

A New Measure of Housing Affordability: Estimates and Analytical Results

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Abstract

Affordable housing has often been described in terms of rent burden or owner cost burden. This article introduces the concept of housing-induced poverty to describe the situation that arises when a household, after paying for housing, cannot afford the poverty basket of nonhousing goods. This is similar to Stone's shelter poverty concept, except that it is linked to a better-known measure—the official poverty thresholds.

On the basis of the 1999 American Housing Survey, it is estimated that 3.8 million households that were above the official thresholds could not afford the poverty basket of nonhousing goods. In 1999, the housing-induced poverty rate in the United States was 2.7 percentage points higher than the official rate. Results from an analytical model reveal that regional and locational variables are significant determinants of the probability of housing-induced poverty. Housing assistance significantly decreases the probability that near-poor renters will fall into housing-induced poverty.

Keywords: Affordability; Demographics; Poverty

Introduction

In recent years, the affordability problem has become acute in a large number of housing markets across the nation. Housing expenditures have caused many households, both renters and owner-occupants, to reduce their expenditures for food, clothing, health care, education, and other human capital investments. The disparity between housing expenditures and income has led some households to incur additional debt to pay for essential housing expenses,¹

¹ Shipler (2004) suggests that it is common for low-income households to obtain payday loans to pay for utilities and telephone charges.

and it is quite troubling when housing costs reduce nonhousing consumption to a level lower than the minimum subsistence level, as widely accepted.

This article quantifies the extent to which housing costs have led households that are not below the official poverty thresholds to have a poverty standard of living in terms of the nonhousing goods they can afford. The poverty basket of goods, whose value is reflected in the official poverty thresholds, can be seen as representing a minimum subsistence level of housing and nonhousing consumption. A household that cannot afford the poverty basket of nonhousing goods after paying for housing is designated as being in housing-induced poverty. The concept is similar to Stone's shelter poverty (1990, 1993), except that it is based on a well-known measure: the official poverty thresholds. The poverty basket of goods is generally accepted as representing a minimum subsistence level. Despite its limitations, the official poverty concept is widely recognized, easily accessible, and understandable to a variety of audiences.

I use the 1999 American Housing Survey (AHS) to estimate the number and share of households in housing-induced poverty (U.S. Bureau of the Census 2000a). I also specify and estimate a logit model of the factors that affect the likelihood that households in near-poverty (within 150 percent of the threshold) will fall into housing-induced poverty. Finally, I delineate my conclusions and the policy implications of this research.

Literature review

There is a vast literature on the concept of and measurement of poverty in the United States. U.S. poverty thresholds were originally developed in 1964 by the Social Security Administration.² They were based on the Economy Food Plan, the cheapest of four food plans developed by the U.S. Department of Agriculture, which described the plan as designed for “temporary or emergency use when funds are low” (quoted in Orshansky 1965, 6). The 1955 Household Food Consumption Survey found that families of three or more persons spent about one-third of their after-tax income on food in 1955 (Orshansky 1965).³ The cost of the Economy Food Plan for families of three or more was multiplied by three to obtain the poverty thresholds. This method did not assume specific dollar amounts for any budget category other than food. When the poverty measure was developed, no definitive or accepted standards of minimum need for major consumption items other than food existed.

² An important objective of officially measuring poverty was to assess the effectiveness of the social programs introduced in the 1960s—that is, the War on Poverty (O'Connor 2001).

³ This finding related to families at all income levels, not just at lower levels.

Although poverty thresholds had been calculated on the basis of after-tax income, they were applied to data that used a before-tax definition of income. Orshansky, who developed the measure for the Social Security Administration, was aware of this inconsistency, but noted that (at the time the measure was developed), most families of more than two persons as well as elderly unrelated individuals with incomes below the poverty level had no income tax liability (1965).

The official thresholds are revised every year to adjust for price changes. Since 1969, the thresholds have been indexed to the Consumer Price Index (CPI), but they are not revised to reflect changes in the general standard of living. While poverty thresholds are different for different-sized families, they do not vary by location; that is, they are not adjusted to reflect differences in the cost of living in various parts of the country. Since 1981, separate thresholds for families in farm and nonfarm locations and for female-headed (official term currently used by the U.S. Bureau of the Census, “families with a female householder, no husband present”) and male-headed families (current official term, “all other families”)⁴ were discontinued (U.S. Bureau of the Census 1982, 9).

The literature on housing affordability is also quite large. Affordability is frequently interpreted as the relationship between household income (or, more generally, means) and housing expenditure; housing is affordable if expenditure relative to income is reasonable or moderate. Affordability is commonly measured in terms of the ratio of housing costs to income (also known as rent burden or owner cost burden). Over time, thresholds of the housing cost-to-income ratio have been set at 25 percent, 30 percent, 40 percent, and 50 percent.⁵ Households exceeding these cost burdens are identified as having an affordability problem; this is a preferred category for particular types of housing assistance. For example, the reports to Congress on worst-case housing needs (U.S. Department of Housing and Urban Development [HUD] 1996, 1998, 2000, 2003) describe low-income unassisted renters with housing costs

⁴ The poverty thresholds for male-headed families were set higher than those for female-headed families of the same size and composition. The U.S. Department of Justice’s Task Force on Sex Discrimination found that this dichotomy discriminated against women (Fisher 1992).

