

An hourglass-shaped graphic with a globe inside. The top bulb is dark blue, and the bottom bulb is light blue. The globe is a light blue color. The hourglass is centered on the page.

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*The Low-Income Housing Tax Credit: A Framework for  
Evaluation*

Pamela J. Jackson, Government and Finance Division

Updated April 15, 2008

**Abstract.** As policy makers begin to address affordable housing issues, modifications to the LIHTC could be considered. This report, which will be updated in the event of significant legislative events, discusses some fundamental public policy questions - questions neither extensively explored nor resolved. Is the lack of affordable housing a result of a housing-market failure? Does the LIHTC address the affordable housing problem? And, is the LIHTC efficient, or could it be improved? These questions are not definitively answered in economics literature.

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# CRS Report for Congress

## The Low-Income Housing Tax Credit: A Framework for Evaluation

Updated April 15, 2008

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Prepared for Members and  
Committees of Congress

# The Low-Income Housing Tax Credit: A Framework for Evaluation

## Summary

The Low-Income Housing Tax Credit (LIHTC) is an economic incentive to produce affordable rental housing. These federal housing tax credits are awarded to developers of qualified projects, who either use or sell the credits to investors to raise capital (or equity) for real estate projects. The tax benefit reduces the debt and/or equity financing that the developer would otherwise have to obtain. With lower financing costs, beneficiaries of tax credits can offer lower, more affordable rents. See CRS Report RS22389, *An Introduction to the Design of the Low-Income Housing Tax Credit*, by Pamela J. Jackson for a detailed description of how the LIHTC program works and an overview of legislative developments.

Proponents of the credit view the LIHTC as highly effective because of the more than one million rental units already financed by the credit. Proponents also emphasize that the credit is responsible for the production of up to 50% of all multifamily housing starts in any given year. Opponents argue that the LIHTC is not effective or, at a minimum, far less effective than supporters claim because LIHTC units have supplanted other affordable rental housing and because the supply-side credit program is more costly than demand-side subsidies like the Section 8 Housing Voucher Program. Opponents also argue that the LIHTC program does not serve very-low-income households, who are often most in need of affordable housing.

As policy makers begin to address affordable housing issues, modifications to the LIHTC could be considered. This report, which will be updated in the event of significant legislative events, discusses some fundamental public policy questions — questions neither extensively explored nor resolved. Is the lack of affordable housing a result of a housing-market failure? Does the LIHTC address the affordable housing problem? And, is the LIHTC efficient, or could it be improved? These questions are not definitively answered in economics literature.

Determining the size of the affordable housing market may be of value. A national inventory system could be created to record information about the net gains (or losses) of affordable rental units. Also, to the extent the effectiveness of the LIHTC relies on the ability of state housing authorities to select marginal projects (those projects that, if not for the LIHTC, would not be developed), it could be useful to know whether states are selecting these projects. Do applicants who fail to win credit awards subsequently go on to build housing without the tax credit?

Congress may not alter the LIHTC program. As a tax expenditure, the program does not require an appropriation or reauthorization. Alternatively, Congress might modify the LIHTC program. Some attention has focused on examining the rules of the LIHTC program to determine where its compatibility with other housing finance programs can be increased. Policymakers have also discussed whether the LIHTC program could be modified to target affordable housing production for households with very low income. Another option is to repeal the LIHTC program.

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# The Low-Income Housing Tax Credit: A Framework for Evaluation

## Overview

The LIHTC was created by the Tax Reform Act of 1986 (TRA; P.L. 99-514) to provide an incentive for the acquisition and development or rehabilitation of affordable rental housing. In the two decades since its enactment, the LIHTC has become the leading source of financing for affordable rental housing. As the 110<sup>th</sup> Congress begins, and legislative conversations turn toward affordable housing, the LIHTC may receive attention.

Proponents of the LIHTC view the credit as highly efficient and effective. As evidence of effectiveness, advocates state that the LIHTC is responsible for producing 50% of all multifamily housing starts annually, and virtually all affordable rental housing in the United States since the credit was introduced.<sup>1</sup> Proponents also suggest that the very high price of tax credits in equity markets is a sign of the credit's popularity.

Opponents claim that the LIHTC has crowded out other forms of rental housing finance, and that result, not the credit's value, is the leading source of financing for rental housing. Additionally, the credit is perceived as more costly and less efficient than demand-side subsidies like the Section 8 Housing Voucher Program. Opponents also claim that the price of tax credit dollars is high, not because of its efficiency, but because the credit offers a deep subsidy to investors as well as other tax benefits.<sup>2</sup>

As policy makers begin to address affordable housing issues, modifications to the LIHTC will likely be considered. This report discusses some fundamental public-policy questions that have not received much attention. Is the lack of affordable housing a result of a housing-market failure? Does the LIHTC address the affordable housing problem? And is the LIHTC efficient, or can it be improved? Despite the significance of the tax credit in housing finance markets, these questions are not definitively answered in economics literature.

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<sup>1</sup> Affordable Housing Tax Credit Coalition, "The Low-Income Housing Tax Credit and the Hurricane Katrina Relief Effort: Comments of the Affordable Housing Tax Credit Coalition made to the U.S. Congress Senate Finance Committee," at [[http://www.taxcreditcoalition.org/about/news/2005/AHTCC\\_Statement\\_to\\_Senate\\_Finance\\_Committee\\_092805.pdf](http://www.taxcreditcoalition.org/about/news/2005/AHTCC_Statement_to_Senate_Finance_Committee_092805.pdf)].

<sup>2</sup> In addition to the tax credits, investors may also be able to claim depreciation and capital gains losses on the real estate investment.

This report, where possible, attempts to answer these questions. Where it is not possible to answer the policy questions, this report draws attention to the information, actions, or both, necessary to obtain the answers. The principal conclusions of this report are as follows:

- The perceived lack of affordable housing, while of concern to policy makers, the press, and to some degree, the general public, is not necessarily caused by a housing-market failure. There is insufficient empirical evidence to determine what is causing the affordable housing “crisis.”
- The evidence is unclear that the LIHTC actually helps to solve the affordable housing problem, and there is some evidence that it may actually crowd out (replace) other affordable housing development rather than increase the number of housing units.
- The LIHTC has a complicated system of delivery that may increase costs relative to the benefits it provides. Moreover, it may be less efficient than other affordable housing programs.

After discussing how affordable housing is defined, this report examines whether a housing-market failure exists, whether the LIHTC program is efficient, and whether the LIHTC is cost effective relative to other programs; and concludes with a discussion of several policy options.

## What is Affordable Housing?

There is a growing consensus among policy makers and the general public that the nation faces a shortage of affordable housing, particularly rental housing. The 2002 bipartisan, congressionally mandated Millennial Housing Commission’s final report confirmed and defined the shortage as a “crisis.”<sup>3</sup> The Harvard Joint Center for Housing Studies’ 2006 State of the Nation’s Housing Report identified housing affordability as one of the key challenges facing the nation. But is the “affordability crisis” the result of a housing market failure, warranting government intervention in housing markets? To answer that question, we start by defining the concept of affordable housing.

