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Cotton Production and Support in the United States

Jasper Womach, Resources, Science, and Industry Division

June 24, 2004

Abstract. This report explains the various cotton subsidy programs and provides quantitative data on market revenues, production costs, and the size of the subsidies. Also, it characterizes the relative position of the United States vis-a-vis other countries as a producer, exporter and importer of cotton. The purpose of this examination is to provide U.S. policy makers with a complete overview of U.S. cotton production and the federal programs that support that production.

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Summary

While cotton, along with other major crops, has been subsidized by the U.S. federal government since the 1930s, cotton subsidies are now in the focus of an international spotlight. The nature and extent of these subsidies have become a roadblock in negotiating multilateral and bilateral trade agreements. Sharp criticism came from the West and Central African countries during various Doha Round meetings. Also, efforts to create a Free Trade Area of the Americas (FAA) foundered at least partially over U.S. cotton subsidies. Now, Congress is watching to see if the United States will be required by the World Trade Organization (WTO) to revise its cotton subsidies in response to a dispute lodged by Brazil.

One reason the international spotlight is on U.S. cotton subsidies, in contrast to other subsidizing nations, is the sheer size of U.S. cotton production and exports. The United States is the second-largest producer of cotton in the world, and the largest exporter. Therefore, U.S. cotton subsidies have global repercussions. Domestically, what happens to cotton subsidies is important to a broad group of interests because grains, oilseeds, and peanuts receive similar support.

U.S. cotton production and export subsidies provide comprehensive support for producers. Farmers with a history of cotton production are eligible for direct and counter-cyclical payments. On their actual production, farmers may utilize the marketing loans and loan deficiency payments. Protection against low yields is available through subsidized crop insurance, and in some years Congress has approved additional disaster payments. When U.S. market prices rise, and there is a risk that competitors might capture more of the world export market and even deliver to U.S. yarn and fabric mills, so-called Step 2 user payments are made to U.S. exporters and mills if they purchase U.S. cotton.

From 1991 through 2003 farm subsidies for cotton production have cost $1.76 billion per year, on average. This is the annual equivalent of $0.21/lb. of U.S. production. While the United States is not alone in subsidizing cotton, this level of support is nearly the highest in the world, according to the International Cotton Advisory Committee.

When the $0.21/lb. average crop year farm subsidy is added to the $0.57/lb. average market price, it has given producers an average revenue of $0.78/lb. from 1991 through 2003. This level of revenue is more than enough to cover average variable cash costs of $0.50/lb., and just enough to cover average total economic costs of $0.78/lb. According to the International Cotton Advisory Committee, variable cash costs of some of the competing cotton exporting nations are about half those of the United States.

This report will not be updated.

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The federal government has long provided support to U.S. producers of cotton (as well other major crops) that amounts to a substantial share of their revenue in some years. Some competing countries, particularly developing countries that lack the resources to subsidize their farmers, recently have become highly critical of U.S. and European Union (EU) farm subsidies.

Tensions over farm subsidies are said to be a major reason for the failure of the September 2003 Cancun Ministerial Conference of the WTO to reach a framework agreement on agricultural trade liberalization. A group of 21 developing countries, the G-21 led by Brazil, demanded greater reductions in domestic farm subsidies than the United States or the European Union were prepared to accept.

The West and Central African (WCA) cotton-producing countries propose that all export and production-related subsidies be eliminated by the end of four years. The United States takes the position that cotton subsidies should not be singled out but should be included in the overall negotiations on agriculture. However, the United States has agreed to address the "African cotton initiative" at the upcoming Doha Development Agenda meeting, although there is no agreement yet on how to approach it. (See CRS Report RS21712, *The African Cotton Initiative and WTO Agriculture Negotiations*.)

Brazil lodged an action in the WTO, arguing that U.S. cotton subsidy programs unfairly encourage production and depress world market prices, thereby causing harm to Brazilian cotton producers and exporters. The WTO Dispute Settlement Panel issued a confidential interim report on April 26 and final report on June 18. 2004. Reportedly, the document, which has not been publicly released, is critical of several U.S. subsidy programs that apply to cotton as well as other commodities. Allowing for the appeals process, a final ruling by WTO may not be issued until late November 2004. (See CRS Report RS21715, *U.S.-Brazil WTO Cotton Subsidy Dispute*.)

Countering the objections of the international critics, officials of the National Cotton Council of America (representing producers, ginners, warehousers, merchants, cottonseed crushers, cooperatives and textile manufacturers) contend that the current cotton support programs provide both stability and a counter-force to production and export subsidies in other countries. That the federal government provides cotton growers with stability is borne out by the comprehensive character of price support, indemnities for yield losses, import protection, and export promotion described in this report. Whether foreign production and export subsidies are a threat to U.S. producers is less obvious, since the foreign countries providing subsidies to their farmers are net importers and among the largest buyers of U.S. cotton.

This report explains the various cotton subsidy programs and provides quantitative data on market revenues, production costs, and the size of the subsidies. Also, it characterizes the relative position of the United States vis-a-vis other countries as a producer, exporter and importer of cotton. The purpose of this examination is to provide U.S. policy makers with a complete overview of U.S. cotton production and the federal programs that support that production.

Cotton Production and Market Revenue

Cotton Production

Nationally, according to the Census of Agriculture, there were 24,805 U.S. farms producing cotton in 2002.[1] Out of this total, nearly 60% (14,476 farms) were classified as specialized cotton farms (because half or more of their commodity sales were cotton), and this group produced 70% of that year's total cotton crop. In 2003, 12.1 million harvested acres produced an estimated 18.255 million 480-pound bales of cotton lint (3.97 million metric tons), or 725 lbs. per acre.[2] If the marketing year farm price averages $0.638/lb., the farm value of the 2003 crop will be about $5.5 billion.

With calendar year 2003 estimated cash receipts for lint and seed at $5.5 billion, cotton will account for 5.1% of estimated total receipts from all U.S. crops ($106.7 billion) and 2.5% of total crop and livestock receipts ($212.4 billion). Other leading crops were corn (71.1 million acres, and $18.7 billion in receipts), soybeans (72.3 million acres, and $15.7 billion in receipts), wheat (52.8 million acres, and $6.8 billion in receipts), and rice (3.0 million acres, and $1.1 billion in receipts).[3]

The leading seven cotton-producing states accounted for 80% of total production in 2003: Texas, 24%; Georgia, 12%; Mississippi, 12%; California, 10%; Arkansas, 10%; North Carolina, 6%; and Louisiana, 6%.[4] **Figure 1** illustrates the cotton-producing regions.

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[1] Both upland and extra-long staple (ELS) cotton are produced in the United States. However, ELS cotton usually accounts for less than 4% of total cotton production. ELS cotton also is called American Pima cotton. ELS cotton is produced largely in California.

[2] Harvested acreage data are from NASS, USDA, *Crop Production 2003 Summary*, January 2004.

[3] Cotton price and value of production data are from USDA, NASS, *Crop Values 2003 Summary*, February 2004. Cash receipts forecasts as of January 20, 2004, are from ERS, USDA, farm income website, at [http://www.ers.usda.gov/Briefing/FarmIncome/].

[4] Calculated from data in NASS, USDA, Crop Production 2003 Summary, January 2004.

Figure 1. U.S. Cotton-Producing Regions

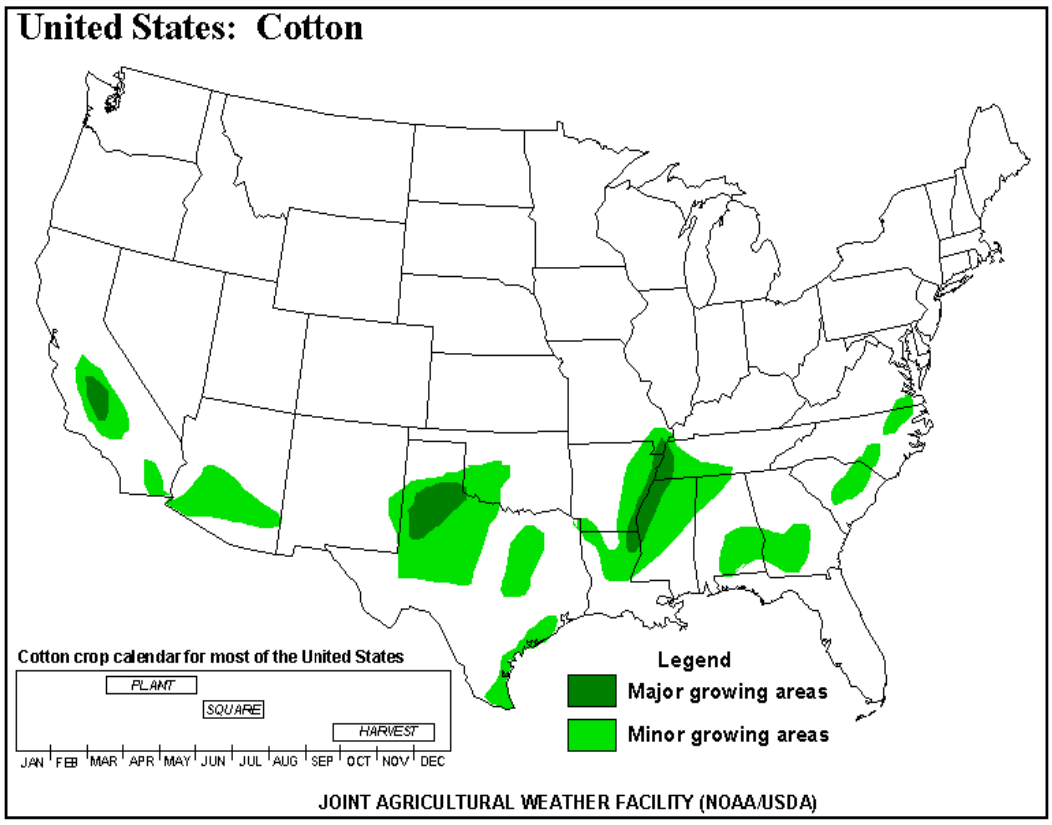
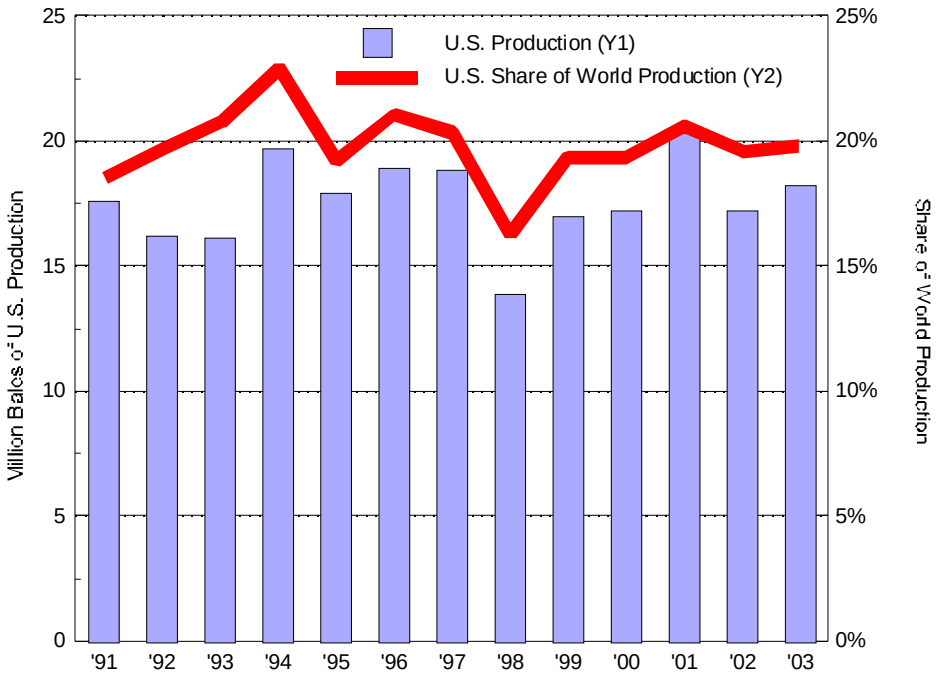


Figure 2 shows annual U.S. cotton production since 1991, and the U.S. share of world production. Annual average U.S. production since 1991 is 16.8 million bales (weighing 480 pounds per bale), ranging from a low of 13.9 million bales to a high of 20.3 million bales. The U.S. share of world production has averaged 20% since 1991, ranging from a low of 16% to a high of 23%. This recent history differs little from that of the past 30 years. Since 1971, the U.S. average share of world production is 19% and the range has been from a low of 12% to a high of 23%.[5]

[5] Calculated from data published by USDA, ERS, Cotton and Wool Situation and Outlook Yearbook, November 2003.