⁵ The Housing and Community Development Act of 1974 set rents for federal rental housing assistance programs at 25 percent of income. The Omnibus Budget Reconciliation Act of 1981 increased this to 30 percent. Congress enacted laws in 1979 and 1983 establishing a system of preferences for housing assistance. One of these criteria was a housing cost burden in excess of 50 percent of income. The preference rules were published in 1988 (Office of the Federal Register).

exceeding 50 percent of income as facing worst-case needs for housing assistance,⁶ and many HUD programs (such as Section 8 vouchers and certificates) define a housing cost burden of up to 30 percent of income as affordable. This idea also underlies the common practice by mortgage lenders of advising borrowers not to let mortgage payments exceed 29 percent of their gross monthly income.⁷

Some people interpret the multiplication by three in the poverty concept as a normative expectation that a low-income household that spends one-third of its income on food will spend about one-third of its income on housing and the remaining one-third on clothing, education, medical services, transportation, and other goods. The 30 percent threshold used in federal rental assistance programs is close to such a normative expectation. Housing cost burden measures of affordability, however, do not consider whether the income available after the housing expenditure is adequate to meet nonhousing needs. Expenditures for food, education, health care, training, and child care can be seen as vital by a household, so focusing on whether it can afford such basic goods after paying for shelter is important. From a policy standpoint, it is important to understand which households cannot pay for nonhousing needs after they pay for housing because they are likely to be in a more precarious position than those that have high cost burdens but can still pay for minimal nonhousing consumption. A sensible housing policy response would target housing subsidies to the households unable to pay for such goods.

A high cost-to-income ratio might simply indicate a household's preference for a large quantity or high quality of housing. Therefore, a high cost burden alone should not be of concern to policy makers: Even households with very high incomes can be seen as cost burdened. Although most operational definitions of housing cost burden supplement the cost-to-income ratio with some maximum limit on income for housing assistance programs, they do not distinguish between the severity of the problem for households that are within the limit and have enough income left after paying for housing to meet nonhousing needs and those that do not.

Lerman and Reeder (1987) point out that a high cost-to-income ratio can be caused by a household's preference for large or luxurious housing. They therefore propose an affordability measure based on the cost of renting an appropriate amount of housing, as reflected in a standard basket of housing

⁶ "Worst-case needs" is a concept that was created by a subcommittee of the U.S. Senate Appropriations Committee in the mid-1980s.

⁷ Affordable lending programs, however, have allowed considerably higher ratios.

characteristics. This cost is obtained by using hedonic rather than actual rents. If the ratio of this cost to household income exceeds a certain threshold, then the household is viewed as having an affordability problem. This approach is of limited use when the cost of an appropriate amount of housing varies greatly across submarkets and locations because of market imperfections and complex regulatory regimes. It also assumes that there is enough appropriate housing at average rents to meet the demand.

Thalmann (1999) proposes a measure that combines a rent-to-income ratio, a quality-based measure, and a measure of housing consumption. He proposes using the ratio of the average rent in the market for an appropriate bundle of housing and household income. Hedonic price estimates for various housing attributes are used to compute the average rent for an appropriate bundle of housing in a particular market. This measure is then used to develop a housing consumption metric that can distinguish between *apparent* affordability problems (where the household consumes more than the standard housing bundle) and *actual* affordability problems (where the household either pays above-average rents for the housing it consumes or has too little income to afford the standard bundle). Further, this measure can highlight households that do not face affordability problems now because they benefit from below-market rents but could be susceptible in the future if they were forced to move or if their rent discounts were discontinued.

Thalmann's (1999) theoretical model assumes that housing can be divided up into any number of little units and is available everywhere. As pointed out in Hancock (1993), housing market imperfections, including indivisibilities and other nonincome constraints, might prevent a household from consuming the appropriate amount of housing even if the rent were affordable. The Thalmann (1999) model also assumes that appropriate dwellings are available at the average rent, which may not be the case.

Although the measures proposed by Lerman and Reeder (1987) and Thalmann (1999) improve on the standard percentage-of-income affordability measure, they do not consider the actual financial constraints faced by low-income households, many of which cannot afford to spend even 25 or 30 percent of their income on housing. The measure of housing-induced poverty developed in this article, however, explicitly considers a household's standard of living and focuses on the severe affordability problems of a subset of very low income households that cannot pay for even the poverty basket of nonhousing goods.