The term “affordable housing” is widely used and generally refers to housing of standard, decent quality, and that a family can afford without compromising their ability to meet other needs. While higher-income families generally have a range of housing that, under this definition, is available to them, families with lower incomes have fewer options. Housing affordability for middle- and lower-income groups is generally measured in terms of cost burden. Generally, cost burden measures the

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<sup>3</sup> U.S. Congress, Report of the Bipartisan Millennial Housing Commission, *Meeting Our Nation’s Housing Challenges*, May 30, 2002, at [<http://govinfo.library.unt.edu/mhc/MHCReport.pdf>].

actual percentage of household income spent on housing by renters.<sup>4</sup> Households are considered cost-burdened if more than 30% of annual income is spent on housing.<sup>5</sup> When families are considered housing-cost burdened, they may have difficulty affording necessities such as food, clothing, transportation, and medical care. In 2004, 7.6 million renter households were considered cost burdened, with an additional 8.4 million renter households considered severely cost burdened — paying more than 50% of their income toward housing. While some moderate-income renters experience severe rent burdens, low-income renters face the greatest burdens; more than 86% of severely cost-burdened renters were in the bottom quintile of the income distribution.<sup>6</sup>

Economists report that the problem of severe rent burdens may be growing while the supply of low-cost rental units may be declining, creating an affordable housing shortage. It is estimated that the inventory of affordable units — with inflation-adjusted rents of \$400 or less, including utilities — declined by 1.2 million from 1993 to 2003. With losses of units due to repair, abandonment, or demolition, the shortage of affordable rentals available to low-income households is estimated at 5.4 million.<sup>7</sup>

## Is There a Housing Market Failure?

According to standard economic theory, an economy best satisfies the wants and needs of its participants if markets operate free from distortions such as taxes. Government intervention in housing markets, as in any market, may be justified on economic grounds if market failures exist. Market failures can occur when a market, left on its own, fails to allocate resources efficiently.<sup>8</sup> If a market failure exists and a subsidy remedies that failure, then there is economic justification for the subsidy based on efficiency. If a market failure does not exist, then there is no economic justification for the subsidy based on efficiency.<sup>9</sup> There may, however, be justifications for government intervention based on other public-policy goals, such

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<sup>4</sup> Affordability is sometimes measured in terms of income adequacy, which compares annual household income to the income needed to pay annual rent costs. For example, in the United States, the median middle-income household earned 1.65 times the income needed to rent the median-priced apartment.

<sup>5</sup> Some industry analysts criticize the 30% measure as arbitrary and point out that the measure fails to take into account other household needs.

<sup>6</sup> Joint Center for Housing Studies of Harvard University, “The State of the Nation’s Housing,” 2006, p. 36, Table A-6, available at [<http://www.jchs.harvard.edu/publications/markets/son2006/son2006.pdf>].

<sup>7</sup> *Ibid.*, p. 24.

<sup>8</sup> Generally, an outcome is economically efficient if the marginal cost of producing one more unit of a good is equivalent to the marginal benefit of consuming one more unit of the good.

<sup>9</sup> For more detailed information about market failures, see CRS Report RL32162, *The Size and Role of Government: Economic Issues*, by Marc Labonte.

as ensuring a minimum level of housing consumption for all households or equalizing opportunities for housing consumption.

Certain socially undesirable phenomena may be valid targets of public policy, such as pay inequality, poverty, lack of affordable housing, and inflation, but there is no consensus as to whether these problems meet the definition of economic inefficiency.<sup>10</sup> Some economists argue that the lack of affordable housing is not a market failure to be corrected, but rather a result of increased demand being met with a slow supply response, which causes prices to rise.<sup>11</sup>

If the lack of affordable housing is a supply-response problem, state and local land-use regulations may be contributing factors.<sup>12</sup> Land-use restrictions and zoning laws are examples of government regulatory areas that can hinder the timeliness of supply responses to changes in demand.

Another key factor potentially contributing to a lack of affordable housing, but one not categorized as a market failure, is the unwillingness of lenders to make loans to investors because of class or race bias, a form of discrimination often referred to as redlining. Where discrimination in lending occurs, capital subsidies for affordable housing might improve the allocation of capital.<sup>13</sup>

If a market failure exists, the presence of externalities may be the culprit. An externality, itself a type of market failure, exists when the activity of an individual directly affects, positively or negatively, the welfare of another, and that result, or consequence, is not incorporated in market prices.<sup>14</sup> Economic theory suggests that there are externalities in housing-services markets because there are both private costs and benefits for individuals as well as social costs and benefits for the public at large. High prices for housing in certain areas can increase housing prices in adjacent areas. Also, to the extent that housing structures, perhaps older ones, induce blight, there is an imposition of external costs on society. These externalities of housing sometime serve as grounds for government intervention in such areas as neighborhood redevelopment and housing production.<sup>15</sup>

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<sup>10</sup> CRS Report RL32162, *The Size and Role of Government: Economic Issues*.

<sup>11</sup> Housing is a commodity characterized by durability and immobility. Economists contend that, in the short run, the supply of housing is fixed and any increases in demand for housing lead to higher prices. In the long run, housing supply rises and housing prices adjust.

<sup>12</sup> Joint Center for Housing Studies of Harvard University, "The State of the Nation's Housing," 2006, p. 25, available at [<http://www.jchs.harvard.edu/publications/markets/son2006/son2006.pdf>].

<sup>13</sup> Leonard E. Burman and Alastair McFarlane, "Low-Income Housing Credit," in the *Encyclopedia of Taxation and Tax Policy* (Washington, DC: The Urban Institute Press, 2005), p. 243.

<sup>14</sup> For a more detailed discussion of externalities, see Harvey Rosen, "Externalities" in *Public Finance* (Boston: McGraw-Hill, 1999), pp. 85-110.

<sup>15</sup> D.C. Stafford, *The Economics of Housing Policy* (London: Croom Helm, 1978), pp. 39-42.



Yet, the few studies that have examined the LIHTC's contribution to neighborhood quality have found only small effects, both negative and positive.<sup>16</sup> In some cases, the new construction of LIHTC projects positively influenced the price of single-family homes in the immediate surrounding area. In other cases, the LIHTC projects negatively influenced the price of single-family homes.

The lack of affordable housing raises a host of important economic issues. For example, to the extent that households spend disproportionate amounts of income on housing, other basic necessities might be neglected. One recent report found that households devoting more than 50% of their income to housing paid an average of \$175 for food and \$35 for healthcare per month in 2003. In comparison, households spending less than 30% of their income on housing paid an average of \$248 for food and \$109 for healthcare monthly.<sup>17</sup> If health care spending, for instance, is insufficient for households, it could lead to poor health and well-being. This outcome could create both private costs for the household and social costs for the community (negative externalities), either through increased public subsidies for health care or increased disease and poor health for others.

Yet, it can be argued that the negative externality experienced by households in the example above is not confined solely to the housing market. In that case, the externality might be more appropriately viewed as a matter for the health care marketplace.

Correcting market failures may not be the only reason for government intervention. Other reasons could include the desire to increase equality of outcomes (to provide a minimum level of housing consumption by all members of society) or to create equity of opportunity (ensuring viable participation in housing markets by providing some minimum endowment of assets).<sup>18</sup> If housing subsidies, like the LIHTC, contribute toward these outcomes, then the subsidies may be justified. Most economists, however, would argue that a demand-side subsidy, like housing vouchers, would be more appropriate than the LIHTC (a supply-side subsidy) in satisfying this type of policy objective.<sup>19</sup> Other economists argue that the supply of rental housing is insufficient to meet demand and thus supply-side subsidies are necessary policy tools to complement demand-side subsidies.

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<sup>16</sup> For instance, see Richard K. Green, Stephen Malpezzi and Kiat-Ying Seah, "Low Income Housing Tax Credit Housing Developments And Property Values," a policy report for the *Center for Urban Land Economics Research*, June 14, 2002; Zhong Yi Tong, Amy Bogdon, and Michelle Bowman Mengel, "The Low-Income Housing Tax Credit," white paper published by the *Fannie Mae Foundation*, December 2003; and Chang-Moo Lee, Dennis P. Culhane, and Susan Wachter, "The Differential Impacts of Federally Assisted Housing Programs on Nearby Property Values: A Philadelphia Case Study," *Housing Policy Debate*, vol. 10, iss. 1.

<sup>17</sup> "The State of the Nation's Housing 2005," Joint Center for Housing Studies of Harvard University, 2005, p. 25.

<sup>18</sup> David Weimer and Aidan Vining, *Policy Analysis: Concepts and Practice*, 3<sup>rd</sup> ed. (Upper Saddle River, NJ: Prentice Hall, 1998), pp. 141-145.