Figure 2. U.S. Cotton Production

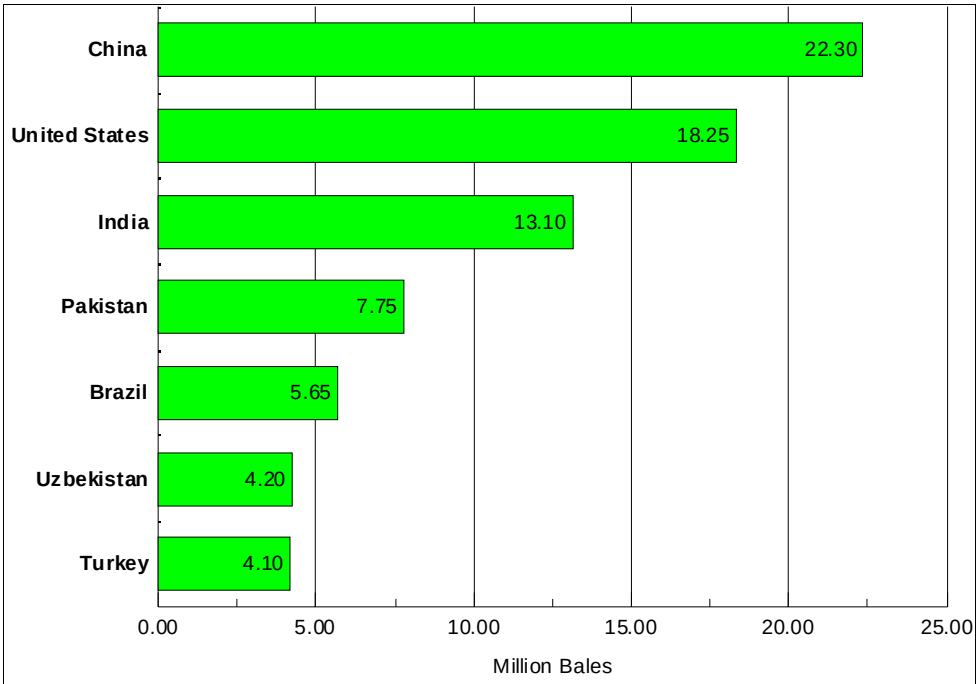


Source: USDA, ERS, Cotton and Wool Situation and Outoook Yearbook, November 2003, and current data from FAS.

The United States is the world's second largest cotton producer, behind China (see **Figure 3** and **Appendix Table 2**). While some 80 countries are forecast to produce about 93 million bales of cotton in the 2003/04 marketing year, the leading seven countries account for about 75 million bales, or 80% of world production. Among these leading producing nations, only the United States, Brazil, and Uzbekistan are net exporters. The others are net importers of cotton as well as leading cotton producers.

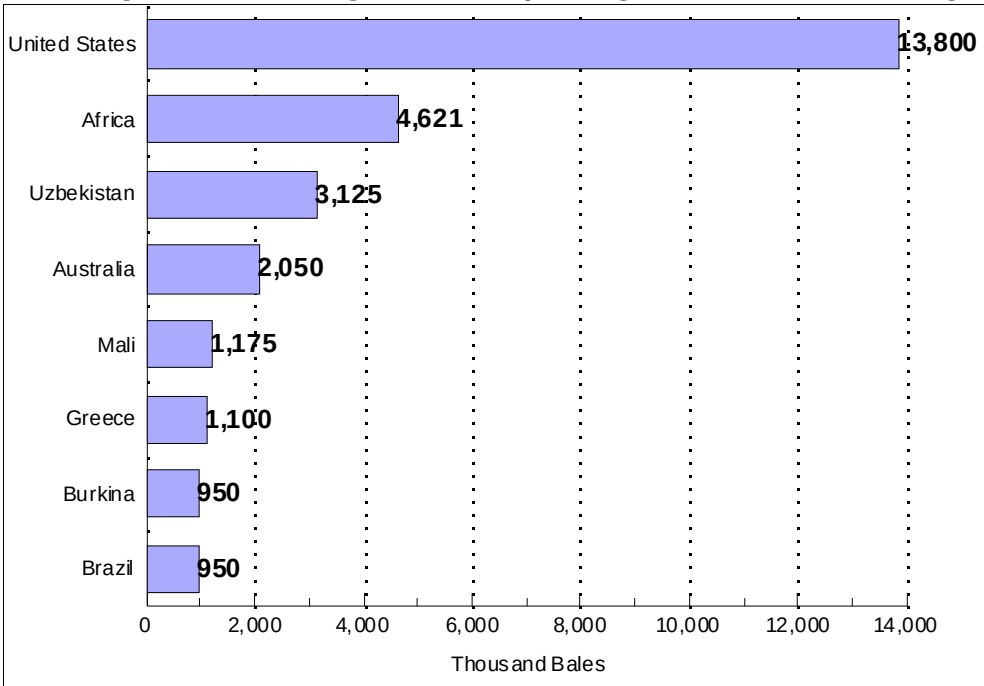
The United States dominates all other cotton exporting countries (**Figure 4** and **Appendix Table 2**). Expected U.S. exports of 13.8 million bales constitute 42% of total world exports in marketing year 2003/04. The second largest single country exporter is Uzbekistan at 3.1 million bales, holding 10% of the world share. The 13 countries of West and Central Africa (WCA), with an export volume of 4.621 million bales, account for 13% of the world total. Such major cotton producers as China, India, and Pakistan also are importers of cotton to meet the needs of their yarn, fabric, and textile manufacturing industries.

Figure 3. Leading Cotton Producing Countries, Marketing Year 2003/04



Source: USDA, FAS, Cotton: World Markets and Trade, June 2004.

Figure 4. Leading Cotton Exporting Countries, Marketing Year 2003/04



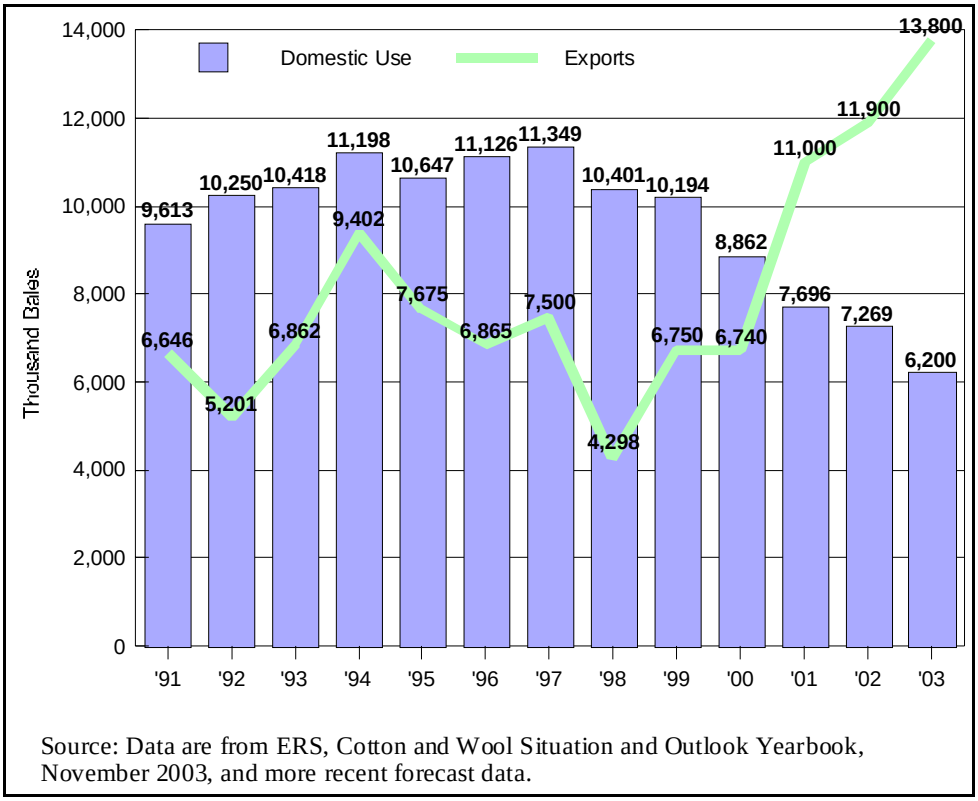
Total world exports are 32,992 thousand bales.
The African countries included here are the West and Central African countries listed in appendix Table 2.

Source: Data are from FAS, Cotton World Markets and Trade, June, 2004.

Domestic Use and Exports of U.S. Cotton

The United States is itself a large user of its own cotton. At 6.2 million bales, domestic use accounted for 32% of combined domestic and export use in the 2003/04 cotton marketing year. However, domestic manufacturing of cotton fabric and yarn has been declining rapidly while foreign manufacturing has increased. On the other hand, for the past three years exports have risen rapidly and to record levels as manufacturing has expanded overseas. In the 2003 marketing year, U.S. cotton exports are expected to reach 13.8 million bales, constituting 68% of total use. **Figure 5** graphically portrays the market shift in deliveries from domestic to foreign users.

Figure 5. Domestic Mill Use and Exports of U.S. Cotton, by Crop Year



Source: Data are from ERS, Cotton and Wool Situation and Outlook Yearbook, November 2003, and more recent forecast data.

Observers may question whether cotton support and export promotion programs are contributing to the decline in U.S. cotton manufacturing. However, by design the direct and counter-cyclical payments as well as the marketing loan provisions do not raise the market price for U.S. cotton or constrain production. To the contrary, the subsidies support the income of producers and enable them to incur variable and fixed production costs when market prices are low. As shown in **Figure 2**, U.S. cotton production did not drop in response to low market prices in 1999 through 2002. In fact, average annual production increased after the price drop in 1999 compared to production levels in the higher price years prior to 1999.

The United States does have tariff barriers to discourage domestic manufacturers from importing lower-priced world cotton. These barriers are

intended to protect U.S. cotton producers from foreign competition. At the same time, Cotton User Marketing Certificates (also called Step 2 Payments), Special Import Quotas, and the Limited Global Import Quota are designed to benefit U.S. yarn and fabric manufacturers by partially offsetting domestic supply shortages or higher U.S. cotton prices.