Stone, the intellectual parent of the housing-induced poverty measure, developed the notion of shelter poverty as a measure of the housing affordability problem (1990, 1993); he pointed out that the conventional afford-

ability measure understates the problem for families with children and other large families versus one- and two-person households. To address this issue, he defined shelter poverty as occurring when housing costs are so high that households cannot afford nonhousing necessities.

In the model described by Stone (1990, 1993), the maximum amount available to spend on housing is the disposable income of the household minus the cost of a minimum adequate level of nonhousing consumption. If a household pays more than the maximum, it is shelter poor. He defined the minimum adequate basket of nonhousing goods as the nonshelter components (other than taxes) of the Bureau of Labor Statistics (BLS) Lower Budgets,⁸ which were discontinued in 1981. He updated the levels using the CPI, but did not adjust the basket of goods to reflect changes over time. These levels were more than two-thirds of the poverty thresholds for the relevant period.

Both shelter poverty and housing-induced poverty reflect a sliding scale of housing cost burdens, which vary by level of income, household size, and household type. These measures recognize the fact that very low income households cannot afford to pay even 25 or 30 percent of their income for housing and still pay for the necessities of life. Housing-induced poverty uses a well-known, current concept: poverty thresholds, which are widely used for judging impoverishment or the lack of it. Shelter poverty relies on a less well known concept and an out-of-date (1981) basket of goods. Data on poverty thresholds and statistics on the extent of poverty are widely available and evaluated by policy makers. Overall, Stone's (1990, 1993) normative minimum basket of nonhousing goods is more generous than the basket implied in the new measure I propose. Hence, the new measure is more useful in setting a lower boundary for the number of households that face housing-induced (or shelter) poverty. With limited resources, the lower boundary may be a better way to identify targets for assistance.

Housing-induced poverty

This article measures a severe form of the housing affordability problem. Specifically, I define housing-induced poverty as the situation that arises when

⁸ The BLS published family budgets reflecting three standards of living—described as Lower, Intermediate, and Higher budgets—in 1967. BLS budget makers used a mix of scientific standards, where available, and standards derived from actual spending patterns to specify lists of goods and services, as well as quantities. Prices collected for the BLS CPI, along with some supplementary prices collected specifically for the family budgets, were used with the quantities to estimate the costs. The last direct pricing of the budgets, that is, the last time that CPI prices and supplementary prices collected specifically for the family budgets were applied to estimate budget costs, was in 1969. After that, budget costs were updated annually through 1981 by indexing to changes in the CPI (Johnson, Rogers, and Tan 2001).

a household, after paying for housing, cannot afford the poverty basket of nonhousing goods. For this purpose, this basket is assumed to be two-thirds of the official poverty line. Thus, a household at the poverty line would enter housing-induced poverty if its housing expenditures exceeded one-third of its income. Households above the poverty line can be reduced to housing-induced poverty if their housing costs are so high that their remaining income is less than two-thirds of the official poverty line for a household of their size. If housing expenditures are very low, it is theoretically possible for a household below the official poverty line to not be in housing-induced poverty; in fact, such a household can be seen as being in housing-induced lack of poverty.

Despite its limitations, the poverty threshold is the official yardstick for assessing poverty status and thus in some sense reflecting basic needs. I use this official measure for the same reasons articulated by Rank and Hirschl: “A major reason for using the official poverty level...is that it represents the measure most used in policy and academic discussions of this topic [poverty]. Although periodically criticized, it remains the benchmark in America for judging impoverishment” (2001, 741). Using this measure of minimum living standards yields a conservative estimate of the number of households with affordability problems.

It is worth noting that housing-induced poverty, although it is an indicator of household distress, is not by the same token a measure of household well-being. The large disparities in housing prices and rents across locations imply that the well-being of households facing the same degree of affordability (whether in terms of housing-induced poverty or housing cost burden) is different. Other things being equal, households that live in inexpensive locations will consume more housing⁹ and thus have higher levels of well-being than households that live in expensive locations and face the same degree of housing-induced poverty. However, if expensive locations have better amenities (such as cultural offerings, financial services, and cheap public transportation), then the well-being of households at these locations could be higher despite their consuming less housing.