<sup>19</sup> Some housing analysts argue that if subsidies are warranted for reasons having only to do with income inequality, then income support is the most appropriate form of aid.

Once the question justifying the LIHTC is addressed, the next policy question that arises is does the LIHTC address the affordable housing problem? The next section of this report addresses this question.

## Does the LIHTC Address the Affordable Housing Problem?

The fact that the LIHTC is a source of financing for a large number of rental housing units is undisputed. Industry experts often cite these data as evidence of the credit's success. Left unaddressed is the issue of whether (or to what extent) the units financed with the LIHTC would have been built without the LIHTC? And, for tax credit units built, to what extent, if any, do they crowd out existing units? The following section attempts to address this issue, but to date, the relevant data to make these determinations are not readily available.

A number of studies assert the positive impact of the LIHTC is large. In 2000, for example, McClure cited several studies of the credit's impact, and stated that the LIHTC

has been a success in that it generated many rental housing units that are now occupied by low- and moderate-income households. Although estimates vary, the program has contributed to the rehabilitation or construction of somewhere between 500,000 and 900,000 units.<sup>20</sup>

More recent estimates from the U.S. Department of Housing and Urban Development (HUD) indicate that 1.3 million units were placed in service between 1997 and 2003.<sup>21</sup> These estimates, however, do not indicate whether or not the LIHTC units constitute net additions to the housing stock. The LIHTC data do not reflect all additions to the housing stock and the portion of those additions that the LIHTC represents.

Thus, assessing the LIHTC's impact on the housing stock involves two related issues for investigation: marginality (housing production choices made at the margin) and "crowding out" (whether subsidized affordable housing replaces other affordable housing).

**Are the Projects at the Margin Being Selected?** One issue that arises in assessing the impact of the LIHTC on the stock of housing is whether the projects receiving the tax-credit awards are at the margin of being developed.<sup>22</sup> In other

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<sup>20</sup> Kirk McClure, "The Low-Income Housing Tax Credit as an Aid to Housing Finance: How Well Has it Worked?" *Housing Policy Debate*, vol. 11, 2000, p. 91.

<sup>21</sup> U.S. Department of Housing and Urban Development, Office of Policy Development and Research, *Updating the Low-Income Housing Tax Credit (LIHTC) Database Projects Placed in Service Through 2003* (Washington: January 2006), p. 154.

<sup>22</sup> The amount of tax credits available per state and per project is limited. For most states, the number of applications for tax credit financing is greater than the number of projects that receive the tax credits. As developers apply for tax credit financing, the applications are evaluated and scored by state housing officials based upon the planned projects' perceived  
(continued...)

words, are tax credits awarded to projects that would not proceed if not for the tax credit financing? Alternatively, are tax credits awarded to projects that could proceed, and be successfully developed, without the aid of tax credit financing? To the extent that tax credits are awarded to projects not at the margin (i.e., inframarginal projects that could proceed without tax credit financing), it could be argued that the LIHTC does not add to the housing stock.

Thus, the effectiveness of the LIHTC relies heavily on the ability of state housing authorities to select and fund marginal projects. Project financing, along with sponsorship and costs, are criteria used by states in the selection process that could be used in identifying marginal projects. Other factors include the geographic location of the project, local housing needs, resident characteristics, project activities and types, building characteristics, and affordability.<sup>23</sup> These other factors may lead state housing authority officials to select non-marginal projects. If the goal were to focus resources on financing marginal projects, an alternative selection method could be to select the marginal projects first and then, from within that pool, select the projects that meet housing-agency priorities. This alternative would, however, add complexity, time, and cost to the selection process.

Some observers have suggested that state housing authority officials may be more likely to select inframarginal projects, rather than those at the margin, because the former are generally perceived as more likely to succeed.<sup>24</sup> Under such circumstances, rather than selecting “do or die” projects, housing officials may wish to be perceived as successful in supporting housing production; and they may not wish to take risks in selecting projects that may or may not succeed.

The marginality problem is illustrated in **Figure 1**, which shows the market for low-income housing capital. The demand for housing capital slopes downward from left to right, and the supply curve is perfectly horizontal.<sup>25</sup> In Case 1, if the tax credits were widely available to all investors, the tax credit would simply cause a downward shift in the supply curve (as denoted by S). Given the downward-sloping nature of the demand curve, housing stock would increase from  $H_0$  to  $H_1$  (the stock from  $H_0$  to  $H_1$  would be the LIHTC units) and the LIHTC could be said to have increased the stock of housing. But the tax credit is not widely available. Instead, the tax credit is awarded to a few projects by state housing authorities.

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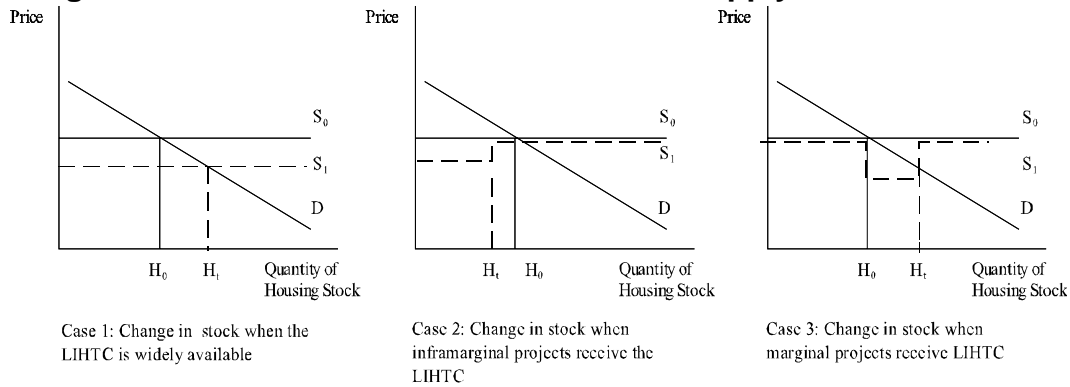
<sup>22</sup> (...continued)

ability to meet certain state-based development preferences.

<sup>23</sup> Jeremy Gustafson and J. Christopher Walker, “Analysis of State Qualified Allocation Plans for the Low-Income Housing Tax Credit Program,” *The Urban Institute, Metropolitan Housing and Communities Policy Center*, May 2002, p. 2.

<sup>24</sup> Inframarginal projects, in this context, are those well within the margin (i.e., projects that could proceed with or without LIHTC funding).

<sup>25</sup> As in all capital markets, the demand curve is the marginal product of capital; the supply curve is the marginal cost of capital, or what has been referred to in this report as the user cost of capital. User cost of capital is also called rental cost of capital and refers to the cost of acquiring and using capital goods

**Figure 1. Potential Effects of LIHTC on the Supply of Affordable Housing**

In Case 2, only a few projects receive tax credits and thus, only a portion of the supply curve for the market shifts downward. In this example, the first few projects (the inframarginal ones) receive tax credits (those up to  $H_1$ ), and yet the total stock of housing is unchanged at  $H_0$  (the units from  $H_1$  to  $H_0$  are unsubsidized). Thus, the tax credit has financed projects that would have been built even without the subsidy. (The applicability of the credit to these “inframarginal” projects can also be viewed as one variety of the “crowding out” process described in the next section.)

Where projects receiving the credit are not on the margin of production, those investors claiming the credit do not have to offer reduced rents (as in the first case at  $S_1$ ) and can, instead, lease the project at the prevailing market rental rates. As long as the LIHTC gross rent restriction is near the market rate, investors have no incentive to discount rents and pass the benefits of the LIHTC onto tenants.

If tax credits are awarded to projects that are marginal, as in Case 3, when the associated portion of the supply curve shifts, there is an addition to the housing stock (from  $H_0$  to  $H_1$ ). While the stock of housing up to  $H_0$  is unsubsidized, the additional stock of housing beyond  $H_0$  is subsidized. In this case, the federal tax revenue loss from the LIHTC is associated with a net gain in the housing stock, and the subsidy may be passed on to tenants as reduced rent.