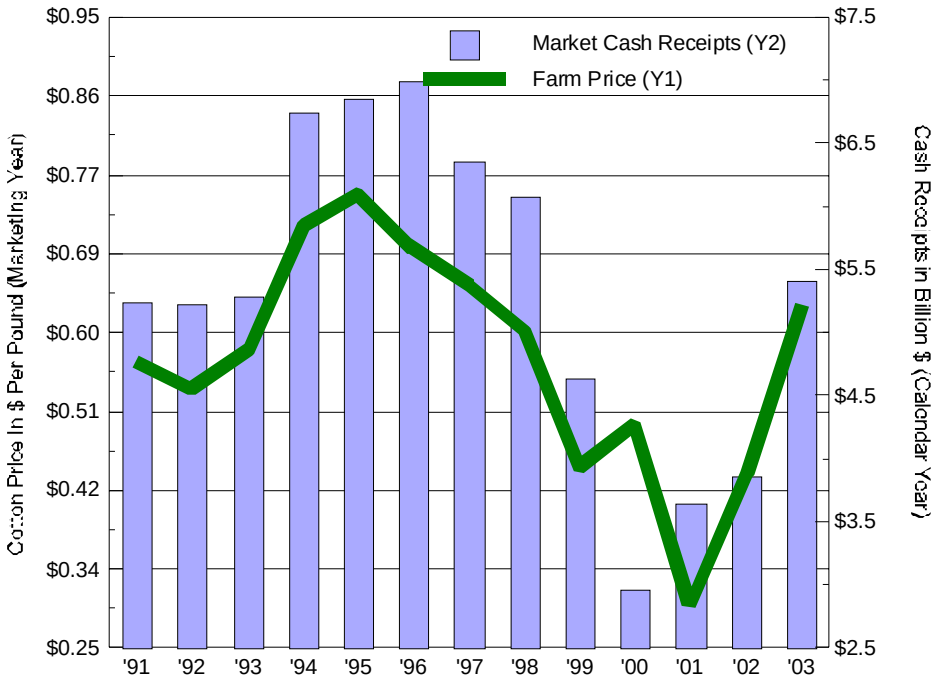
The factors thought to be most important in the decline in U.S. textile and fabric manufacturing are increased import competition and the scheduled phase-out of quotas on textiles and apparel in January 2005. Efforts to boost economic growth in poorer regions of the world have contributed to the import competition. The Caribbean Basin Economic Recovery Act (CBERA) (Title II of P.L. 98-67), the Andean Trade Preference Act (P.L. 102-182), and the African Growth and Opportunity Act (Title I of P.L. 106-200), were initial measures to help those regions. The last two Congresses have expanded the benefits accorded in those measures. (See CRS Report RL31723, *Textile and Apparel Trade Issues*, January 6, 2004.)

U.S. Market Prices and Farm Cash Receipts

U.S. farm-level cotton prices are determined by world supply and demand conditions, which are substantially influenced by U.S. cotton production and U.S. demand for cotton textiles. Supply, which is subject to farmers' planting and management decisions as well as the vagaries of weather and pests, is variable, particularly at the individual farm level. Demand also is unstable since it is subject to all of the forces that shape consumer purchases, including competing fibers such as wool and synthetics. Imbalances between supply and demand are reflected in price changes. **Figure 6** shows average marketing year upland cotton prices and calendar-year cash receipts received by U.S. farmers from the sale of all cotton lint and seed from 1991 through 2003.

Over the 13-year period from 1991 through 2003 shown in the graph, farm prices averaged $0.57/lb. However, this time frame is particularly unstable, with the annual average farm price reaching a record high of $0.75 for marketing year 1995 and then dropping to $0.30 for marketing year 2001. A drop this low had not been seen since 1972, when it averaged $0.27. The price swing, which occurred during the 1990s, falling from record or near-record highs to lows nearly as extreme, was not unique to cotton. During this time period, other agricultural commodities showed similar price swings in response to short supplies and strong demand followed by increased production but declining demand due to financial crises in large parts of Asia, South America, and Russia.

Figure 6. Cotton Prices and U.S. Farm Cash Receipts



Price data are for the August through July marketing year, while cash receipts are for the calendar year.

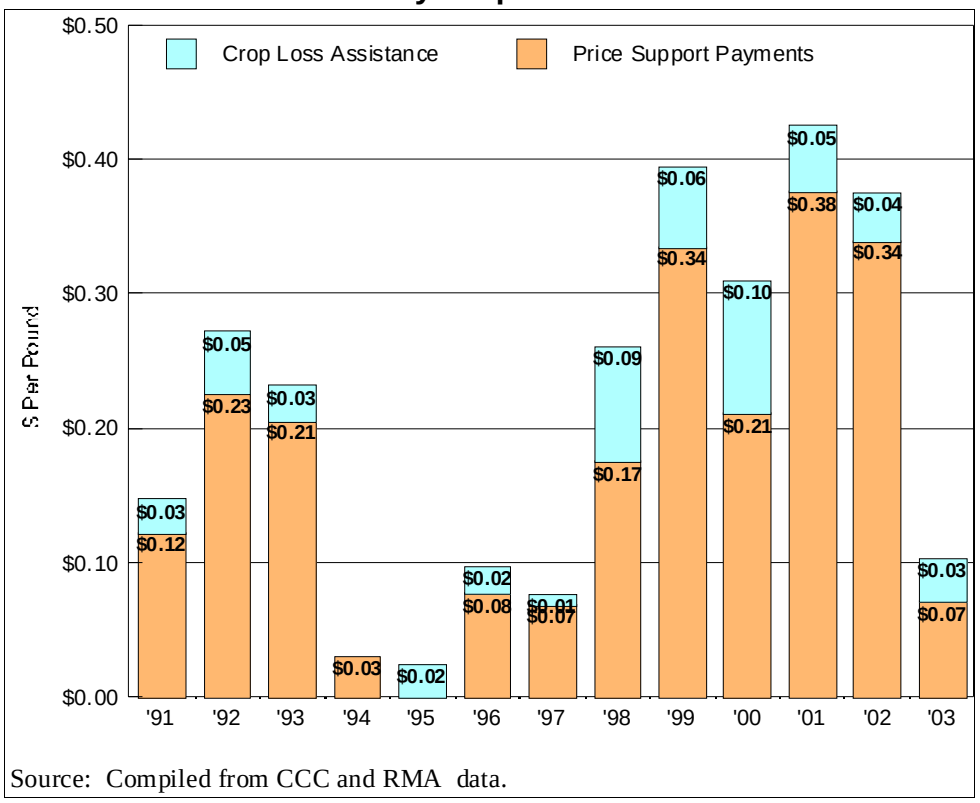
Source: USDA, ERS historical and forecast data.

Cotton Production Subsidies

U.S. Farm Subsidies

The various programs categorized in this report as price support and crop loss assistance directly support farm income, mostly as direct payments to farms and as crop insurance indemnity payments above and beyond the premiums paid by farmers. In most cases the programs are designed to offset either low market prices or low yields. Detailed explanations of the various farm subsidy programs and export subsidy programs, along with expenditure data are presented in the appendix of this report. Total cotton subsidy payments to farmers averaged $0.21/lb. ($0.17 for price support and $0.04 for crop loss assistance) from crop year 1991 through 2003 (See **Figure 7**).

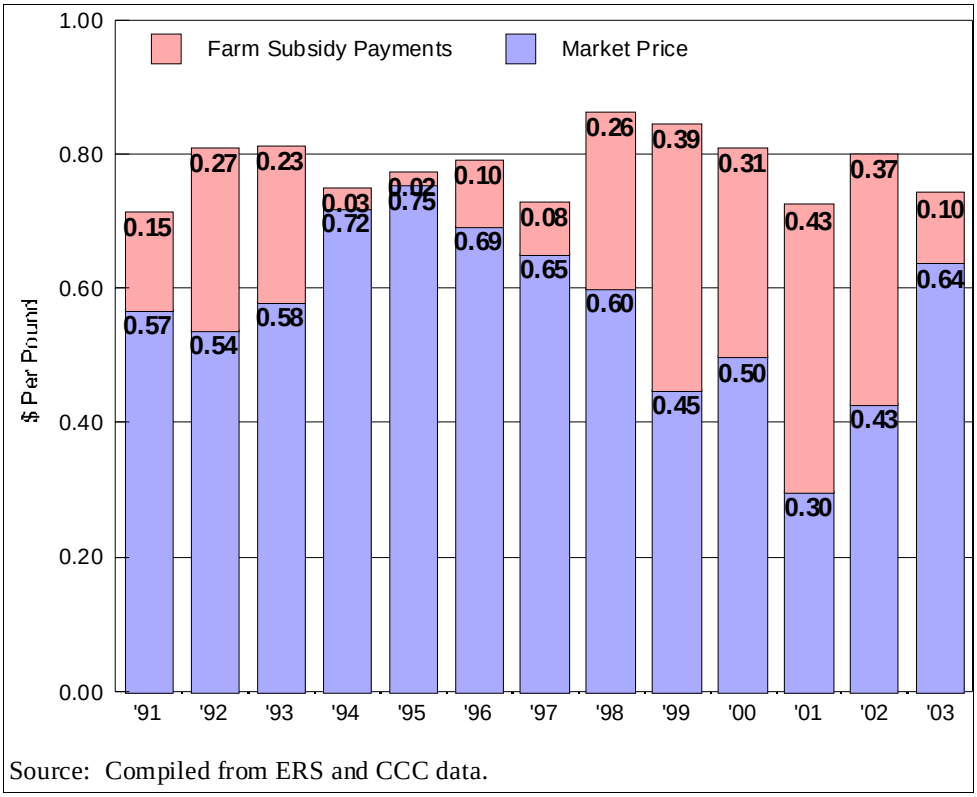
Figure 7. U.S. Price Support and Crop Loss Assistance, by Crop Year



Source: Compiled from CCC and RMA data.

The practical result of these farm subsidies is that they stabilize the revenue of cotton farmers. **Figure 8** demonstrates this by adding subsidy payments per pound of production to the average price received for cotton. The average price received by farmers was $0.57 for crop years 1991 through 2003. Therefore, the combined annual average value of the market price and the farm subsidy was $0.78/lb., ranging from a low of $0.71 to a high of $0.86.

Figure 8. Cotton Producer Subsidy Payments Add to Market Prices Each Crop Year to Raise and Stabilize Farmer Revenue



Source: Compiled from ERS and CCC data.

Foreign Subsidy Expenditures

The United States is not the only nation that subsidizes the production and marketing of cotton. However, data published by the International Cotton Advisory Committee (ICAC)[6] indicate that it is one of the largest. Subsidies per unit were largest in Spain ($1.04/lb.) and Greece ($0.77/lb.), followed by the United States ($0.31/lb) for the 2001/02 crop. Spain and Greece are comparatively small producers (107,000 metric tons and 435,000 metric tons respectively) compared to the United States (4,420,000 metric tons). In terms of total subsidy cost, the United States ranks highest at $3,001 million, followed by China at $1,196 million, Greece at $735 million, and India at $500 million (**Table 1**).[7]

[6]ICAC is an association of more than 40 governments of cotton producing, consuming and trading countries. It serves as a clearinghouse for technical information on cotton production and as a forum for discussion of cotton issues of international significance. The United States is represented by the USDA, Foreign Agricultural Service (FAS), in ICAC. See [http://www.icac.org/icac/english.html].

[7]Income and price support data published by ICAC on the United States differ from that developed elsewhere in this report. The ICAC total income and price support number for the USA does not include market loss payments. Based on data developed elsewhere in this report, USA price support payments, including market loss payments, totaled $3,666 million for the 2001/02 crop, or $0.38/lb.

Table 1. World Direct Government Assistance to Cotton Production, by Country, 2001/02

Country	Production	Assistance Per Lb.	Total Assistance*
	1,000 Metric Tons	$/lb	Million $
USA	4,420	$0.31	$3,001
China	5,320	$0.10	$1,196
Greece	435	$0.77	$735
India	2,686	$0.08	$500
Spain	107	$1.04	$245
Turkey	922	$0.03	$59
Egypt	317	$0.03	$23
Benin	172	$0.05	$20
Mexico	92	$0.09	$18
Mali	240	$0.03	$14
Brazil	766	$0.01	$10
Colombia	26	$0.16	$9
Cote d'Ivoire	173	$0.02	$8
Argentina	65	$0.05	$7
Total for the Subsidizing Countries	15,741	$0.17	$5,844

Source: International Cotton Advisory Committee, Production and trade Policies Affecting the Cotton Industry, Washington, DC, September 2003.
* Income and price support only.