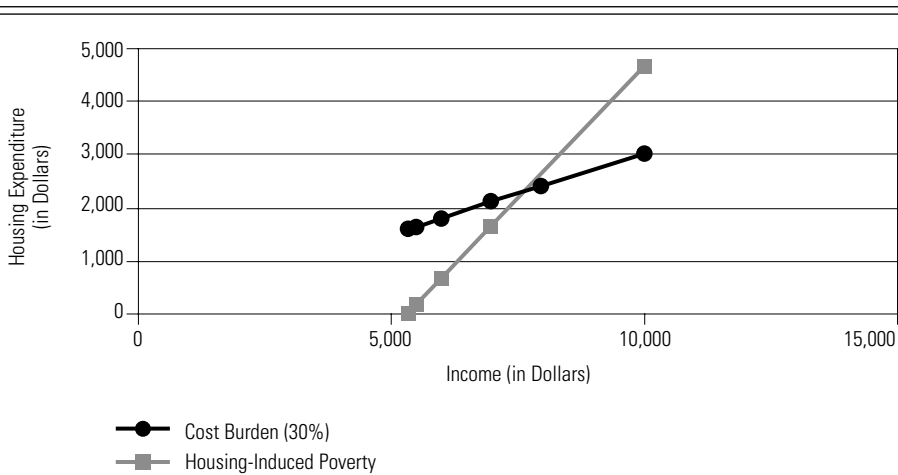
Relationship between housing-induced poverty and conventional housing cost burden measures of affordability

Housing-induced poverty translates into a sliding scale of housing cost-to-income ratio (cost burden); this ratio at the threshold of housing-induced

⁹ More precisely, they will consume more housing if there is any degree of elasticity in the demand for housing.

poverty increases as income increases. For example, in 1999, a one-person nonelderly household was in housing-induced poverty with a cost burden of only 11 percent at an annual income of \$6,000, with a cost burden of 33 percent with an annual income of \$7,990 (the poverty threshold), and with a cost burden of 47 percent with an annual income of \$10,000. Figure 1 illustrates the difference between housing-induced poverty and a cost burden of 30 percent. In the area above the housing-induced poverty line and below the cost burden line are households that would be overlooked by the traditional cost burden measure, although they face a poverty standard of living after paying for housing. Since housing-induced poverty occurs at very low levels of income for households conventionally not considered cost burdened, it can be seen as more sensitive to income than the cost burden measure.

Figure 1. Relationship Between Housing-Induced Poverty and Cost Burden



Source: Author's computations based on the 1999 poverty thresholds (U.S. Bureau of the Census 2000c).

Notes: This figure reflects housing-induced poverty for a single-person, nonelderly household in 1999 (poverty threshold of \$7,990). Cost burden is at 30 percent of household income. At very low incomes, households are in housing-induced poverty at cost burdens below 30 percent. At slightly higher incomes, it occurs with cost burdens in excess of 30 percent.

The housing-induced poverty measure recognizes that consumer choice plays a part in maintaining a high or low housing cost burden. Its focus is on the households deprived of basic necessities because of their housing expenditures. Under this new measure, the households that choose to maintain housing cost burdens in excess of 30 percent, but can still afford basic necessities, are not identified as having an affordability problem.

Some may argue that a household could choose to spend so much on housing that it cannot afford basic nonhousing necessities and hence choose to be in housing-induced poverty. However, if housing expenditures result in inadequate food, clothing, education, and medical services, then it seems likely that there must be compelling reasons driving that household to “choose” to deprive itself of these basic needs. Such compelling reasons might be the fact that cheaper housing is available only very far from employment or at locations that would require the household to severely compromise its safety.

Relationship between housing-induced poverty and shelter poverty

Like housing-induced poverty, the shelter poverty approach explicitly focuses on standard of living. However, the minimum adequate standard of nonhousing goods used by Stone (1990, 1993) is considerably more generous than the standard used in this article (two-thirds of the poverty threshold). As seen in Stone (1990, table A-1), the updated values of the BLS Lower Budget nonshelter, nontax items used in that study for 1985–86 are more than two-thirds of the 1985–86 poverty thresholds. Only the values for one-person elderly and one-person nonelderly households are close to (but still higher than) two-thirds of the poverty threshold. The values for all other types of households are much higher; indeed, they are in the range of 91 percent to 119 percent of the threshold.¹⁰ Thus, the minimum standard of nonhousing goods used in the shelter poverty measure is more generous than the standard used for housing-induced poverty.

While the shelter poverty measure considers the nonhousing items in a household’s budget net of personal taxes (and considers disposable income), the housing-induced poverty measure includes any personal taxes in nonhousing expenditures.¹¹ Because housing-induced poverty has been defined to be consistent with official poverty, it reflects a lower level of consumption than shelter poverty. Undoubtedly, this will yield an underestimate of economic deprivation after housing payments have been made in the same way that the official poverty thresholds are believed to underestimate the true extent of economic deprivation. The poverty thresholds themselves had been presented as a measure of income *inadequacy*, not adequacy. Orshansky’s rationale was that “if it is not possible to state unequivocally ‘how much is enough,’ it should

¹⁰ These values are computed by the author from Stone 1990, table A-1.

¹¹ Although the official poverty thresholds were derived based on the food share of after-tax income, they are applied to before-tax income to measure the number of poor households in the nation.

be possible to assert with confidence how much, on average, is too little” (1965, 3). I use the same rationale for the notion of housing-induced poverty.

Representing a higher standard of nonhousing consumption than is implied by official poverty thresholds, the nonshelter budget used to calculate shelter poverty is less widely accepted than the poverty basket of goods as a minimum standard of consumption.