**Do LIHTC Units Crowd Out Other Housing?** A number of economic studies have examined the question of whether government-subsidized housing actually increases the supply of housing, or simply crowds out unsubsidized production, leaving no net gain in units in the economy. What some studies term crowding out can be viewed as an aspect of the marginality problem described previously. The evidence suggests that some crowding out occurs, but the extent and degree is unclear.

A Congressional Budget Office (CBO) study of the LIHTC concluded that the credit was “unlikely to increase substantially the supply of affordable housing.”<sup>26</sup> Subsidized housing, CBO asserted, displaces other affordable housing that would have been available through the private, unsubsidized housing market. CBO surmised that the increased demand for LIHTC units would cause a decreased demand for non-LIHTC (or unsubsidized) units, resulting in a decrease in the prices of those units. The subsequent price decline would cause suppliers to remove unsubsidized units from the housing stock.<sup>27</sup> If crowding out occurs in this manner, the residents of affordable housing units crowded out by LIHTC units would lose out if those residents were not able to become LIHTC unit tenants. In such a case, developers of LIHTC units would benefit at the expense of owners of other low-cost housing.

Malpezzi and Vandell found a high rate of substitution between current housing stock and LIHTC units, consistent with the CBO findings.<sup>28</sup> Malpezzi and Vandell asserted that if the supply of housing were perfectly elastic (responsive to price changes), then the demand for LIHTC units would cause price declines in the rest of the market as demand for such housing declined. This decline would cause a reduction in the supply of housing until the market price of housing prior to the change was restored. The total stock of housing would ultimately remain the same, but the new LIHTC units would have crowded out “an equivalent quantity of unsubsidized housing.”<sup>29</sup>

Alternatively, Malpezzi and Vandell asserted that if housing supply prices were inelastic (unresponsive) to the presence of the LIHTC, then LIHTC units would still cause price declines in the rest of the market as demand for housing in the rest of the market were to fall. The authors theorized that price declines would make renters in the rest of the market better off while also providing new affordable housing to residents of the LIHTC units.<sup>30</sup> However, price declines could also cause housing suppliers to remove units from the housing stock.

Sinai and Waldfoegel concluded that if subsidized housing raised the quantity of occupied housing per capita, either more people would be finding housing or people would be housed less densely.<sup>31</sup> Alternatively, if subsidized housing merely crowded out equivalent-quality, low-income housing that otherwise would have been provided

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<sup>26</sup> U.S. Congressional Budget Office, *The Cost Effectiveness of the Low-Income Housing Tax Credit Compared to Housing Vouchers* (Washington: GPO, 1992), pp. 2-14.

<sup>27</sup> *Ibid.*

<sup>28</sup> Stephen Malpezzi and Kerry Vandell, “Does the Low-Income Housing Tax Credit Increase the Supply of Housing?” *Journal of Housing Economics*, vol. 11, March 2002, pp. 360-380.

<sup>29</sup> *Ibid.*, p. 364.

<sup>30</sup> *Ibid.*, p. 364. The authors assumed that the number of low-income households was constant and unaffected by the presence or absence of additional housing.

<sup>31</sup> Todd Sinai and Joel Waldfoegel, “Do Low-Income Housing Subsidies Increase Housing Consumption?” National Bureau of Economic Research Working Paper No. 8709, January 2002, pp. 23-24.

by the private sector, housing policy may have little real effect on housing consumption. Sinai and Waldfoel found that government-financed units raised the total number of units in an area, although on average three government-subsidized units displaced two units that would otherwise have been provided by the private market. The authors found there was less crowding out in more populous markets, and more crowding out in places where there was less excess demand for public housing.<sup>32</sup>

Burman and McFarlane determined that, if the supply of low-income housing is very elastic in the long run, then production of limited amounts of subsidized housing replaces other housing that would have been provided by the private sector.<sup>33</sup> The authors concluded that housing subsidized by the government could increase the average quality of housing available to poor people, but would not have a lasting effect on the quantity or price of housing available to poor people.<sup>34</sup>

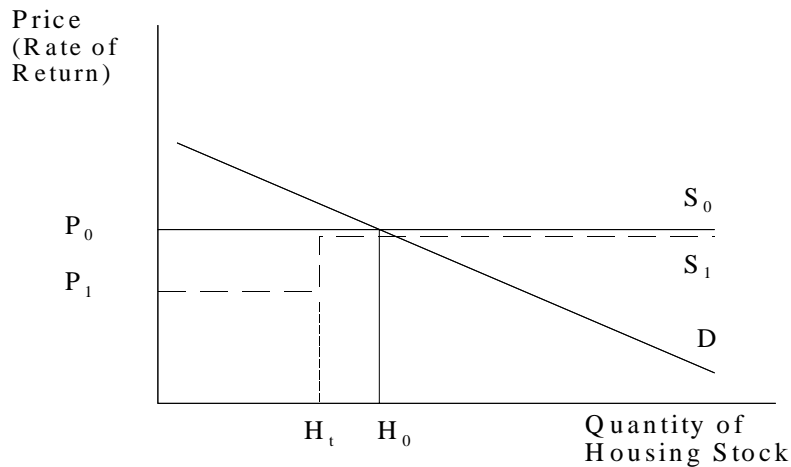
The impact of crowding out on tenants and developers depends on a variety of factors. If LIHTC units crowd out other affordable housing units, developers of LIHTC units benefit at the expense of other developers. Additionally, market forces may allow developers to charge the highest allowable rents under the LIHTC program, which could approximate market rates. As illustrated in **Figure 2**, with the LIHTC contributing to a reduction in costs, the developer could afford to charge rents at  $P_1$ , but demand is high enough such that the developer can continue to charge at  $P_0$  and not risk vacancies. Thus, developers may retain more of the subsidy from the LIHTC, rather than pass it onto tenants.

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<sup>32</sup> Ibid.

<sup>33</sup> Leonard E. Burman and Alastair McFarlane, "Low-Income Housing Credit," in the *Encyclopedia of Taxation and Tax Policy* (Washington, DC: The Urban Institute Press, 2005), pp. 243.

<sup>34</sup> Ibid.

**Figure 2. LIHTC Applies Only to Inframarginal Projects (Case2)**

Case 2: Change in the stock when inframarginal projects receive the LIHTC

If tax credits are awarded to marginal projects and these projects do not crowd out other affordable housing, then LIHTC succeeds in solving the affordable housing problem. The evidence is unclear as to whether marginal projects are being selected. The evidence is also unclear as to whether there are net gains in the affordable housing stock as a result of the LIHTC program; in other words, is the level of new housing stock created by LIHTC units large enough to offset crowding out effects.

Aside from the impact of the LIHTC on the stock of housing, the determination of whether the LIHTC addresses the affordable housing problem also requires an assessment of the “affordability” of the tax credit units.

### **Do LIHTC Units Assist Those Most in Need of Affordable Housing?**

To be eligible for the LIHTC, developers **MUST** meet certain tests that restrict both the amount of rent assessed to tenants and the income of eligible tenants. The two tests are termed “income test” and the “gross rents test.”

The “income test” for a qualified low-income housing project requires that the project owner irrevocably elect one of two income levels and comply with that income level by the end of the first year the project is placed in service. There is either a 20-50 test or a 40-60 test. In order to satisfy the first test, at least 20% of the units must be occupied by individuals with income 50% or less of the area’s median gross income, adjusted for family size. To satisfy the second test, at least 40% of the units must be occupied by individuals with income 60% or less of the area’s median

gross income, adjusted for family size.<sup>35</sup> Area median gross income is published by the U.S. Department of Housing and Urban Development.

A qualified low-income housing project must meet the “gross rents test” by ensuring rents do not exceed 30% of area median gross income of the elected 50% or 60%, depending on which income test the project elected.<sup>36</sup> Gross rents are the total rent for the unit, including any utility allowances for electricity and/or heat.