According to the ICAC report, some countries that provided assistance in 2001/02 did so on an emergency basis for that year only and do not maintain ongoing price support or income support programs for cotton.

Costs of Cotton Production

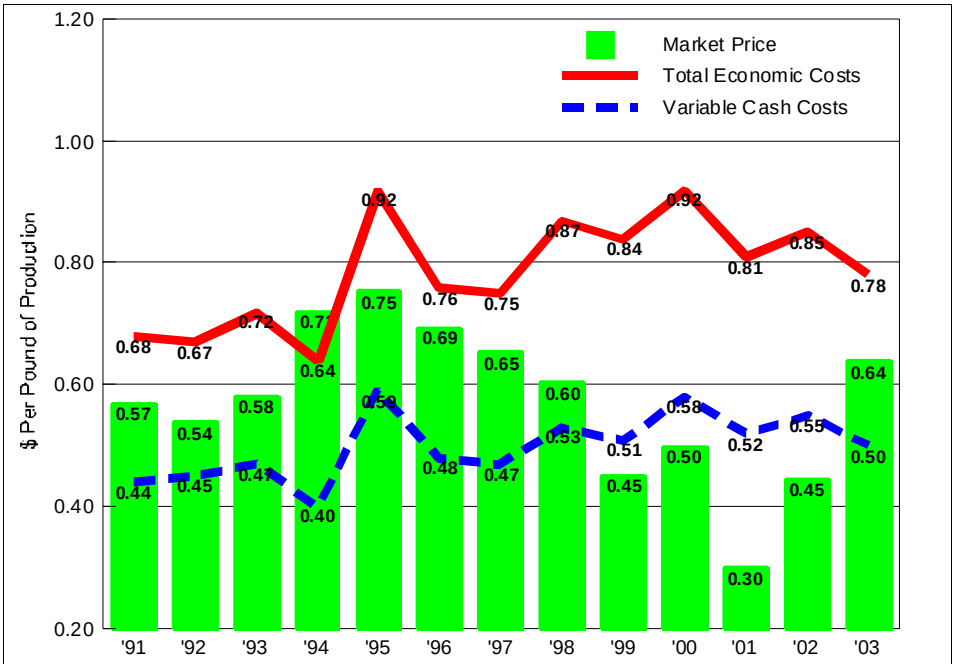
U.S. Costs of Production

Production costs usually are divided into categories of variable cash costs and fixed costs.[8] U.S. variable cash costs of cotton production have shown some movement above and below their $0.50/lb. average over the past 13 years (**Figure 9**). Variable cash costs (such as seed, fertilizer, chemicals, fuel, and repairs) typically are selected for examination because they largely are under the control of the farm operator and vary with the intensity of the production effort. Revenue must at least cover variable cash costs or the farming enterprise cannot be sustained for very long. Fixed costs, which have averaged about $0.29/lb., include depreciation of equipment

[8]It should be recognized that the use of national average cost of production data obscure a wide range of costs differences between regions and even more so between individual farms.

and buildings ($0.15/lb), land ownership and rental costs ($0.08/lb),[9] taxes and insurance ($0.03/lb.), and general farm overhead ($0.03/lb.) An allowance for unpaid family labor is excluded from this analysis.

Figure 9. U.S. Costs of Cotton Production Compared to Season Average Prices Received by Farmers



Source: Primary data from ERS, with forecast years by Global Insight. Per pound calculations by author. Total costs exclude unpaid family labor.

Since 1991, cash variable costs have averaged $0.50/lb. while season average market prices have averaged $0.57. While, on average, variable cash costs were more than covered by market prices, there was not enough to pay for the remaining fixed costs. In addition, for crop years 1999 through 2002, variable costs exceeded market prices. However, subsidies are another source of revenue for cotton producers, as well as producers of other major crops, that enable them to cover costs when market prices are low (described in a later section).

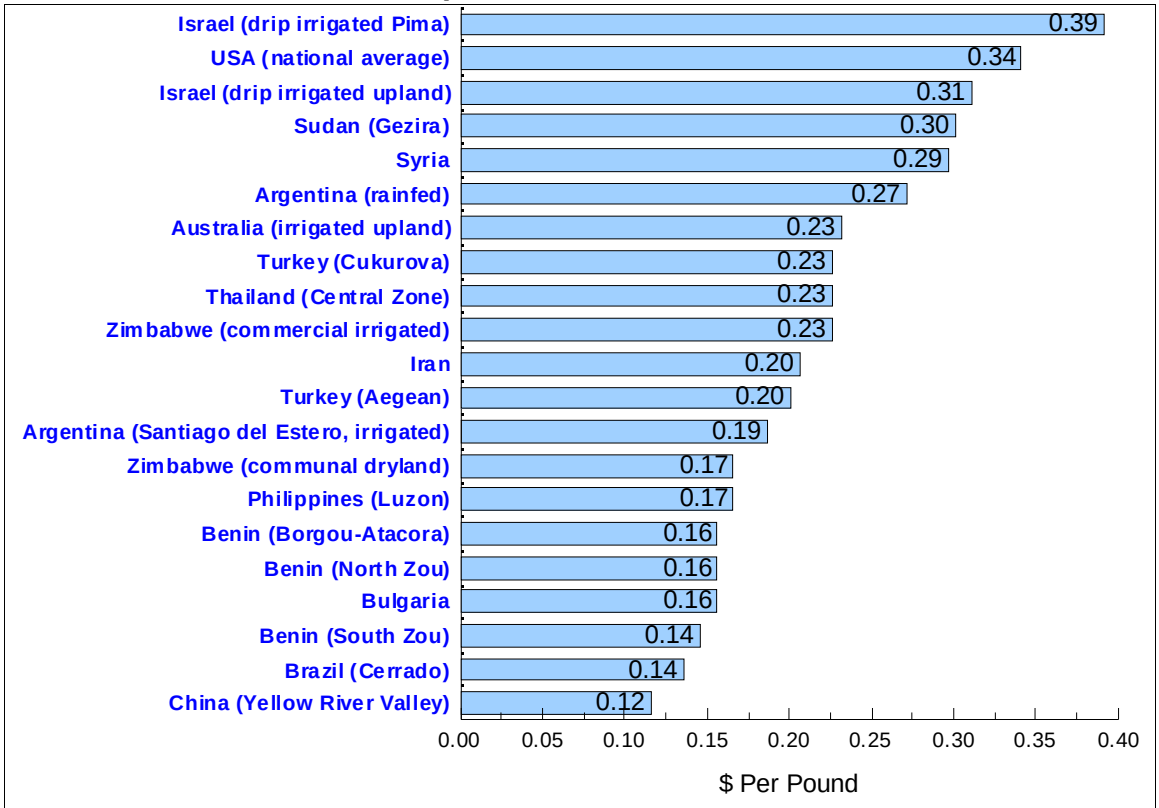
International Cost of Production Comparisons

Cost of production comparisons among countries are made by the International Cotton Advisory Committee (ICAC) based on survey data supplied by participating member countries. While there are problems of data comparability between countries, the numbers do indicate that U.S. costs of production rank near the top (see

[9]The 1991-2003 average land cost per planted acres was $45.10.

Figure 10).[10] Also, U.S. costs may be about double or more than costs in Brazil and some of the African countries that compete with the United States in export markets. It is beyond the scope of this report to examine why there are differences in production costs between countries, but some of the explanations include differences in yields, land costs, labor costs, fertilizer costs, and ginning costs.[11]

Figure 10. U.S. Costs of Cotton Production Rank High Compared to Other Nations



Costs are for 2000/01, except 1999/00 for USA and Australia. Costs exclude land rent and cottonseed value.

Source: Primary data from International Cotton Advisory Committee, Survey of the Cost of Production of Raw Cotton, September 2001.

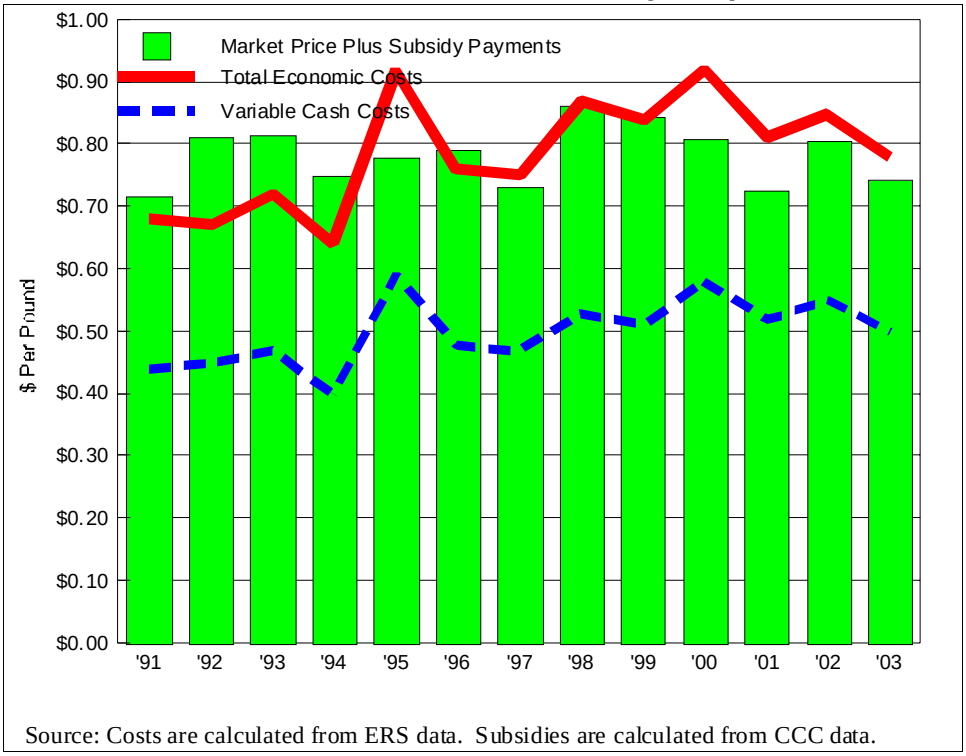
[10] As the report states, "Differences in production practices, variations in the input supply systems among countries and direct and indirect technical and financial support to farmers in the form of free seed, technical advice, etc., makes comparisons difficult among counties." Some countries, but not all, calculate opportunity costs for capital and family labor, and cotton seed (a co-product of lint) is accounted for differently among countries. For these reasons ICAC recommends that land rent and seedcotton value be excluded from inter-country comparisons.

[11] The International Cotton Advisory Committee, *Survey of the Cost of Production of Raw Cotton*, September 2001, provides country-by-country itemized cost data.

Comparing U.S. Crop Year Farm Revenue with Production Costs

Over the 13-year period 1991 through 2003, U.S. farm cotton revenues annually averaged $0.78/lb. ($0.57 from the marketplace plus farm subsidy payments of $0.21). In comparison, annual variable cash costs of production averaged $0.50/lb., and total economic costs averaged $0.78/lb. (See **Figure 11**.) The substantial contribution cotton subsidies play in helping cover production costs explains their importance to farmers. In the absence of support programs, the data suggest a sizeable proportion of cotton would not be profitable.

Figure 11. Cotton Revenue Compared to Variable and Total Economic Costs of Production, by Crop Year



Source: Costs are calculated from ERS data. Subsidies are calculated from CCC data.