As noted earlier, there is a narrow range of flexibility within which even low-income households can adjust their housing expenditures. Hence, consumer choice plays a part in both shelter poverty and housing-induced poverty. However, the more basic the nonhousing goods that a household deprives itself of to pay for housing, the more likely that its housing expenditures are not the result of a real choice, but rather a Hobson’s choice. Because the nonhousing goods in the housing-induced poverty measure are more basic than those in the more generous shelter poverty measure, one would expect that housing-induced poverty occurs less from choice than shelter poverty does. Certainly, choice is less of a factor under either of these than it is under the conventional housing cost burden measure.

Data and an operational measure of housing-induced poverty

This study employs data from the Public Use Files of the 1999 AHS, national sample (U.S. Bureau of the Census 2000a). The AHS contains information on household income, household size and composition, and expenditures for occupied housing units in the United States. Poverty thresholds for 1999, published by the U.S. Bureau of the Census (2000c) and based on household size,¹² number of persons in the household under the age of 18, and age of the householder, are used. AHS weights (part of the AHS data set) are used to obtain national estimates.

Housing expenditures in the AHS data include utilities. For homeowners, housing expenditures consist of monthly mortgage payments, taxes, property insurance, and utilities. For renters, they consist of rent, property insurance, and utilities. A more inclusive measure of housing costs for homeowners would be user cost—that is, those same expenditures adjusted for income tax

¹² Although the poverty concept is usually applied to families, it has been applied to households in this article, using household income as the variable determining poverty status. Since the AHS is a household-level survey, households were used as the units of analysis. For the purposes of this article, it makes very little difference whether households or families are used. Official poverty is not defined for people in institutional group settings or for unrelated individuals under age 15 (such as foster children). By applying the concept at the household level, households with such persons can be classified as poor or not poor.

deductions, the opportunity cost of capital, and the capital gains expected from the housing investment.¹³ This article uses the AHS variable that includes monthly mortgage payments, taxes, property insurance, and utilities and reflects out-of-pocket costs that a homeowner must meet on a monthly or yearly basis. Further research with a different data set or with an elaborate set of assumptions about capital gains and tax deductions could incorporate a sophisticated treatment of user costs for homeowners.

Estimates of housing-induced poverty

On the basis of the 1999 AHS (U.S. Bureau of the Census 2000a), I estimate that about 3.8 million of the 88.4 million households that were not in official poverty suffered from housing-induced poverty. That is, after paying for housing, 4.3 percent of the households not in poverty could not afford the poverty basket of nonhousing goods.

As reported in table 1, there were 14,410,000 households in poverty in 1999. It is interesting to note that not all households in official poverty were also in housing-induced poverty. Nearly a million households in poverty (957,614, or 6.7 percent of the households in poverty) did not experience housing-induced poverty; after paying for housing, they could afford more than the poverty basket of nonhousing goods. An overwhelming majority of households in poverty, however—13,452,386 or about 93.4 percent—did experience housing-induced poverty. Adding the 3.8 million nonpoor households in housing-induced poverty to these poor households increased the ranks of those in housing-induced poverty to 17.2 million.

The official poverty rate for households in occupied housing units in 1999 was 14.0 percent. However, 16.8 percent of the households in occupied units could not afford the poverty basket of nonhousing goods, so the housing-induced poverty rate was about 2.7 percentage points higher than the official poverty rate.

It is not surprising that most households that experience housing-induced poverty are in near-poverty, defined as having an income between 100 percent and 150 percent of the official poverty threshold. I estimate that of the roughly 3.8 million households not in official poverty but experiencing housing-induced poverty, more than 2.7 million (or 71.8 percent) were in near-poverty.

¹³Deriving a measure of user cost involves making assumptions about the marginal income tax rates of households and whether or not they claim deductions. It also involves making assumptions about the expected capital gains in the many diverse markets where the homes in the sample are located.

Table 1. Official Poverty Status and Housing-Induced Poverty

Household Category	Number of Households	Proportion of Relevant Group
In official poverty	14,410,000	14.0% of all households
Not in housing-induced poverty and in official poverty	957,614	6.7% of households in poverty
In housing-induced poverty and in official poverty	13,452,386	93.4% of households in poverty
Not in official poverty	88,390,000	86.0% of all households
Not in housing-induced poverty and not in official poverty	84,620,000	95.7% of households not in poverty
In housing-induced poverty and not in official poverty	3,769,895	4.3% of households not in poverty
In near-poverty	9,521,032	10.8% of households not in poverty
Not in housing-induced poverty and in near-poverty	6,814,772	71.6% of households in near-poverty
In housing-induced poverty and in near-poverty	2,706,260	28.4% of households in near-poverty
Total in housing-induced poverty	17,222,281	16.8% of all households

Source: Author's computations based on the 1999 AHS (U.S. Bureau of the Census 2000a).