A criticism of the LIHTC program has been that the program, by its design, does not serve very-low-income households — those most in need of affordable housing. LIHTC developments usually charge rents that are at or close to the maximum permitted by the program. Though rents are restricted, they are not tied to the individual household income of the tenant. Rather, units are leased only to eligible households with enough income to afford the rent.<sup>37</sup>

A recent study published by the National Low Income Housing Coalition<sup>38</sup> reports that the shortage of affordable housing units is greatest for extremely low-income (ELI) households.<sup>39</sup> The report estimates that the number of units needed by ELI households is 2.8 million, up from 1.6 million in 2000. With a total deficit for both ELI and very-low-income households (VLI) of over 10 million affordable and available units, the study also reported a surplus of more than 6 million rental units for higher-income households.<sup>40</sup> Given the program rules governing rents for LIHTC units, the affordable housing deficit for ELI and VLI households is unlikely to be remedied by the tax credit program.

## Is the LIHTC Efficient?

Even if the LIHTC does add to the affordable housing stock, there are questions as to whether it is the most efficient system. The LIHTC involves a complicated subsidy mechanism that adds to the cost of the program relative to its benefits. This section examines three areas in which the program can be examined for

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<sup>35</sup> U.S. Department of the Treasury, Internal Revenue Service, Internal Revenue Code, Section 42(g)(1).

<sup>36</sup> U.S. Department of Housing and Urban Development, Office of Policy Development and Research, *Updating the Low-Income Housing Tax Credit (LIHTC) Database Projects Placed in Service Through 2003* (Washington: January 2006), p. 1.

<sup>37</sup> Kirk McClure, The Low-Income Housing Tax Credit Program Goes Mainstream and Moves to the Suburbs, *Housing Policy Debate*, vol. 17, iss. 3, p. 424.

<sup>38</sup> Danilo Pelletiere, “American Community Survey Estimate Shows Larger National, State Affordable Rental Housing Shortages,” *National Low Income Housing Coalition*, Research Note #07-01, February 21, 2007, pp. 2-3.

<sup>39</sup> Extremely low-income households, in this report, are defined as those households with incomes from 0% to 30% of state median income.

<sup>40</sup> Ibid., Pelletiere. Very-low-income households are defined as those households with incomes from 31% to 50% of state median income.



inefficiencies: (1) the complicated system of distributing tax credits, (2) the value of the credits themselves, and (3) the cost effectiveness of the LIHTC relative to other housing programs.

## Distribution of Credits

The process of allocating, awarding, and then claiming the LIHTC is complex and lengthy. The LIHTC is allocated annually to states according to federal law. State housing agencies are required to allocate credits to developers of rental housing according to federally required, but state-created, allocation plans. Many states have two allocation periods per year. Developers apply for the credits by proposing plans to state agencies. On average, one project out of five may receive an allocation of tax credits. Upon receipt of a LIHTC allocation, developers typically must exchange the tax credits for equity. Taxpayers claiming the tax credits are usually real estate investors, not developers. The tax credits cannot be claimed until the real estate development is complete and operable. For example, a project may be allocated credits in June of 2005 but not completed until June of 2006. The tax credits may not begin to be claimed until the tax return filing period of April 2007. Thus, more than a year or two could pass between the time of tax credit allocation and the time the credit is claimed.

**Housing Finance Agencies.** LIHTCs are allocated to each state according to its population and are typically administered by the state's Housing Finance Agency (HFA). In 2007, HFAs receive annual tax credit allocation authority in the amount of \$1.95 multiplied times the population of the state.<sup>41</sup> The minimum tax credit ceiling for states with small populations is \$2,275,000 in 2007.<sup>42</sup> Tax credits that are not awarded by states are added to a national pool and then distributed to those states that apply for the excess credits. To be eligible for those credits, a state must have allocated all of its previously allotted tax credits.

HFAs award tax credits to developers according to a Qualified Allocation Plan (QAP) that outlines the states' affordable housing priorities and how to apply for tax credits. Federal law requires that the QAP give priority to projects that serve the lowest-income households and that remain affordable for the longest period of time.

The types of projects eligible for the LIHTC are apartment buildings, single-family dwellings, duplexes, or townhouses. Projects may include more than one building. Tax credit project types also vary by the type of tenants served. Housing can be for families and/or special needs populations including the elderly.

**Developers and Investors.** Developers of housing projects compete for tax credits by submitting proposals to the HFA. Types of developers include nonprofit

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<sup>41</sup> From 1986 through 2000, the initial credit allocation amount was \$1.25 per capita. The allocation was increased to \$1.50 in 2001, to \$1.75 in 2002 and 2003, and indexed for inflation annually thereafter. The 2004 allocation was \$1.80, and the 2005 allocation was \$1.85.

<sup>42</sup> The initial minimum tax credit ceiling for small states was \$2,000,000, and was indexed for inflation annually after 2003.

organizations, for-profit organizations, joint ventures, partnerships, limited partnerships, trusts, corporations, and limited liability corporations. For-profit developers can either retain tax credits to reduce their own tax bills or sell them; nonprofit developers sell tax credits.

Trading tax credits, or selling them, refers to the process of exchanging tax credits for equity investment in real estate projects. Developers recruit investors to provide equity to fund development projects and offer the tax credits to those investors in exchange for their commitment. When credits are sold, the sale is usually structured with a limited partnership between the developer and the investor, and sometimes administered by syndicators who must adhere to the complex provisions of the tax code.<sup>43</sup> As the general partner, the developer has a very small ownership percentage, but maintains the authority to build and run the project on a day-to-day basis. The investor, as a limited partner, has a large ownership percentage, with an otherwise passive role. Typically, the investor does not expect the project to produce income. Instead, investors look to the credits, which will be used to offset their income tax liabilities, as their return on investment. The investor can also receive tax benefits related to any tax losses generated through the project's operating costs, interest on its debt, and deductions such as depreciation and amortization. For the investors providing equity to real estate projects in exchange for the credits, there is a primary investment in real estate and a secondary set of tax benefits (the tax credits and any depreciation and/or interest expense).

Investors can be either individuals or corporations. Currently, most LIHTC investors are corporations. In the initial years after the enactment of the LIHTC, public partnerships were the primary source of equity investment in tax credit projects. In recent years, the vast majority of investment has come from corporations, either investing directly or through private partnerships.<sup>44</sup> Different types of investors have different motivations for investing in tax credits. According to one study, investors have reported that the rate of return on investment is their primary purpose for investing in tax credits. Tax sheltering is the second-most highly ranked purpose for investing.<sup>45</sup> An estimated 43% of investors are financial institutions subject to the Community Reinvestment Act (CRA), and investment in LIHTC projects is favorably considered under the investment test component of the CRA.<sup>46</sup> Other investors include real estate, insurance, utility, and manufacturing firms.

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<sup>43</sup> Syndicators are intermediaries who exist almost exclusively to administer tax credit deals. In the early years of the LIHTC, syndicators were more prevalent. In later years, as the number of corporate investors in the LIHTC grew and interacted directly with developers, the role of syndicators diminished.

<sup>44</sup> HousingFinance.com, "Corporate Investment and the Future of Tax Credits: What Should You Expect," at [[http://www.housingfinance.com/housingreferencecenter/Corporate\\_Investment.html](http://www.housingfinance.com/housingreferencecenter/Corporate_Investment.html)].

<sup>45</sup> Jean L. Cummings and Denise DiPasquale, "Building Affordable Housing: An Analysis of the Low-Income Housing Tax Credit," *City Research*, 1998, p. 33.

<sup>46</sup> "The Impact of the Dividend Exclusion Proposal on the Production of Affordable Housing," Ernst & Young report commissioned by the National Council of State Housing Agencies, February 2003, p. 4.