Challenges to U.S. Cotton Subsidies

The 1994 WTO Agriculture Agreement developed in the Uruguay Round brought all agricultural products listed in the agreement under more effective multilateral rules and commitments, including "tariff bindings." It prohibits subsidies that exceed negotiated limits for specific products, and it specifies graduated reductions in domestic support. However, this Agreement was seen only as a beginning for reductions in protection and trade-distorting support. Article 20 of the Agriculture Agreement committed members to start negotiations on continuing the reform effort.

This commitment was fulfilled when the United States and other WTO members began a new round of multilateral trade negotiations, called the Doha Development Agenda (DDA.), in November 2001. The objectives for agricultural trade

liberalization are to substantially improve market access for agricultural products, reduce and phase out export subsidies, and substantially reduce trade-distorting (production inducing) domestic support. One step in the negotiations was to agree on a "framework" for the agriculture negotiations at a ministerial meeting in Cancun in September 2003.

Just prior to the Cancun meeting the United States and the EU reached agreement on a proposed framework for the agriculture negotiations. This provoked a group of 21 developing countries (that included, among others, Argentina, Brazil, China, and India) to make a counterproposal (called the G-21 framework) that called for deeper cuts in developed country domestic support, the elimination of export subsidies, and preservation of special and differential treatment for their own subsidies and tariffs. This standoff reflected the continuing differences between developed and developing countries, and U.S. support for cotton was viewed as symbolic of the differences between the two groups. Developed (U.S. and EU) and developing (G-21) nations' differences over cotton contributed to the failure to reach agreement on a framework for the agriculture negotiations.

Four African cotton-exporting countries — Benin, Burkina Faso, Chad, and Mali — proposed an end to global trade-distorting subsidies for cotton within three years with transitional compensation to be paid to producers. The United States, in response, proposed a global sectoral initiative for cotton and textiles that would have addressed subsidies for cotton and textiles, tariffs on fibers, textiles and clothing, nontariff and other barriers in the fiber sector. A compromise on cotton the cotton issue could not be reached at the September 2003 Cancun ministerial conference and negotiations broke down. (See CRS Report RS21715, *The African Cotton Initiative and WTO Agricultural Negotiations*.)

Earlier, in December 2002, Brazil initiated a dispute settlement case (DS267) at the WTO against the U.S. cotton program. Brazil charges that U.S. cotton subsidy outlays have exceeded U.S. commitments to the WTO, which causes overproduction and higher exports that cause serious injury to the Brazilian cotton sector. U.S. trade officials argue that the subsidies provided to U.S. cotton growers have been within the allowable WTO limits and are consistent with U.S. WTO obligations. Consultations between the two countries failed to resolve the dispute and a Dispute Settlement Panel was formed on March 18, 2003, to review the charges. (See CRS Report RS21715, *U.S.-Brazil WTO Cotton Subsidy Dispute*.)

Brazil also argues that the "Step 2" provisions of the U.S. cotton program, as well as the favorable terms provided under U.S. export credit programs and the Market Access Program (MAP), function as export subsidies and are inconsistent with U.S.-WTO obligations regarding export subsidies. The United States considers Step 2 payments as part of its domestic support program since they are targeted to domestic cotton users as well as exporters and reports the payments as "amber" box (trade-distorting) domestic support payments. U.S. trade officials also contend that both the U.S. export credit (GSM) programs and MAP are consistent with WTO obligations.

Key to Brazil's case is the argument that the United States is no longer exempt from WTO dispute proceedings under the so-called "peace clause" (Article 13) of the

WTO's Agreement on Agriculture. Article 13 exempts domestic support measures from being challenged as illegal subsidies as long as the level of support remains at or below the benchmark 1992 marketing year (MY) levels. Brazil argues that U.S. cotton subsidies were about $2 billion in MY1992 compared with over $4 billion in MY2001. Therefore, Brazil argues that the United States is no longer in compliance with the requisite conditions and can no longer seek protection under the WTO's peace clause rule.

The Dispute Settlement Panel released its confidential interim report to Brazil and the United States on April 26, 2004. News reports suggest at least a partial finding against the United States. The panel's final report was released confidentially to the disputing parties on June 18, 2004, but the ruling is not expected to be made public until late August. If the ruling is unfavorable, as expected, the United States likely will appeal, which would extend the process until mid- to late November 2004. Resolution of the WTO case in Brazil's favor could result in a WTO decision concerning implementation of U.S. cotton program provisions. Noncompliance with such a decision on the part of the United States could result in compensation to Brazil, or possible limited trade sanctions against U.S. cotton or other exports.

U.S. agricultural subsidies and import barriers in general and for cotton in particular have become a complicating factor in negotiating a Free Trade Area of the Americas that would encompass 34 countries. Brazil and the United States co-chair the Trade Negotiating Committee, which is responsible for directing nine negotiating groups, one of which is agriculture. Differences between Brazil and the United States typify an underlying challenge. The United States has a relatively low average tariff compared to Brazil and so is pushing for broad tariff reduction. Brazil and other Latin American countries are pressing the case that the United States should relax use of its trade remedy laws, curtail domestic subsidies for farmers, and lower peak tariffs related to quotas. For many Latin American countries, agricultural trade is at the forefront of concerns, given the importance that it plays in their economies. However, the United States does not want to address its agriculture policies in a regional FTAA, preferring that this be part of the global Doha Round negotiations. (See CRS Report RL30935, *Agricultural Trade in the Free Trade Area of the Americas*.)

In each of the challenges described here, cotton is the focus for policies that apply to grains and oilseeds as well. Thus, if the United States is forced to make changes to cotton programs, such changes can be expected to support programs that affect much of U.S. crop production.

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Appendix. U.S. Cotton Support Programs

Price Support Programs

To stabilize and support farm incomes, in the face of highly variable prices caused by fluctuating world supply and demand conditions, major crops produced in the United States, including cotton, have been subsidized since the 1930s. Most recently, the 2002 farm bill (P.L. 107-171) authorized a price support framework that provides three unique subsidy mechanisms for upland cotton and other covered commodities (including wheat, corn, sorghum, barley, oats, rice, soybeans and other oilseeds, and peanuts). By design, none of the three support mechanisms raises the market price of cotton. However, they do raise the effective price received by farmers and so are called "price support" programs. The three support mechanisms available to producers include (1) marketing assistance loans, (2) direct payments, and (3) counter-cyclical payments.

Marketing Assistance Loan Program. Upland cotton producers are eligible for the minimum national average price of $0.52/lb. under the *market assistance loan program* on all they produce. ELS cotton producers are eligible for the minimum national average price of $0.7977/lb. under the marketing assistance loan program, but are not eligible for other support payments.

Farmers with harvested cotton can use the stored commodity as collateral for a nonrecourse marketing assistance loan from the U.S. Department of Agriculture's Commodity Credit Corporation (CCC). The farmer has the choice of repaying the loan in full (plus interest) in order to recover clear title, which is commonly done when market prices are higher than the loan rate. Alternatively, when market prices are lower than the loan rate, the farmer can repay the loan at the adjusted world price (AWP)[12], retain ownership of the cotton and sell it in the marketplace (most advantageously when prices rise above the loan rate).

The difference between the loan rate and the AWP is known as a marketing loan gain. This gain is considered a direct payment from the CCC and is reportable as such for income tax purposes. This marketing loan gain is limited to $75,000 per person per year (but the rules allow a doubling of the limit for a spouse or for multiple farms). By design, repayment of loans at the AWP is intended to avoid acquisition of cotton by the CCC due to forfeiture of collateral in settlement of the nonrecourse loans. Forfeiture of cotton to CCC is another alternative available to the farmer borrower.

Still another way farmers can repay nonrecourse marketing assistance loans is to purchase cotton *commodity certificates* from the CCC at the adjusted world price and use the certificates to repay the loans, the only use that is allowed for the certificates. Gains achieved in this way (though identical to gains achieved by repaying loans at the AWP) are not subject to the per person annual payment limit.

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[12] USDA calculates and publishes, on a weekly basis, what is known as the adjusted world price (AWP). The AWP is the prevailing world price for upland cotton, adjusted to account for U.S. quality and location.

Farmers otherwise eligible to put cotton under loan can agree to forgo the loan option and instead receive loan deficiency payments (LDPs) when market prices fall below the loan rate. The LDP payment rate is the difference between the AWP and the loan rate (financially equivalent to the marketing loan gain). The loan deficiency payment option has several administrative and financial advantages for farmers over actual nonrecourse loans, which encourages its use. However, LDPs are treated just like marketing loan gains in terms of contributing toward the per person annual payment limits.

Marketing assistance loans reduce revenue risk associated with price variability and are considered production distorting in a WTO-sense because benefits are linked directly to production.

Direct Payments Program. The *direct payments program* pays upland cotton farmers $0.0667/lb. on 85% of historical cotton production (ELS cotton is not eligible). These direct payments are not linked to either current production or prices. In fact, farms may but need not produce cotton to receive the direct payments. They are allowed to grow cotton or any other major grain or oilseed (but not fruits and vegetables). The United States considers direct payments to be non trade-distorting under WTO rules, although some dispute this classification.

This decoupling of the support payments from production requirements and market prices was first adopted in the 1996 farm bill. The payments were called production flexibility contract (PFC) payments, or simply "contract payments." Renamed "direct payments" in the 2002 farm bill, they were extended another six years through crop year 2007. Direct payments are subject to an annual per person limit of $40,000, which can be doubled under the spouse or three-entity rules.

While direct payments are decoupled from both production and market prices, they are tied to acreage and so are capitalized into land values. This wealth effect may have some effects on production and investment decisions.

Counter-Cyclical Program. The *counter-cyclical program* was adopted in the 2002 farm bill and makes payments based on 85% of historical production (to the same farmers receiving direct payments). The payment rate is counter-cyclical to the market price. It goes up as the season average market price for upland cotton declines below the target price of $0.7240/lb. The difference (with adjustment) between the lower season average market price and the higher target price is the counter-cyclical payment rate. This payment rate is constrained on the lower end by the loan rate ($0.52) plus the direct payment rate ($0.0667), and so cannot exceed $0.1373/lb. Alternatively, if the season average price is above $0.6573, no counter-cyclical payments are made.

Again, farmers need not produce cotton to receive the counter-cyclical payments. While benefits are not linked to farmers' production decisions, they are linked to market prices. The linkage to market prices may be seen by some farmers as reducing market revenue risks, and so may influence some production decisions. Together, direct payments and counter-cyclical payments are called the direct and counter-cyclical payments program (DCP).

Counter-cyclical payments are similar, but not identical to target price *deficiency payments* that were made from 1973 through 1995. The difference is that target price deficiency payments were made on each farmer's actual production of cotton each year whereas farmers now need not produce cotton to receive cotton counter-cyclical payments. Counter-cyclical payments are subject to an annual per person payment limit of $65,000, which can be doubled under the spouse or three-entity rules.

Market Loss Payments. On an *ad hoc* basis, Congress directed that *market loss payments* be made to commodity program participants for the 1998, 1999, 2000, and 2001 crops. These payments were a reaction to sharply lower market prices that, in the absence of target price payments, meant substantially lower farm revenue. This experience played a critical role in the decision to create the counter-cyclical payments program in the 2002 farm bill. Most observers would say that the inclusion of counter-cyclical payments in the 2002 farm bill institutionalized market loss payments. With counter-cyclical payments in place, it is not expected that market loss payments will be applied to cotton or the other "covered commodities" through crop year 2007, the life of the current farm bill.