Note: Totals may not sum to 100 percent because of rounding.

Up to 28.4 percent of the 9.5 million households in near-poverty in the United States in 1999 fell into housing-induced poverty.

My computations, based on the 1999 AHS, indicate that there were 30,120,000 households that had housing cost burdens exceeding 30 percent of income—a substantially larger number than the 17,222,281 households that were in housing-induced poverty. Table 2 describes the poverty status of the cost-burdened households. Although the number of cost-burdened households exceeds the number in housing-induced poverty by nearly 75 percent, more households in official poverty faced housing-induced poverty than were cost burdened, 13.5 million versus 12.0 million households. Thus, nearly 1.5 million households that were in official poverty and could not afford basic nonhousing goods after paying for housing would be overlooked when cost burden is used to measure the affordability problem. Among households not in official poverty, more than one-fifth were cost burdened, but only 4.3 percent were in housing-induced poverty.

Table 2. Official Poverty Status and Cost-Burdened Households

Household Category	Number of Households	Proportion of Relevant Group
In official poverty	14,410,000	14.0% of all households
Not cost-burdened and in official poverty	2,432,688	16.9% of households in poverty
Cost-burdened and in official poverty	11,980,000	83.1% of households in poverty
Not in official poverty	88,390,000	86.0% of all households
Not cost-burdened and not in official poverty	70,250,000	79.5% of households not in poverty
Cost-burdened and not in official poverty	18,140,000	20.5% of households not in poverty
Total cost-burdened households	30,120,000	29.3% of all households

Source: Author's computations based on the 1999 AHS (U.S. Bureau of the Census 2000a).

Selected characteristics of households in housing-induced poverty

I compare selected characteristics of households in housing-induced poverty with those of households in official poverty, in near-poverty, or not in poverty, as appropriate. These descriptions help identify the locations and population groups where housing-induced poverty is more prevalent.

Geographic distribution

Housing costs faced by low-income households vary dramatically across the United States. The dynamics of sectoral economic development, migration patterns, gentrification, changes in housing policies, and other factors have caused wide disparities in housing prices and rents. Therefore, it is important to examine the geographic distribution of households in housing-induced poverty (see table 3).

Among the four census regions, households in near-poverty were most vulnerable to falling into housing-induced poverty in the Northeast and in the West. Some 36.8 percent and 35.5 percent of the households in near-poverty in the Northeast and the West, respectively, could not afford the poverty basket of nonhousing goods. A relatively lower proportion of households in near-poverty in the Midwest and the South had this problem—22.9 percent and 23.4 percent, respectively. (This is due to the lower housing costs typical of these two regions.)

Among the categories presented in table 3, areas where more than 40 percent of the households in near-poverty fell into housing-induced poverty include suburbs in the Northeast and central cities and urban suburbs in the West. The proportion of the households in near-poverty that were also in

Table 3. Geographic Distribution of Households in Near-Poverty

Region and Location	Households in Near-Poverty	Near-Poor and in Housing-Induced Poverty	Proportion of Near-Poor Households That Are in Housing-Induced Poverty (%)
Northeast	1,782,348	655,828	36.8
Central city	738,008	256,908	34.8
Urban suburb	543,126	247,848	45.6
Urban nonmetropolitan	108,439	31,618	29.2
Rural suburb	206,932	86,302	41.7
Rural nonmetropolitan	185,843	33,152	17.8
Midwest	2,049,638	469,886	22.9
Central city	674,812	196,092	29.1
Urban suburb	403,738	130,259	32.3
Urban nonmetropolitan	319,977	49,172	15.4
Rural suburb	174,355	37,148	21.3
Rural nonmetropolitan	476,756	57,215	12.0
South	3,625,813	847,613	23.4
Central city	984,875	338,814	34.4
Urban suburb	803,202	238,185	29.7
Urban nonmetropolitan	406,991	81,060	19.9
Rural suburb	606,892	100,148	16.5
Rural nonmetropolitan	823,853	89,406	10.9
West	2,063,233	732,933	35.5
Central city	756,682	318,380	42.1
Urban suburb	730,402	301,025	41.2
Urban nonmetropolitan	209,943	49,379	23.5
Rural suburb	139,379	32,106	23.0
Rural nonmetropolitan	226,827	32,043	14.1
Total	9,521,032	2,706,260	28.4

Source: Author's computations based on the 1999 AHS (U.S. Bureau of the Census 2000a).

Note: In several locations, more than a quarter of near-poor households slipped into housing-induced poverty. Nationwide, 28.4 percent of near-poor households slipped into housing-induced poverty.

housing-induced poverty was the highest in urban suburbs in the Northeast—45.6 percent. Other locations where more than one-third of the households in near-poverty were in housing-induced poverty were central cities in the Northeast (34.8 percent) and South (34.4 percent). These descriptions suggest that low-income households in urban suburbs in the Northeast and central cities and urban suburbs in the West deserve special attention since they are very likely to face housing-induced poverty. Even though near-poor

households at these locations do not live in poverty as measured conventionally, in reality, large numbers of them cannot afford to live at the poverty standard.