**Table 1. Calculation of the Tax Credit Amount**

Newly Constructed Apartment Building	Amount
Cost	\$500,000
Credit Rate	8.07%
Tax Credits per Year (8.07% x \$500,000)	\$40,356
Total Tax Credits (\$40,350 x 10 years)	\$403,560

**Source:** Author's calculations.

**Note:** This example assumes 100% of the housing units are LIHTC units.

One of the complexities of the tax credit is that the actual tax credit rates employed are not exactly 9% and 4%, and vary on a monthly basis. The tax credit rate is determined so that the total expected present value of the subsidy over the 10-year period is equal to 70% of the project's eligible basis (or cost) in the case of the 9% credit, and 30% in the case of the 4% credit.<sup>47</sup>

The tax credit rates are calculated and released monthly by the U.S. Treasury Department. The rates' values are derived by the Treasury from the mid- and long-term applicable federal rates used by the Treasury for a variety of tax-related purposes. Over the years, the actual 9% rate has ranged from 7.90% to 8.65%, and the current rate is 8.11%. The 4% credit has ranged from 3.33% to 3.68%, and the current rate is 3.48%.<sup>48</sup>

When an LIHTC property is placed in service (ready for occupancy), the rate published for that particular month is the rate used to calculate the credit amount for the project. This aspect of the design of the credit can create a disparity between what developers expect to receive when they win the credit award, and what they may actually receive when the project is placed in service. For instance, if a project won a credit award in June 2005, the credit rate at that time was 8.00%. By the time the project is placed in service, say June 2006, the rate rose to 8.21%. In this example, the rate change is advantageous to the developer, and the final credit amount allocated to the project is higher than the amount projected at the time of the award. However, it is quite possible that the reverse outcome can occur, and when it does, the amount of tax credits the project receives is less than was budgeted at the time of award, creating a disadvantage to the developer.

**Tax Credit Boost.** Enhanced LIHTCs are available for both difficult development areas (DDAs) and qualified census tracts (QCTs) as an incentive to

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<sup>47</sup> An illustration is useful in making clear how the U.S. Treasury's rate is calculated; one appears in **Appendix A**.

<sup>48</sup> U.S. Department of the Treasury, Internal Revenue Service, *Revenue Ruling 2007-9, Table 4, Appropriate Percentages Under Section 42(b)(2) for February 2007*, Internal Revenue Bulletin 2007-6, February 5, 2007.

developers to invest in more distressed areas — areas where the need is greatest for affordable housing, but areas that are among the most difficult to develop.<sup>49</sup> DDAs are locations designated by the Secretary of HUD as places that have high construction, land, and utility costs relative to the areas' median gross income.<sup>50</sup> QCTs are areas designated by the Secretary of HUD as having high poverty relative to the overall population. In particular, QCTs have 50% or more of households in the tract with incomes of 60% of the area median income or less, or a poverty rate of at least 25%. In these distressed areas, the LIHTC can be claimed for 130% (instead of the normal 100%) of the project's total cost, excluding land costs. This also means that available credits can be increased by up to 30%. For instance, if the sample project in **Table 1** were located in a DDA, the tax credits per year would grow from \$40,356 to \$52,455.<sup>51</sup> At the Treasury's discounted rate, the present value of the 10-year stream of payments at \$52,455 yields a 91% effective present value; at the investor's discount rate, the payment stream yields an 84% effective value.<sup>52</sup> Some policymakers have suggested fixing the annual LIHTC rate amounts at 4% and 9% to simplify administration of the program and investment document preparation, as well as to eliminate the uncertainty and financial risk the current floating rate system creates for developers and investors.

**Effective Value of the LIHTC.** The effective value of the credit differs from the statutory value of the credit, further showcasing the complexity of the credit. As described earlier, for a qualified project, the LIHTC provides an investor with a stream of tax credits over a 10-year period whose present value is equal to 70% of the project's cost, assuming a particular discount rate prescribed by law.<sup>53</sup> Based on the author's calculations, the discount rate associated with a credit rate of 8.07% (as used in the example from **Table 1**) is around 3.30%. At this rate the 10-year stream of credits has a present value of 70% of the project's cost.

But an investor may have a discount rate that differs from the applicable federal rates used by the U.S. Treasury, and that discount rate may be higher than the U.S. Treasury rate. This difference is attributable, among other things, to the greater riskiness of private-sector investments. Thus, the investor's actual present value of the credit stream will usually differ from 70% of the eligible project cost. To illustrate, given prevailing bond yields, equity returns, and inflation rates, 4.21% is

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<sup>49</sup> Internal Revenue Code Section 42(d)(5)(C).

<sup>50</sup> U.S. Department of Housing and Urban Development, HUD User Policy Development and Research Information Service, *Statutorily Mandated Designation of Difficult Development Areas for Section 42 of the Internal Revenue Code of 1986*, September 28, 2006, at [[http://www.huduser.org/Datasets/QCT/DDA2007\\_Notice.pdf](http://www.huduser.org/Datasets/QCT/DDA2007_Notice.pdf)].

<sup>51</sup> This example assumes the 30% boost is allocated to development costs, which would become \$650,000 (\$500,000 + 30%). Then the tax credits per year would be [8.07% x \$650,000].

<sup>52</sup> Using the 3.3% discounted rate as applied in **Table 1**, the present value of \$52,455 over 10 years is \$454,849. At the 4.21% rate, the present value falls to \$421,044.

<sup>53</sup> The discount rate of the investor is the minimum rate of return that must be offered to attract investment. The discount rate used in this analysis was derived from a series of equations that are explained in **Appendix B** of this report.

a reasonable approximation of a typical investor's discount rate.<sup>54</sup> Given this rate, a 10-year stream of payments would be valued differently by the firm than as calculated using the Department of the Treasury's method. The numerical example provided in **Table 1** is continued in **Table 2** and indicates that the effective value of the LIHTC to investors can be different when the discount rate of the investor differs from the discount rate used in calculating the monthly value of the LIHTC.

**Table 2. Difference in Valuation of LIHTC  
10-Year Payment Stream**

	Investor	Department of the Treasury
Nominal cash stream	\$40,356	\$40,356
Discount rate	4.21%	3.30%
Present value of future stream of LIHTCs	\$337,528	\$350,000
Effective Value (PV/initial \$500,000 investment)	67.50%	70.00%

**Source:** Author's calculations.

The effective credit value will vary from investor to investor and from period to period, depending on the investor's real discount rate and how widely it diverges from the applicable federal rates used by the Treasury Department to calculate the statutory credit rate each month. Generally, the higher the investor's discount rate compared to the federal rate, the lower the effective value of the credit. This variance in value adds to the complexity of the credit.

Further compounding the complexity of the credit is the equity price that is paid for tax credits. When developers trade tax credits for equity to finance their projects, the tax credit is sold at a discounted rate to investors. Typically tax credits trade for around \$0.95 per one tax credit dollar. So, in the example shown in **Table 1**, equity investors would be willing to provide \$383,382 ( $\$403,560 \times \$0.95$ ) in cash to the developer to become owners of the project.

**Is the Value to Investors too High?** The economic analysis of the LIHTC in this section focuses on one question. What is the size of the tax benefit — and thus the tax incentive — the credit delivers to eligible investors? A discussion follows; the conclusion is that the LIHTC delivers a tax benefit that is quite large on a per-project basis. Specifically, the LIHTC reduces the cost of capital of investors by nearly 80%.

**The Cost of Capital.** Economic theory provides an analytical tool — the user cost of capital — that is a standard method of using economic analysis to measure the

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<sup>54</sup> An example that clarifies how the investor's discount rate was obtained is provided in **Appendix B**.

impact of particular tax benefits on the attractiveness of new investment. In general, the user cost of capital is the rate of return a new investment must earn that is high enough to attract funds from savers, given the possible alternative uses of those funds. The user cost of capital is the standard yardstick against which every potential corporate investment is measured in order to ascertain its worthiness. The investment is considered worthy when the rate of return it will generate exceeds the user cost of the investment. Since savers could purchase stocks or bonds from other sectors of the economy, the investment under analysis must earn at least as much as the alternatives.