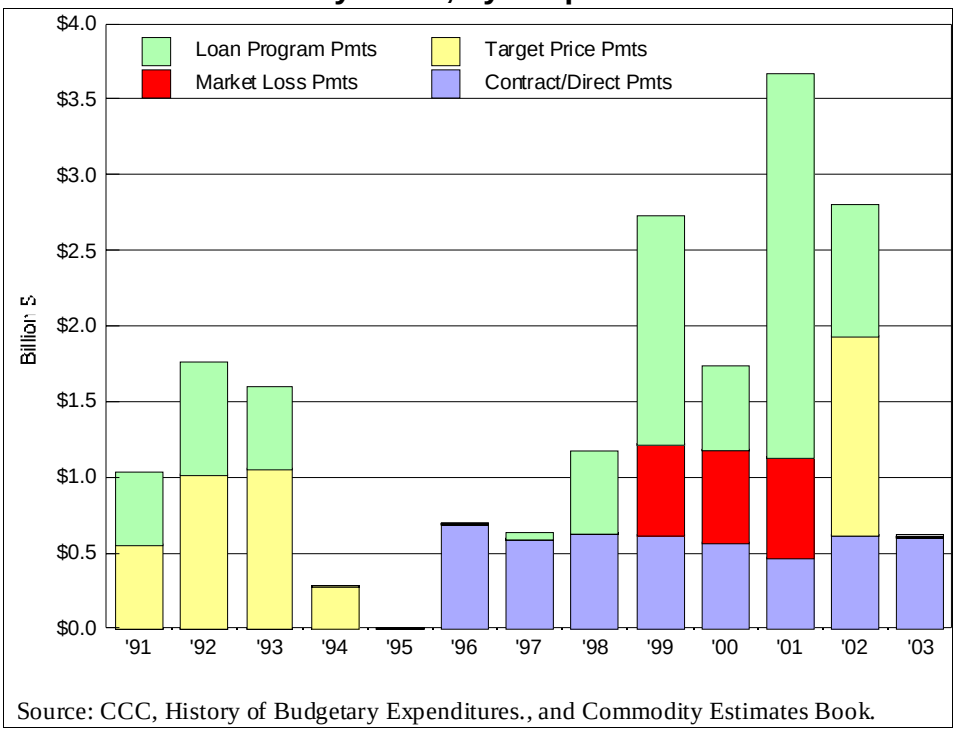
CCC Expenditures for Price Support. Generally, a pound of cotton produced on program base acreage is eligible for the loan program price of $0.52, plus a fixed direct payment of $0.05667 (85% of $0.0667), plus a counter-cyclical payment of $0.1167 (85% of $0.1373 ($0.724-($0.52+$0.667)). This totals $0.6934/lb. (about 89% of the total economic costs of production). How much these three support mechanisms cost the government depends upon how low market prices go. However, no matter how high prices go, the government is obligated each year to make the fixed direct payments. Cotton produced outside of the program base is guaranteed only the market assistance loan rate of $0.52/lb.[13]

The history of cotton price support payments is shown in **Figure 12**. For crop years 1991 through 2003, price support program payments averaged $1.441 billion annually.

When total price support payments are divided by production, the subsidies average $0.17/lb. from crop years 1991 through 2003, ranging from a low of zero in 1995 to a high of $0.38 in 2001 (see **Figure 13**). This $0.17/lb. average annual subsidy amounts to 34% of the $0.50/lb. average variable cash costs of production over that time period. Alternatively, this $0.17/lb. subsidy level was enough to cover nearly 60% of the $0.29/lb. fixed and non-cash costs of production, including the average $0.08/lb. land cost.

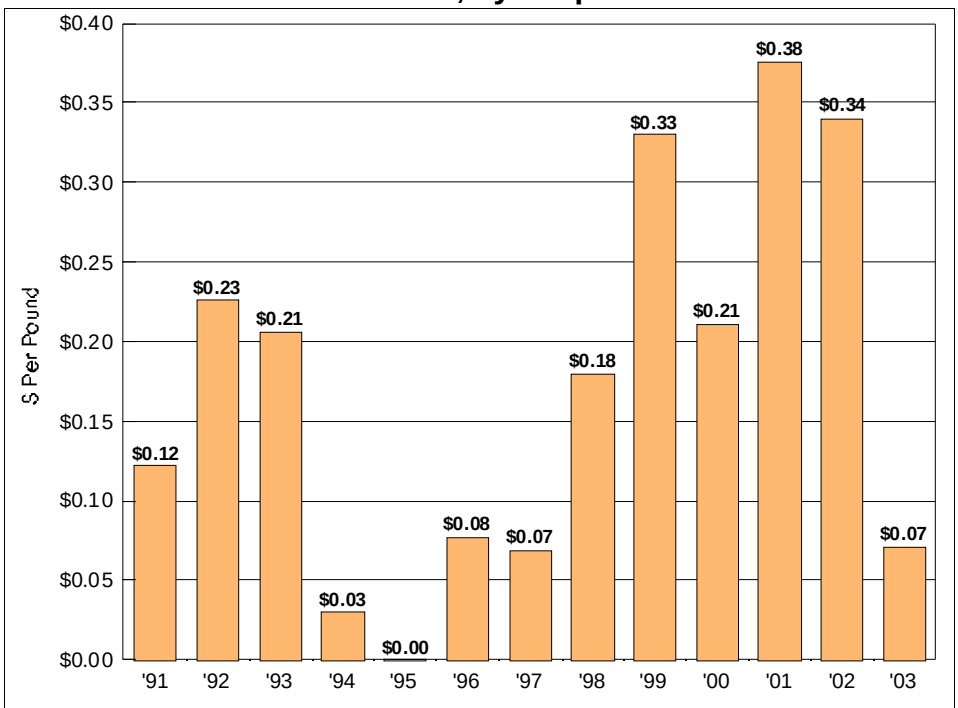
[13]It is possible and even likely that any cotton acreage outside of the base acreage for cotton DCP benefits does receive DCP benefits for other covered commodities.

Figure 12. CCC Expenditures for Cotton Price Support Payments, by Crop Year



Source: CCC, History of Budgetary Expenditures., and Commodity Estimates Book.

Figure 13. Cotton Price Support Payments Per Pound of U.S. Production, by Crop Year



Source: Calculated from CCC expenditure data.

Crop Loss Assistance

One reason for supply instability is low crop yield caused by natural disaster conditions (such as drought, flood, pests, and disease). Cotton producers can obtain subsidized *crop insurance* to protect against these losses. In addition, Congress has authorized *crop disaster payments* nearly every year since 1982 to provide extra assistance for growers suffering substantial crop losses. Disaster payments were available to qualifying growers who participated in the federally supported crop insurance program as well as growers who chose to forego insurance.

Crop Insurance. Multi-peril crop insurance is available to cotton producers (as well as most other crop producers) to protect against losses of crop yield from natural hazards. Nearly every cause of yield loss is covered (i.e., weather, pests, fire, but not producer negligence), hence the designation multi-peril. While the insurance is sold to farmers largely through private agencies, the USDA's Risk Management Agency (RMA) pays in excess of 50% of the premiums. Additionally, the RMA pays the private agencies nearly 24% of total premiums toward their administrative costs, plus RMA's own administrative costs, which have averaged 4% of total premiums.

By design, the crop insurance program is supposed to be actuarially sound. In other words, over time total premiums (producer plus government premium contributions) are supposed to cover total indemnities. In practice, however, the ratio of cotton losses to premiums from 1991 through 2003 has averaged 1.3 to 1, and only in two years did premiums exceed indemnities. The net losses (indemnities over premiums) fall upon the federal government because it reinsures the privately marketed policies. Critics of the crop insurance program argue that the high premium subsidy and the lack of actuarial soundness imply that the program is merely another tool for transferring government funds to cotton farmers.

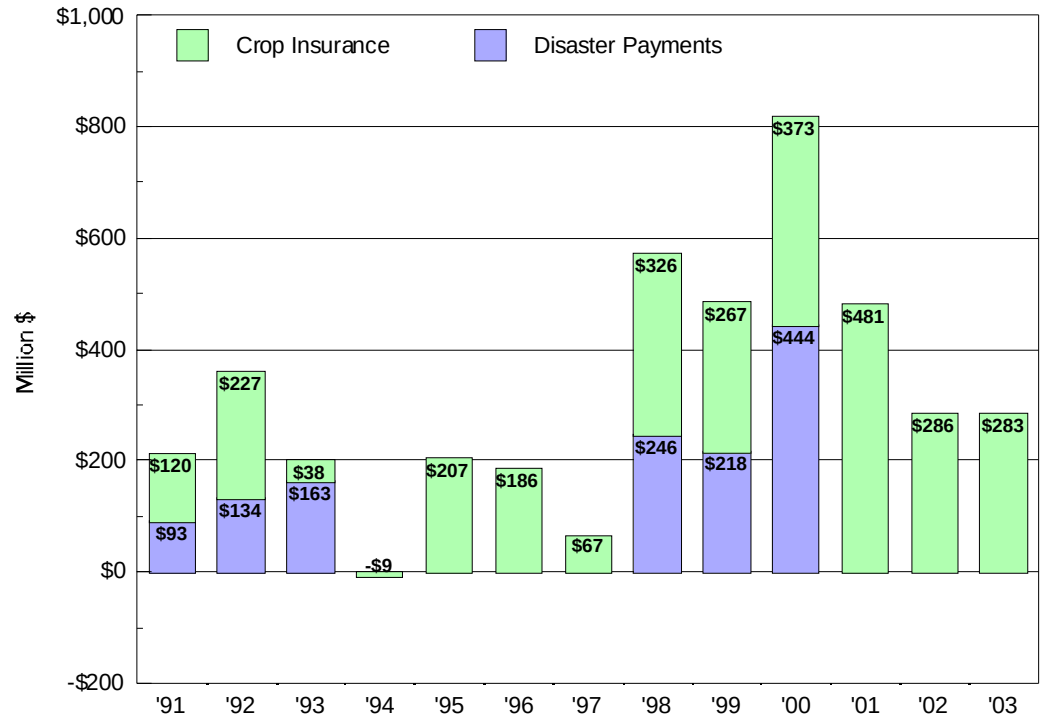
Substantial revisions were made to the crop insurance program by Congress in 1994 (P.L. 103-354, Title I, Federal Crop Insurance Reform Act of 1994) that effectively mandated the participation of farm subsidy program recipients in crop year 1995. While the mandatory provisions were eliminated the subsequent year, increased federal insurance subsidies enacted in 2000 (P.L. 106-224, Agricultural Risk Protection Act of 2000) encouraged participation to rise above 90% of planted cotton acres.

From 1991 through 2003, the federal cost of crop insurance annually has covered an average 10.9 million planted cotton acres. The net federal cost of premium subsidies and the excess of indemnities over premiums averaged $219 million per year (see **Figure 14**). These expenditures can be considered subsidies in direct support of farm income. Indirectly benefitting farmers were the reimbursement of private insurance agency administrative costs and federal administrative costs that together averaged an estimated $74 million per year.

Counting only the $219 million annual average premium and indemnity subsidies, the average subsidy rate per pound of actual cotton production was $0.026 over the 1991 through 2003 time period. When the 1995 through 2003 post-reform period is examined alone, the subsidy rate is higher, at $0.032/lb.

Crop Disaster Payments. Congress, on an *ad hoc* basis, has mandated disaster payments above and beyond insurance indemnities and also to producers who chose to not buy insurance. Over the nine years from 1995 through 2003, when an average of 90% of planted cotton acreage was insured, annual disaster payments ranged from zero (in 6 of the years) to $444 million. The average was $100 million per year (see **Figure 14**), equaling $0.01/lb. of production over that time period.

Figure 14. Cotton Crop Insurance Subsidies and Disaster Payments, by Crop Year



Source: USDA, Risk Management Agency and Commodity Credit Corporation.