Households in near-poverty that were also in housing-induced poverty were found in the largest numbers in the central cities and urban suburbs of the South, West, and Northeast. These locations contained 62.9 percent of all the households in near-poverty that fell into housing-induced poverty nationwide.

My computations (not presented in the tables) indicate that the distribution of housing-induced poverty is different from that of official poverty across the nation. The South has a lower share of households in housing-induced poverty (37.5 percent) than of households in official poverty (40.5 percent); the Northeast and the West both have higher shares (19.7 percent versus 17.7 percent, and 22.8 percent versus 21.0 percent, respectively).

Income of households in housing-induced poverty

Households in housing-induced poverty are expected to have very low incomes. In 1999, a majority of households in housing-induced poverty but not in official poverty (77.3 percent) had an annual income of between \$5,000 and \$20,000.

Tenure status of households in housing-induced poverty

Table 4 describes the tenure status and presence of housing-induced poverty for households that were not in official poverty. About half of the households that were not in official poverty but were experiencing housing-

Table 4. Tenure Status and Housing-Induced Poverty of Households Not in Official Poverty

	Number of Households	Owners	Renters
In housing-induced poverty but not in official poverty	3,769,895	1,878,009 (49.8%)	1,884,854 (50.0%)
Not in housing-induced poverty and not in official poverty	84,620,000	60,540,000 (71.5%)	22,770,000 (26.9%)
Total not in official poverty	88,389,895	62,418,009 (70.6%)	24,654,854 (27.9%)

Source: Author's computations based on the 1999 AHS (U.S. Bureau of the Census 2000a).

Note: The percentages do not add to 100 because the small remainder consists of households that did not pay any monetary rent. More such households were found among those not in housing-induced poverty. The numbers of owners and renters do not add to the total number of households for the same reason.

induced poverty were homeowners, and the remaining half were renters (both almost 1.9 million). Renters were overrepresented among the households that were not in official poverty but were experiencing housing-induced poverty. While renters made up 27.9 percent of all households not in official poverty, they made up 50.0 percent of renters experiencing housing-induced poverty. The lower income of renters and their higher housing expenditures (at equivalent levels of income) likely contributed to this outcome.

Racial and ethnic distribution

Table 5 describes the racial and ethnic distribution of households in housing-induced poverty and of all households in the United States. The housing-induced poverty rate is higher than the official poverty rate for each of the racial and ethnic categories shown in table 5. The difference in terms of the percentage of the poverty rate is most pronounced for Asian and Pacific Islanders and non-Hispanic whites. However, the difference in terms of percentage points is greater for each of the minority categories than it is for non-Hispanic whites. A total of 1 in 4 Hispanic households was in housing-induced poverty in 1999, as was a higher proportion of black households: 3 out of 10.

Households that cannot afford even the poverty basket of goods after paying for housing can be seen as needing housing assistance on a priority basis. Currently, housing assistance programs aim at lowering housing cost burdens to the levels considered affordable. Hence, households with high cost burdens are said to need assistance on a priority basis. HUD's reports on worst-case housing needs identify households with severe cost burdens as facing the most urgent need for assistance (1996, 1998, 2000, 2003). As seen in figure 2, if housing-induced poverty instead of a housing cost burden of more than 30 percent were used to target housing assistance, then blacks would form a greater share of the targets of assistance (25 percent versus 19 percent). Also, the share of non-Hispanic whites among households in housing-induced poverty is smaller than its share among cost-burdened households (66 percent versus 72 percent).

The racial and ethnic distribution of the households that are not in official poverty, but experience housing-induced poverty, is described in table 6. The housing-induced poverty rate among households not in official poverty was greater for blacks (6.8 percent), Asian and Pacific Islanders (6.4 percent), and Hispanics (6.4 percent) than it was for non-Hispanic whites (3.6 percent). This suggests that minority households that are not in official poverty are more