The LIHTC has the effect of reducing the cost of capital for the eligible investment. As a result, the tax benefit enables eligible projects to attract more investment funds from alternative uses than would otherwise be possible: the lower the cost of capital, the more investment is undertaken in the tax-favored sector.

The user cost of capital can be used to calculate the value of the LIHTC to investors and to gauge its ability to attract more capital. Specifically, the LIHTC acts to significantly reduce the cost of capital. The mathematical details of the procedure are in **Appendix C**. Given a set of reasonable assumptions, the user cost of capital is estimated at 7.50%, before the LIHTC is applied. When the 9% LIHTC is added, the user cost of capital declines to 1.57%, a reduction of 79.10%. When the investor's discount rate rises, the effective value of the tax credit falls, and the user cost of capital rises. The decline in user cost of capital due to the LIHTC is smaller relative to lower investor discount rates. Similar results, though not as dramatic in terms of declines in user cost of capital, occur with the 4% LIHTC.

To gauge the degree of benefit to investors from the LIHTC, a comparison can be made to other tax credit programs, such as the investment tax credit (ITC) for rehabilitation of structures and the historic rehabilitation tax credit (HRTC). The ITC is equal to 10% of the amount of qualified rehabilitation expenses, and is available for certain structures. The HRTC is equal to 20% of the amount of qualified rehabilitation expenditures, and is only available in connection with certified historic structures. Generally, the full amount of these rehabilitation tax credits is claimed in the year in which the qualified rehabilitation expenditures are placed in service. While the user cost of capital is reduced 79.1% with the LIHTC, the reduction caused by the ITC is 11.7% and the reduction caused by the HRTC is 24%.

The policy questions that remain unanswered are: Is the size of the subsidy justified? If so, how is it justified? If not, what size, if any, is justifiable? Is it possible that the value offered to LIHTC investors includes excessive profits? And, if so, should the program be modified? Further, if the program were to be modified, how should that occur?

## **Is the LIHTC Cost Effective Relative to Other Programs?**

The cost effectiveness of the LIHTC program is typically examined in the context of housing-production programs as compared to housing-consumption programs. Subsidies that support the production of rental housing, like the LIHTC,

are project-based assistance programs, while subsidies that subsidize tenants' ability to pay rent (consume housing) are tenant-based assistance programs. Project-based programs are also referred to as supply programs, while tenant-based assistance programs are referred to as demand programs. Tenant-based assistance is most commonly available in the form of housing vouchers, particularly, the Housing Choice Voucher (HCV) program, also referred to as the Section 8 voucher program.<sup>55</sup>

The economics literature provides mixed views about the relative merits of project-based and tenant-based housing assistance. Tenant-based assistance is promoted on the grounds that it allows residents freedom of choice for both housing and the neighborhood. Yet, some landlords do not accept vouchers and, where vacancy rates are low, voucher holders may face competition for units. The value of vouchers rises and falls with market rents.

Studies on the relative costs of housing programs have generally found that vouchers are less expensive and more cost-effective than production programs. DiPasquale, Fricke, and Garcia-Diaz estimated that, in both metropolitan and nonmetropolitan areas, the average total per-unit cost of each housing-production program exceeded the cost of providing a voucher for a unit of similar size.<sup>56</sup> Their estimates range from 8% to as much as 44% difference in cost for units, depending on the number of bedrooms and the location. For instance, LIHTC costs were 19% more than costs of voucher units. Those costs were for metropolitan areas. When the authors examined nonmetropolitan areas, the differentials rose. Compared to vouchers, LIHTC production costs were 44% higher.<sup>57</sup>

Other studies have confirmed that the cost of production programs outweighs the cost of voucher programs. One economist examined studies of housing assistance programs and found larger excess costs to be associated with housing production programs relative to voucher programs.<sup>58</sup> In particular, the author stated that,

In the absence of distortions that lead to too little housing construction, subsidies that result in the construction of additional housing will inevitably produce dwellings whose construction costs exceed their market values.<sup>59</sup>

As the LIHTC program was examined, the author found that since the tax credit subsidizes initial development of projects but not operating inputs, profit-maximizing firms will invest more in capital resources than other inputs, such as operating

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<sup>55</sup> For more information, see CRS Report RL32284, *An Overview of the Section 8 Housing Programs*, by Maggie McCarty.

<sup>56</sup> Denise DiPasquale, Dennis Fricke, and Daniel Garcia-Diaz, "Comparing the Costs of Federal Housing Assistance Programs," *Federal Reserve Bank of New York Economic Policy Review*, June 2003, pp. 154.

<sup>57</sup> *Ibid.*

<sup>58</sup> Edgar O. Olsen, "The Low-Income Housing Tax Credit: An Assessment," working paper from the University of Virginia Department of Economics, December 2, 2004.

<sup>59</sup> *Ibid.*, pp. 15-16.



expenses and reserves for future maintenance. Because the LIHTC program provides subsidies to selected private suppliers (approximately 30% of applicants), the author argues, the excess demand from private suppliers infers higher returns are available *with* tax credit projects than without. That developers tend to reserve 100% of housing units in a project for low-income households, rather than only meeting the minimum requirement (typically 40%) also suggests, according to the author, that larger profits can be made.<sup>60</sup>

The Government Accountability Office (GAO) also estimated the costs of housing assistance programs. GAO found that first year total costs of LIHTC units were about 32% greater than housing vouchers, and the total federal cost for LIHTC units was 50% greater than vouchers. Over the life of the housing units studied, the total cost of tax credit units was 16% greater than the cost of vouchers and the federal cost of tax credit units was 19% greater than for vouchers.<sup>61</sup>

Aside from comparisons of the costs of tax credit units to other programs, the total costs of the LIHTC program have been criticized because LIHTC projects are dependent on additional subsidies in order to be viable.<sup>62</sup> Many LIHTC projects rely on debt financing from private and government lenders, state-issued tax credits, and other federal housing assistance programs. Additionally, tenants of LIHTC are often housing voucher recipients, further subsidizing the LIHTC project. Estimates of the average subsidy per LIHTC unit have been as high as 96% of total development costs.<sup>63</sup>

Advocates of the LIHTC program, however, argue that the program is cost effective and that deep subsidies for projects are required because of the demands of the affordable housing market, not the LIHTC program.<sup>64</sup>

## Concluding Observations

This report has raised issues for policy makers to consider. First, it is unclear whether the lack of affordable housing is caused by a market failure. Second, it is difficult to assess the question given the problems with the existing definition of affordable housing as well as the lack of available information about the stock of low-cost housing. Third, the question of whether the LIHTC adds to the housing stock is an unresolved empirical question.

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<sup>60</sup> Ibid.

<sup>61</sup> U.S. General Accounting Office, *Costs and Characteristics of Federal Housing Assistance*, GAO-01-901R, July 18, 2001, p. 28.

<sup>62</sup> Jean L. Cummings and Denise DiPasquale, "The Low-Income Housing Tax Credit: An Analysis of the First Ten Years," *Housing Policy Debate*, vol. 10, iss. 2, p. 282.

<sup>63</sup> Ibid., p. 302.

<sup>64</sup> Benson F. Roberts and F. Barton Harvey III, "Comment on Jean L. Cummings and Denise DiPasquale's 'The Low-Income Housing Tax Credit: An Analysis of the First Ten Years,'" *Housing Policy Debate*, vol. 10, iss. 2, pp. 309-320.

## Determine Affordable Housing Market Supply and Demand

One of the difficulties in public policy analysis concerning the issue of affordable housing is that measures of housing affordability are not uniform and data about the number of affordable housing units across the country are not readily available. It would be very useful for policy makers to know the level of affordable housing stock on an annual basis. Additions to the affordable housing stock occur, primarily, in one of two ways — new construction or filtering.<sup>65</sup> Subtractions from the affordable housing stock occur through abandonment and subsequent demolition or upgrades to market-rate housing. Questions include:

- How many new units have been placed in service?
- How many units have been withdrawn from service?
- What is the net gain in the affordable housing stock from these additions and subtractions?
- How do these data vary by state and over time?
- What kind of financing was used to build the housing?
- If the financing of the housing required the units to be affordable, when will the affordability requirement expire?