Special Competitiveness Provisions

The farm income support programs are supplemented with additional tools to maintain sales of U.S. upland cotton when domestic prices are not low enough to be competitive in international markets. Three competitiveness programs unofficially are called *Step 1*, *Step 2*, and *Step 3*. Step 1 allows for additional reductions in the marketing assistance loan repayment rate when world market prices are higher than the loan rate. Step 2 pays domestic mills and exporters that purchase U.S. cotton when domestic prices are higher than world cotton prices. And Step 3 permits special (increased) import quotas when domestic prices are higher than world cotton prices so that domestic mills have adequate supplies. Also, a separate *limited global import quota* for upland cotton (which was adopted prior to the Step 1, Step 2, and Step 3 provisions) remains in effect.

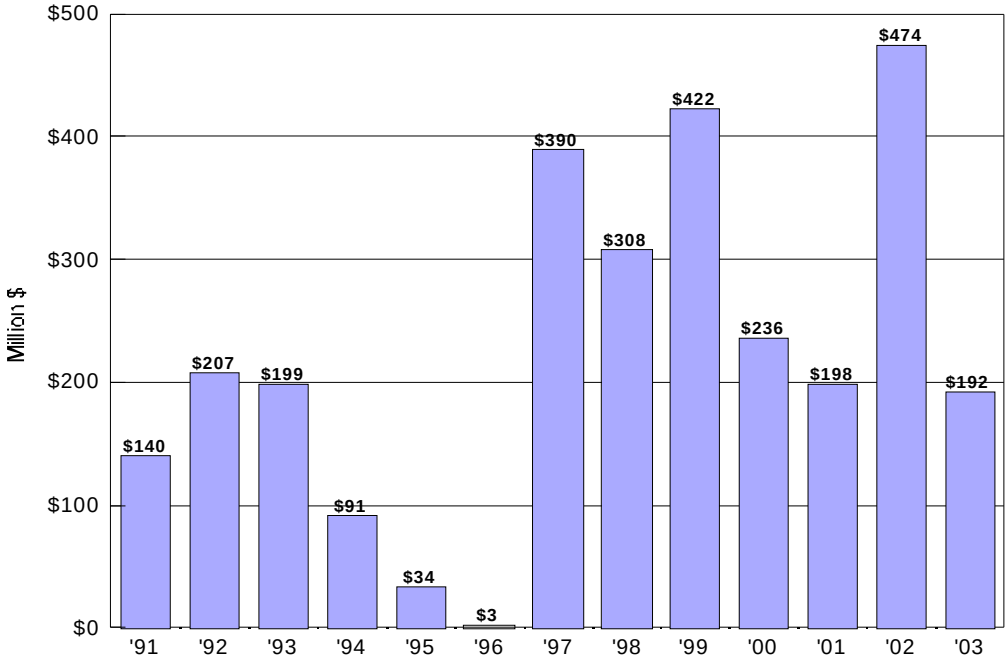
Step 1 Loan Repayment Rate Reduction. The Step 1 adjustment provision was initially adopted by the USDA under its administrative authority on October 3, 1989. Congress put the Step 1 provision into statute in the 1990 farm bill (P.L. 101-624, Sec. 501). Both the 1996 and 2002 farm bills retained the Step 1 authority, but with technical changes. However, the USDA has not taken action under Step 1 since 1992.

Marketing loan gains and loan deficiency payments are calculated as the difference between the loan rate and the adjusted world price (AWP). Only when the AWP is below the loan rate do farmers receive a subsidy payment. A provision of the law allows the USDA to lower the AWP when the price of U.S. upland cotton sold in Northern Europe (USNE) is higher than the price of competing cotton. This authority to reduce the AWP is unique to cotton and creates the opportunity for increased marketing loan program subsidies, even when the price of upland cotton is higher than the loan rate.

A Step 1 downward adjustment to the Adjusted World Price (AWP) may be made when the five-day average of the U.S. Northern European price (USNE) exceeds the Northern European price (NE), and the AWP is less than 115% of the loan level. In this circumstance, the USDA may lower the AWP up to the difference between the USNE price and the NE price. In other words, when the AWP is less than $0.598 (115% of $0.52), it can be adjusted downward by the difference between the higher USNE price and the lower NE price. The practical result of a Step 1 adjustment is to enable loan deficiency payments when US prices are higher than the loan price of $0.52, and to increase the loan deficiency payment rate by increasing the spread between the AWP and the loan price.

Step 2 Payments to Domestic Mill Users and Exporters. Step 2, first enacted in the 1990 farm bill and officially known as Upland Cotton User Marketing Certificates, provides subsidy payments to domestic users and exporters of U.S.-produced cotton when its price is higher than foreign-produced competing cotton. By offsetting the price difference with direct payments, Step 2 encourages U.S. yarn and fabric mills and exporters to purchase U.S. cotton. In other words, the subsidy payment to buyers makes higher-priced U.S. cotton competitive in the marketplace with lower-priced foreign cotton. Currently, Step 2 requires that through July 31, 2008, payments in either cash or marketing certificates be made to domestic users and exporters for documented purchases of U.S.-upland cotton when the USNE price of upland cotton exceeds the NE price for a consecutive four-week period. Step 2 payments are not made if the AWP exceeds 134% of the loan rate, or $0.697/lb. Similar user payments were adopted for ELS cotton in 1999 and are authorized through July 31, 2008. **Figure 15** shows yearly (August 1-July 31) payments (but the expenditures are for all cotton, not necessarily cotton produced in that crop year). From August 1, 1991 through May 31, 2004, Step 2 payments have averaged $0.026/lb. of cotton produced in the United States.

Figure 15. Cotton Step 2 Yearly User Marketing Payments



Expenditures made during the cotton crop year are not linked toa ny particular crop year.

Source: CCCC, History of Budgetary Expenditures, and unpublished weekly expenditure data.

Step 3 Special Import Quotas. The United States maintains a tariff rate quota on imported upland cotton of 173.09 million pounds (equivalently, 360.6 thousand bales or 86.545 thousand metric tons). The duty is nominal below the quota quantity, ranging from zero to $0.05/lb. Above the quota quantity trigger, the duty increases to a prohibitively high $0.1424/lb. ($0.314/kg). In periods of short domestic supply (due possibly to weather-related production shortages) and strong world demand, U.S. mills might have insufficient supplies. So-called Step 3 special import quotas allow for increased imports exempt from the high duty.

Step 3 requires that a "special import quota" be opened if, for a consecutive four-week period, the USNE price, adjusted for Step 2 payments in effect the previous week, exceeds the NE price. Another trigger for opening a Step 3 quota is a decline in the U.S. stocks-to-use ratio to below 16%. The size of the quota is equal to one week's domestic mill consumption. Importers have 90 days to make the purchases and 180 days to bring the cotton into the country. Quota periods can overlap. Total Step 3 imports in any crop year are limited to five weeks of domestic mill use.

In practice, annual U.S. imports of cotton are much less than the 173 million pound tariff-rate quota. The USDA estimates that cotton imports will total about 19 million pounds (40 thousand bales) in the 2003/04 marketing year.

Limited Global Import Quota. A "limited global import quota" for upland cotton equal to 21 days of domestic mill consumption is allowed (at below tariff rate

duty levels) when spot market prices show sustained strength for a three-year period. This allows domestic mills access to lower-priced foreign cotton, helping them to compete with foreign mills. Limited global import quotas cannot overlap with one another. Nor can a limited global quota be established if a Step 3 "special import quota" is in place. The precise condition for a limited import quota is an average spot market price for a month in excess of 130% of the average spot market price for the preceding 36 months.

Export Assistance

Cotton, as well as other agricultural commodities, benefits from several export assistance programs. Federal export credit guarantees are available to eligible foreign buyers who want to purchase commodities with borrowed funds. Additionally, the USDA administers two promotion programs that operate on a cost-share basis with the private sector. The Foreign Market Development (FMD) Cooperator Program (also widely known as the Cooperator program) focuses on generic commodity promotion and the Market Access Program (MAP) focuses on value-added agricultural products. FMD and MAP are exempt from Uruguay Round Agreement subsidy reduction commitments.

Export Credit Guarantees. The USDA's General Sales Manager (GSM) in the Foreign Agricultural Service (FAS) administers three credit guarantee programs for commercial financing of U.S. exports of food and agricultural products. With funds from the CCC, the government underwrites credit extended by the private lenders to finance exporter sales to eligible foreign importers. The guarantees are intended to encourage sales in countries where credit is necessary, but where financing may not be available. The credit guarantee programs replaced more costly direct loan programs.

USDA views its credit guarantee programs as commercial programs, not as export subsidies. The programs are supposed to support and encourage commercially viable transactions. Sales are made by private exporters to foreign buyers at prices and other terms, such as interest rates, negotiated by the two parties. However, this country has been working within the Organization for Economic Cooperation and Development (OECD) to achieve internationally agreed disciplines on the use of export credits. Terms and conditions for export credit programs are now being negotiated in the WTO.

GSM-102 guarantees repayment of short-term bank loans (up to three years), and GSM-103 guarantees repayment of intermediate-term bank loans (up to 10 years). For a fee, the guarantees cover 98% of principle and a portion of the interest. Eligible countries are those that USDA determines can service the debt backed by guarantees (the "creditworthiness" test). Cotton-related exporter applications for FY2003 totaled $334.8 million, all under GSM-102.

The Supplier Credit Guarantee Program (SCGP) guarantees short-term credit (not to exceed 180 days) extended by U.S. exporters directly to their foreign customers. Cotton-related exporter applications for FY2003 totaled $11.73 million.

If a foreign borrower defaults on a guaranteed loan, the U.S. financial institution files a claim with the CCC for reimbursement, and the CCC assumes the debt. If a country subsequently falls in arrears to the CCC, typically its debts are rescheduled. Under WTO rules, use of credit guarantees for foreign aid, foreign policy, or debt rescheduling purposes is prohibited.

Foreign Market Development Program. The Foreign Market Development Cooperator Program (7 U.S.C. § 5722) began in 1955 (under authority of P.L. 83-480, 7 U.S.C. § 1701) with the purpose of expanding bulk commodity export opportunities over the long term by partially financing industry-sponsored consumer promotions, technical assistance, trade servicing, and market research. The 2002 farm bill reauthorized the FMD through FY2007. Funding is from discretionary appropriations of no more than $34.5 million annually. Typically, nonprofit industry organizations submit proposals for marketing activities to the USDA. Approved projects normally are reimbursed after completion on a cost share basis of 45% federal and 55% private sector. Cooperators receiving federal funds under FMD in FY2002 for cotton-related activities were the Cotton Council International ($2,312,188) and the National Cottonseed Products Association ($90,635).

Market Access Program. The Market Access Program (MAP) was originally created in 1978 as the Market Promotion Program (P.L. 95-501, 7 U.S.C. § 5623). The name was changed in the 1996 farm bill, and the 2002 farm bill authorized annual appropriations of up to $100 million in FY2002 and gradually increasing to $200 million for FY2006 and FY2007. It is intended to help develop foreign markets for value-added agricultural products and operates as a cost-share program like the FMD Program. The types of activities that are undertaken through MAP are advertising and other consumer promotions, market research, technical assistance, and trade servicing. About 60% of MAP funds typically support generic promotion (i.e., non-brand name commodities or products), and about 40% support brand-name promotion (i.e., a specific company product). The federal contribution for generic promotion is up to 90% and for branded promotion up to 50%. The FY2003 allocation for the Cotton Council International is $8,406,098.

