unrepayable massive debt and a shattered economy, or we can leave them liberty in a land where every individual has the opportunity to be whatever God intended us to be. All it takes is a little common sense and recognition of our own ability. Together we can forge a new beginning for America.

Thank you, and good night.

Source:

Ronald Reagan Presidential Library, Simi Valley, California, p. 79–83.

15. UNITED STATES V. MICROSOFT, 2000

Findings of Judge Thomas Penfield Jackson of the U.S. District Court for the District of Columbia stating that the Microsoft Corporation violated U.S. antitrust laws. Antitrust laws protect consumers against unfair business practices such as price-fixing and monopolizing markets. According to sections one and two of the Sherman Antitrust Act (15 U.S.C.), it is illegal to restrain and to monopolize trade.

Microsoft, founded by Bill Gates and Paul Allen in 1975, is a manufacturer and licenser of computer software based in Redmond, Washington. Microsoft's Windows operating system controls over 90 percent of the personal computer (PC) software market. In May 1998, the U.S. Department of Justice, along with 18 states and the District of Columbia, filed suit against the company for engaging in unfair business practices. In his decision, Judge Jackson determined that Microsoft was a monopoly that actively sought to suppress competition in order to maintain its own substantial share of the software market. Two threats to Microsoft's dominance were Netscape, a browser, or type of software that enables a PC user to access the Internet, and Sun Microsystems, Inc. (Sun), which makes the Java programming language. Jackson charged that Microsoft attempted to crush Netscape to ensure that its own browser, Internet Explorer, would be the predominant software available to consumers. He also found that Microsoft, having determined that software written in Java would become profitable, sought to ensure that any such software would depend upon Microsoft's technologies, rather than Sun's.

Microsoft appealed the decision, but after a U.S. appeals court confirmed Jackson's decision in April 2000, the company was ordered to break into two parts as punishment for violating antitrust laws. This decision was overturned on appeal in June 2001. Federal prosecutors and Microsoft attorneys then began working on a settlement, and in November 2001 the Department of Justice and nine states accepted the proposed settlement. However, another nine states and the District of Columbia rejected the settlement and continued to pursue litigation against the software giant. In November 2002, after Microsoft began to incorporate features into its software that would allow for freer competition, U.S. District Judge Colleen Kollar-Kotelly ruled to accept a revised settlement that loosened Microsoft's hold on the software markets, but allowed the company to remain intact. While this victory was welcome news, the company continues to have legal troubles. In addition to the state-led monopoly cases, Sun Microsystems and AOL Time Warner's Netscape unit have filed private antitrust suits, and a European commission has launched an investigation into Microsoft's efforts to stifle overseas competition in the computer-server and mediaplayer markets. Below is an excerpt of Judge *Iackson's decision.*

VII.

The Effect on Consumers of Microsoft's Efforts to Protect the Applications Barrier to Entry 408. The debut of Internet Explorer and its rapid

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improvement gave Netscape an incentive to improve Navigator's quality at a competitive rate. The inclusion of Internet Explorer with Windows at no separate charge increased general familiarity with the Internet and reduced the cost to the public of gaining access to it, at least in part because it compelled Netscape to stop charging for Navigator. These actions thus contributed to improving the quality of Web browsing software, lowering its cost, and increasing its availability, thereby benefitting consumers.

409. To the detriment of consumers, however, Microsoft has done much more than develop innovative browsing software of commendable quality and offer it bundled with Windows at no additional charge. As has been shown, Microsoft also engaged in a concerted series of actions designed to protect the applications barrier to entry, and hence its monopoly power, from a variety of middleware threats, including Netscape's Web browser and Sun's implementation of Java. Many of these actions have harmed consumers in ways that are immediate and easily discernible. They have also caused less direct, but nevertheless serious and far-reaching, consumer harm by distorting competition.

410. By refusing to offer those OEMs who requested it a version of Windows without Web browsing software, and by preventing OEMs from removing Internet Explorer-or even the most obvious means of invoking it-prior to shipment, Microsoft forced OEMs to ignore consumer demand for a browserless version of Windows. The same actions forced OEMs either to ignore consumer preferences for Navigator or to give them a Hobson's choice of both browser products at the cost of increased confusion, degraded system performance, and restricted memory. By ensuring that Internet Explorer would launch in certain circumstances in Windows 98 even if Navigator were set as the default, and even if the consumer had removed all conspicuous means of invoking Internet Explorer, Microsoft created confusion and frustration for consumers, and increased technical support costs for business customers. Those Windows purchasers who did not want browsing software -businesses, or parents and teachers, for example, concerned with the potential for irresponsible Web browsing on PC systems-not only had

to undertake the effort necessary to remove the visible means of invoking Internet Explorer and then contend with the fact that Internet Explorer would nevertheless launch in certain cases; they also had to (assuming they needed new, nonbrowsing features not available in earlier versions of Windows) content themselves with a PC system that ran slower and provided less available memory than if the newest version of Windows came without browsing software.

By constraining the freedom of OEMs to implement certain software programs in the Windows boot sequence, Microsoft foreclosed an opportunity for OEMs to make Windows PC systems less confusing and more user-friendly, as consumers desired. By taking the actions listed above, and by enticing firms into exclusivity arrangements with valuable inducements that only Microsoft could offer and that the firms reasonably believed they could not do without, Microsoft forced those consumers who otherwise would have elected Navigator as their browser to either pay a substantial price (in the forms of downloading, installation, confusion, degraded system performance, and diminished memory capacity) or content themselves with Internet Explorer.

Finally, by pressuring Intel to drop the development of platform-level NSP software, and otherwise to cut back on its software development efforts, Microsoft deprived consumers of software innovation that they very well may have found valuable, had the innovation been allowed to reach the marketplace. None of these actions had pro-competitive justifications.

411. Many of the tactics that Microsoft has employed have also harmed consumers indirectly by unjustifiably distorting competition. The actions that Microsoft took against Navigator hobbled a form of innovation that had shown the potential to depress the applications barrier to entry sufficiently to enable other firms to compete effectively against Microsoft in the market for Intel-compatible PC operating systems. That competition would have conduced to consumer choice and nurtured innovation. The campaign against Navigator also retarded widespread acceptance of Sun's Java implementation.

This campaign, together with actions that Microsoft took with the sole purpose of making it difficult for developers to write Java applications with technologies that would allow them to be ported between Windows and other platforms, impeded another form of innovation that bore the potential to diminish the applications barrier to entry. There is insufficient evidence to find that, absent Microsoft's actions, Navigator and Java already would have ignited genuine competition in the market for Intel-compatible PC operating systems. It is clear, however, that Microsoft has retarded, and perhaps altogether extinguished, the process by which these two middleware technologies could have facilitated the introduction of competition into an important market.

412. Most harmful of all is the message that Microsoft's actions have conveyed to every enterprise with the potential to innovate in the computer industry. Through its conduct toward Netscape, IBM, Compaq, Intel, and others, Microsoft has demonstrated that it will use its prodigious market power and immense profits to harm any firm that insists on pursuing initiatives that could intensify competition against one of Microsoft's core products. Microsoft's past success in hurting such companies and stifling innovation deters investment in technologies and businesses that exhibit the potential to threaten Microsoft. The ultimate result is that some innovations that would truly benefit consumers never occur for the sole reason that they do not coincide with Microsoft's self-interest.

> Thomas Penfield Jackson U.S. District Judge Date: November 5, 1999

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