Some housing analysts use the excess demand for housing as evidence of the affordability problem. Most often, the number of households on rental housing waiting lists is cited as evidence of the affordable housing problem. It may be helpful to policy makers to have an inventory of demand for affordable housing. Knowledge of the number of households waiting for housing and the tenure of their wait would help in clarifying the nature of the affordable housing market.

## Examine LIHTC Applicant Pool

One approach to resolving the question of whether the LIHTC adds to the housing stock would be to systematically examine the LIHTC applicant pool. The effectiveness of the LIHTC relies on the ability of state housing authorities to select marginal projects (those projects that, if not for the LIHTC, would not be developed). Therefore, it would be useful to know whether states are indeed selecting marginal products. Currently, state housing authorities publish data on applicants and award winners of tax credits. Examining the applicants who fail to win credit awards may provide important insights. Do these failed applicants subsequently build housing without the tax credit? Is that housing affordable housing or not? Or, do applicants wait until the next round of award making to re-apply? How many times do they re-apply? After some number of re-applications, do developers simply withdraw?

If some type of housing inventory along the lines discussed in the previous section were to be created, determining additions to the housing stock from the

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<sup>65</sup> Filtering refers to the process of housing conversion, either market-rate units become older and are marketed as affordable housing, or owner-occupied housing is converted to rental housing, some of which becomes categorized as affordable housing. A final form of filtering includes housing that has been withdrawn from the market and then added back, most often in the form of rehabilitation.

LIHTC could be more easily discernable. As LIHTC units are placed in service each year, data on the number of other units placed in service, and withdrawn from service, would provide useful information on net gains or losses to the affordable housing stock.

## Possible Policy Options

This report concludes with comments about selected policy options available to the Congress.

Congress may not alter the LIHTC program. As a tax expenditure, the program does not require an appropriation or reauthorization. If the program remains unaltered, it would continue, essentially as an entitlement program. The only change under this option is that the allocation amounts to states may increase, since they are adjusted for inflation annually.

Alternatively, Congress might modify the LIHTC program. In the 109<sup>th</sup> Congress there were several proposals for administrative change which included renaming the credit, changing the income restrictions for tenants, and increasing the amount of the credit available to states. More recently, some attention has focused on the issue of examining the rules of the LIHTC program to determine where its compatibility with other housing-finance programs can be increased. Other policy suggestions have included eliminating floating tax credit rates and fixing them at the 9% and 4% amounts to eliminate investment uncertainty and to reduce administrative costs. Policymakers have also discussed whether the LIHTC program could be modified to target affordable housing production for households with very-low income.

Another option is to repeal the LIHTC program. The Congressional Budget Office (CBO) examined this option early in 2005, suggesting that the program could be phased out by repealing tax credits for new projects and allowing existing credits to expire. The CBO report estimated that the revenue gain from this option could be as much as \$4 billion between 2006 and 2010.

Proponents of this option argue that, since housing vouchers provide housing assistance to individuals at a lower cost than the LIHTC, then the revenue gain from repealing the LIHTC could be applied to the housing voucher program. Opponents of this option argue that the existing supply of affordable housing is insufficient to satisfy the demands of those with housing vouchers and thus the LIHTC is necessary.

## Appendix A. Calculation of The Value of the LIHTC

As described in the body of the report, the annual LIHTC rate is set by the Treasury Department (as required by statute) so that the discounted present value of the 10-year stream of credits is 70% of the project's cost. The discount rate used in the Treasury's calculation is the after-tax average of mid- and long-term applicable federal interest rates; the assumed tax rate is 28%. In other words

$$\text{PV credits} = 70\% Q$$

where  $Q$  is the cost of the project. Using discrete discounting, this equation translates to

$$\sum_0^9 \frac{k \cdot Q}{(1+r)^i} = 70\% \cdot Q$$

where  $k$  is the LIHTC rate and  $r$  is the Treasury's discount rate. The Treasury Department solves for  $k$  to determine the statutory rate for the 9% credit for the month:

$$k = \frac{70\%}{\sum_0^9 \frac{1}{(1+r)^i}}$$

The Treasury Department also solves for  $k$  to determine the statutory rate for the 4% credit for the month:

$$k = \frac{30\%}{\sum_0^9 \frac{1}{(1+r)^i}}$$

## Appendix B. Calculation of the Discount Rate of the Investor

The investor's discount rate,  $d$ , is the rate of return the investor must earn, after inflation and paying its taxes, in order to attract funds from savers. It is

$$d = (1/3)[i(1-u) - p] + (2/3)[(i-p) + r]$$

where

- $i$  = the nominal interest rate
- $u$  = the marginal tax rate of the investor
- $p$  = the rate of inflation
- $r$  = the risk premium for equity

This equation assumes investors have a ratio of one-third debt financing and two-thirds equity financing, where debt financing is represented by

$$(1/3)[i(1-u) - p]$$

and equity financing is represented by

$$(2/3)[(i-p) + r]$$

The example in **Table 1** stated a discount rate for the investor of 4.21%. This assumes a nominal interest rate of 5.6%, a marginal tax rate of 35%, a 3.4% rate of inflation, and a risk premium for equity of 4%.<sup>66</sup>

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<sup>66</sup> The nominal interest rate is derived from Moody's Corporate Aaa bonds as reported by the Federal Reserve Bank, at [<http://www.federalreserve.gov/releases/h15/data.htm>]. The marginal tax rate of 35% is the highest rate for corporate income tax and is assumed given the expectation that investors are high-income corporations. The inflation rate is obtained from the CPI for All Urban Consumers (CPI-U), which is reported by the Bureau of Labor Statistics, at [<http://www.bls.gov/cpi/home.htm#data>]. The risk premium for equity follows from Jane Gravelle, *The Economic Effects of Taxing Capital Income* (The MIT Press: Cambridge, 1994), p. 293.

## Appendix C. Calculation of the User Cost of Capital

The user cost of capital,  $c$ , is the minimum rate of return a corporation requires on an investment, before taxes, to break even and can be represented in the following manner:<sup>67</sup>

$$c = [(r + d)(1 - uz)] / (1 - u)$$

where  $r$  = the investor's real discount rate  
 $d$  = the rate of economic depreciation  
 $u$  = the statutory corporate tax rate  
 $z$  = the present value of depreciation

The user cost of capital,  $c$ , before the incorporation of the LIHTC, is 7.50% given the investor's real discount rate of 4.21%, a 1.50% rate of economic depreciation, a statutory corporate tax rate of 35%, and a 41.87% present value of depreciation.<sup>68</sup>

When tax credits are added to the equation, user cost becomes

$$c = [(r + d)(1 - uz - taxcredit)] / (1 - u)$$

**Table 3. Changes in User Cost Due to the 9% LIHTC**

	No Tax Credit	LIHTC	Investment Tax Credit (ITC)	Historic Rehabilitation Tax Credit (HRTC)
User cost	7.5%	1.57%	6.62%	5.7%
Percent reduction in user cost	—	79.1%	11.7%	24.0%

The user cost of capital is reduced by tax credits, with the largest reduction caused by the LIHTC at 79.1% as compared to an 11.7% reduction caused by ITC and 24% reduction caused by the HRTC.

<sup>67</sup> Robert E. Hall and Dale Jorgenson, "Tax Policy and Investment Behavior," *American Economic Review*, June 1967, pp. 391-414.

<sup>68</sup> Charles R. Hulten and Frank C. Wykoff, "Tax and Economic Depreciation of Machinery and Equipment: A Theoretical and Empirical Appraisal." Working Paper, U.S. Treasury Department, Office of Tax Analysis, July 1979.