Appendix Table 2. Major Cotton Producing, Exporting, and Importing Countries, and Share of the World Market, Crop Year 2003/04

Country	1,000 480 Lb. Bales	Share of World Total
Production		
China	22,300	24%
USA	18,255	20%
India	13,100	14%
Pakistan	7,750	8%
Brazil	5,650	6%
WCA *	4,915	5%
Uzbekistan	4,200	4%
Turkey	4,100	4%
Other Countries	13,203	14%
World Total	**93,465**	**100%**
Exports		
United States	13,800	42%
WCA	4,621	13%
Uzbekistan	3,125	9%
Australia	2,050	6%
Mali	1,175	4%
Greece	1,100	3%
Burkina	950	3%
Brazil	950	3%
Other Countries	5,541	17%
World Total	**32,992**	**100%**
Imports		
China	8,800	27%
EU-15	2,487	7%
Turkey	2,200	7%
Indonesia	2,150	6%
Pakistan	1,750	6%
Thailand	1,700	5%
Bangladesh	1,540	5%
Russian Federation	1,475	4%
Mexico	1,450	4%
Korea; Republic of	1,275	4%
Taiwan	1,000	3%
India	900	3%
Japan	775	2%
Other Countries	5,937	18%
World Total	**33,589**	**100%**

Source: Primary data are from USDA, FAS, Cotton: World Markets and Trade, June 2004.

* WCA, West and Central African country production including Benin (685), Burkina Faso (965), Cameroon (500), Central African Republic (30), Chad (225), Cote d'Ivoire (400), Ghana (25), Guinea (40), Mali (1,200), Niger (5), Nigeria (415), Senegal (100), Togo (325).

Appendix Table 3. U.S. Cotton Area, Production, and Season Average Price Received by Farmers, Crop Years 1991-2003

Crop Year	Area Planted	Area Harvested	Production	Production	Season Average Farm Price
	Thou. Acres	Thou. Acres	Thou. Bales	Mil. Lbs.	$ Per Lb.
'91	14,052	12,960	17,614	8,455	$0.57
'92	13,240	11,123	16,218	7,785	$0.54
'93	13,438	12,783	16,134	7,744	$0.58
'94	13,720	13,322	19,662	9,438	$0.72
'95	16,931	16,007	17,900	8,592	$0.75
'96	14,653	12,888	18,942	9,092	$0.69
'97	13,898	13,406	18,793	9,021	$0.65
'98	13,393	10,684	13,918	6,681	$0.60
'99	14,874	13,425	16,968	8,145	$0.45
'00	15,517	13,053	17,188	8,250	$0.50
'01	15,769	13,828	20,303	9,745	$0.30
'02	13,958	12,427	17,209	8,260	$0.43
'03	13,483	12,058	18,255	8,762	$0.64
Average	14,379	12,920	17,623	8,459	$0.57

Source: USDA, NASS, Crop Production, April 2004; ERS, Cotton and Wool Situation Outlook Yearbook, November 2003; World Board, World Agricultural Supply and Demand Estimates, May 2004.

Appendix Table 4. Cost of U.S. Cotton Production, Crop Years 1991-2003 Est.

Crop Year	Variable Cash Costs	Fixed Costs					Total Economic Costs
		General Farm Overhead	*Taxes and Insurance*	*Capital Replacement*	*Land*	TotalFixed Costs	
Dollars Per Planted Acre							
'91	$266.54	*$15.67*	*$19.96*	*$68.04*	*$39.32*	$142.99	$409.53
'92	$263.55	*$14.87*	*$19.14*	*$61.03*	*$35.30*	$130.34	$393.89
'93	$271.51	*$15.11*	*$20.03*	*$70.31*	*$38.03*	$143.48	$414.99
'94	$276.95	*$17.05*	*$22.35*	*$73.32*	*$47.45*	$160.17	$437.12
'95	$298.41	*$18.20*	*$23.33*	*$82.79*	*$45.61*	$169.93	$468.34
'96	$298.78	*$16.52*	*$23.31*	*$83.59*	*$47.80*	$171.22	$470.00
'97	$302.63	*$14.34*	*$14.97*	*$94.21*	*$58.33*	$181.85	$484.48
'98	$264.79	*$14.21*	*$14.20*	*$93.16*	*$46.04*	$167.61	$432.40
'99	$279.74	*$15.35*	*$15.07*	*$96.80*	*$51.84*	$179.06	$458.80
'00	$306.36	*$15.82*	*$15.93*	*$100.08*	*$51.68*	$183.51	$489.87
'01	$322.13	*$16.11*	*$16.68*	*$101.76*	*$43.83*	$178.38	$500.51
'02	$324.50	*$16.28*	*$16.89*	*$103.16*	*$40.15*	$176.48	$500.98
'03E	$324.39	*$16.51*	*$17.24*	*$105.79*	*$40.97*	$180.51	$504.90
Ave.	$292.33	*$15.85*	*$18.39*	*$87.23*	*$45.10*	$166.58	$458.91
Dollars Per Pound of Production							
'91	$0.44	*$0.03*	*$0.03*	*$0.11*	*$0.07*	$0.24	$0.68
'92	$0.45	*$0.03*	*$0.03*	*$0.10*	*$0.06*	$0.22	$0.67
'93	$0.47	*$0.03*	*$0.03*	*$0.12*	*$0.07*	$0.25	$0.72
'94	$0.40	*$0.02*	*$0.03*	*$0.11*	*$0.07*	$0.23	$0.64
'95	$0.59	*$0.04*	*$0.05*	*$0.16*	*$0.09*	$0.33	$0.92
'96	$0.48	*$0.03*	*$0.04*	*$0.13*	*$0.08*	$0.28	$0.76
'97	$0.47	*$0.02*	*$0.02*	*$0.15*	*$0.09*	$0.28	$0.75
'98	$0.53	*$0.03*	*$0.03*	*$0.19*	*$0.09*	$0.34	$0.87
'99	$0.51	*$0.03*	*$0.03*	*$0.18*	*$0.09*	$0.33	$0.84
'00	$0.58	*$0.03*	*$0.03*	*$0.19*	*$0.10*	$0.35	$0.92
'01	$0.52	*$0.03*	*$0.03*	*$0.16*	*$0.07*	$0.29	$0.81
'02	$0.55	*$0.03*	*$0.03*	*$0.17*	*$0.07*	$0.30	$0.85
'03E	$0.51	*$0.03*	*$0.03*	*$0.16*	*$0.06*	$0.28	$0.79
Ave.	$0.50	*$0.03*	*$0.03*	*$0.15*	*$0.08*	$0.29	$0.78

Source: Basic data for per acre costs from USDA, ERS, Cost of Cotton Production. Costs per pound are calculated by the author based on actual production. Rounding the data creates apparent discrepancies that are not present in the underlying numbers.
*The opportunity costs for unpaid family labor are excluded from economic costs.

Appendix Table 5. Federal Expenditures for Cotton Price Support and Crop Loss Assistance, Crop Years 1991-2003

Crop Year	Price and Farm Income Support Payments					Crop Loss Subsidies			**Total Farm Subsidies**
	Contract & Direct Pmts	*Market Loss Pmts*	*Target* Price Pmts*	*Loan Program Pmts*	**Total Support Pmts**	*Crop Disaster Pmts*	*Crop Insurance Subsidy*	**Total Crop Loss Subsidies**	
	Million Dollars								
'91	*$0*	*$0*	*$552*	*$477*	**$1,029**	*$93*	*$120*	**$213**	**$1,242**
'92	*$0*	*$0*	*$1,017*	*$744*	**$1,761**	*$134*	*$227*	**$361**	**$2,122**
'93	*$0*	*$0*	*$1,053*	*$546*	**$1,599**	*$163*	*$38*	**$201**	**$1,800**
'94	*$0*	*$0*	*$280*	*$0*	**$280**	*$0*	*($9)*	**($9)**	**$271**
'95	*$0*	*$0*	*$4*	*$0*	**$4**	*$0*	*$207*	**$207**	**$211**
'96	*$699*	*$0*	*$0*	*$0*	**$699**	*$0*	*$186*	**$186**	**$885**
'97	*$597*	*$0*	*$0*	*$29*	**$626**	*$0*	*$67*	**$67**	**$693**
'98	*$637*	*$0*	*$0*	*$534*	**$1,171**	*$246*	*$326*	**$572**	**$1,743**
'99	*$614*	*$613*	*$0*	*$1,500*	**$2,727**	*$218*	*$267*	**$485**	**$3,212**
'00	*$575*	*$612*	*$0*	*$555*	**$1,742**	*$444*	*$374*	**$818**	**$2,560**
'01	*$474*	*$654*	*$0*	*$2,539*	**$3,666**	*na*	*$481*	**$481**	**$4,148**
'02	*$625*	*$0*	*$1,311*	*$873*	**$2,809**	*na*	*$286*	**$286**	**$3,095**
'03	*$611*	*$0*	*$0*	*$12*	***$623***	*$0*	*$283*	**$283**	**$906**
Ave.	*$372*	*$145*	*$324*	*$601*	***$1,441***	*$100*	*$219*	**$319**	**$1,761**

Source: Primary data from USDA, Farm Service Agency, Fact Sheet Upland Cotton: History of Budgetary Expenditures, Commodity Estimates Book. USDA, Risk Management Agency, Summary of Business Data by Year and Crop.
*Includes target price deficiency payments in 1991-95 and counter-cyclical payments in 2002 and 2003.

Appendix Table 6. Cotton Price Support Payments and Crop Loss Assistance Per Pound, Crop Years 1991-2003

Crop Year	Price and Farm Income Support Payments					Crop Loss Subsidies			**Total Farm Subsidies**
	Contract & Direct Pmts	*Market Loss Pmts*	*Target Price Pmts **	*Loan Program Pmts*	**Total Support Pmts**	*Crop Disaster Pmts*	*Crop Insurance Subsidy*	**Total Crop Loss Subsidies**	
	Dollars Per Pound of Production								
'91	*$0*	*$0*	*$0.07*	*$0.06*	**$0.12**	*$0.01*	*$0.01*	**$0.03**	**$0.15**
'92	*$0*	*$0*	*$0.13*	*$0.10*	**$0.23**	*$0.02*	*$0.03*	**$0.05**	**$0.27**
'93	*$0*	*$0*	*$0.14*	*$0.07*	**$0.21**	*$0.02*	*$0*	**$0.03**	**$0.23**
'94	*$0*	*$0*	*$0.03*	*$0*	**$0.03**	*$0*	*$0*	**$0.00**	**$0.03**
'95	*$0*	*$0*	*$0*	*$0*	**$0.00**	*$0*	*$0.02*	**$0.02**	**$0.02**
'96	*$0.08*	*$0*	*$0*	*$0*	**$0.08**	*$0*	*$0.02*	**$0.02**	**$0.10**
'97	*$0.07*	*$0*	*$0*	*$0*	**$0.07**	*$0*	*$0.01*	**$0.01**	**$0.08**
'98	*$0.10*	*$0*	*$0*	*$0.08*	**$0.18**	*$0.04*	*$0.05*	**$0.09**	**$0.26**
'99	*$0.08*	*$0.08*	*$0*	*$0.18*	**$0.33**	*$0.03*	*$0.03*	**$0.06**	**$0.39**
'00	*$0.07*	*$0.07*	*$0*	*$0.07*	**$0.21**	*$0.05*	*$0.05*	**$0.10**	**$0.31**
'01	*$0.05*	*$0.07*	*$0*	*$0.26*	**$0.38**	*na*	*$0.05*	**$0.05**	**$0.43**
'02	*$0.08*	*$0*	*$0.16*	*$0.11*	**$0.34**	*na*	*$0.03*	**$0.03**	**$0.37**
'03	*$0.07*	*$0*	*$0*	*$0*	**$0.07**	*$0*	*$0.03*	**$0.03**	**$.010**
Ave.	*$0.04*	*$0.02*	*$0.04*	*$0.07*	**$0.17**	*$0.01*	*$0.03*	**$0.04**	**$0.21**

Source: Calculated by author using basic data from the USDA, Farm Service Agency, Fact Sheet Upland Cotton: History of Budgetary Expenditures, Commodity Estimates Book. USDA, Risk Management Agency, Summary of Business Data by Year and Crop.
*Includes deficiency payments in 1991-95 and counter-cyclical payments in 2002 and 2003.