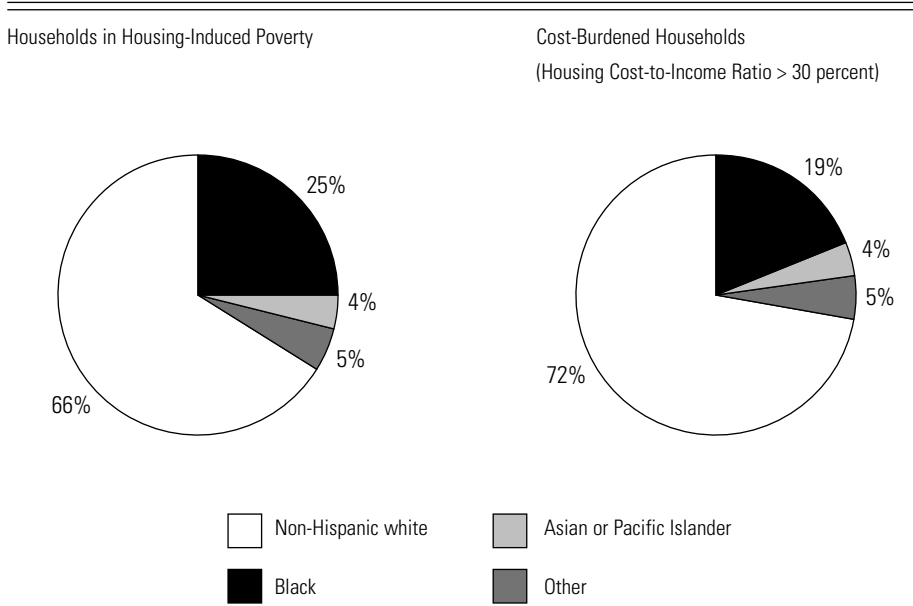
Table 5. Racial and Ethnic Distribution of Households in Housing-Induced Poverty

Race/Ethnicity	All Households	Households in Housing-Induced Poverty	Cost-Burdened Households	Households in Official Poverty	Households in Housing-Induced Poverty/ All Households (Housing-Induced Poverty Rate)	Cost-Burdened Households/ All Households (%)	Households in Official Poverty/ All Households (Official Poverty Rate)
Non-Hispanic white	76,890,000	10,240,000	19,730,000	8,328,511	13.3	25.7	10.8
Black	12,940,000	3,890,626	5,361,285	3,440,840	30.1	41.4	26.6
Asian and Pacific Islander	3,048,707	557,649	1,133,282	400,277	18.3	37.2	13.1
Other	3,193,679	838,739	1,309,424	754,987	26.3	41.0	23.6
Hispanic	9,041,209	2,340,756	3,564,903	2,058,973	25.9	39.4	22.8

Source: Author's computations based on the 1999 AHS (U.S. Bureau of the Census 2000a).

Notes: Other includes American Indians, Aleutians, Eskimos, and other races. Hispanics may be of any race.

Figure 2. Racial Composition of Households in Housing-Induced Poverty and Cost-Burdened Households



Source: Author's computations based on the 1999 AHS (U.S. Bureau of the Census 2000a).

Notes: A greater proportion of blacks is represented among households in housing-induced poverty than among cost-burdened households. Other includes American Indians, Aleutians, Eskimos, and other races.

Table 6. Racial and Ethnic Distribution of Nonpoor Households in Housing-Induced Poverty

Race/Ethnicity	Households Not in Poverty	Households in Housing-Induced Poverty but Not in Poverty	Households in Housing-Induced Poverty but Not in Poverty/Households Not in Poverty (%)
Non-Hispanic white	68,560,000	2,485,654	3.6
Black	9,495,340	644,058	6.8
Asian and Pacific Islander	2,648,430	170,027	6.4
Other	2,438,692	141,281	5.8
Hispanic	6,982,236	449,004	6.4
Total nonpoor households	88,390,000	3,769,895	4.3

Source: Author's computations based on the 1999 AHS (U.S. Bureau of the Census 2000a).

Note: Other includes American Indians, Aleutians, Eskimos, and other races. Hispanics may be of any race.

likely to live at the poverty standard (in terms of nonhousing consumption) than their non-Hispanic white counterparts.

Housing assistance status of households in housing-induced poverty

Table 7 contrasts the housing assistance status of renters that were in near-poverty in 1999 and were experiencing housing-induced poverty with their counterparts who were not experiencing housing-induced poverty. Among the renters in near-poverty, a greater proportion of those who were not in housing-induced poverty versus those who were received subsidized housing (22.1 percent versus 10.2 percent, respectively). However, a slightly lower proportion of those who were not experiencing housing-induced poverty lived in units covered by rent control or stabilization (2.9 percent versus 3.8 percent). It is worth noting that 1 out of 10 renters who were in near-poverty and received rental assistance was in housing-induced poverty despite the assistance.

Table 8 describes the special mortgage status of homeowners in near-poverty. In this group, a greater proportion of homeowners in housing-induced poverty versus those who were not had obtained subsidized mortgages from state or local programs (6.6 percent versus 3.5 percent, respectively). The proportion with Federal Housing Administration (FHA) mortgages was three times greater among homeowners who were in housing-induced poverty than among those who were not (9.4 percent versus 3.1 percent, respectively). The proportion with Department of Veterans Affairs (VA) mortgages was slightly higher among homeowners in housing-induced poverty than among those who were not (2.2 percent versus 1.2 percent, respectively).

These special mortgage programs are used by home buyers with lower incomes and typically require a lower down payment, which implies higher monthly payments. These factors probably contribute to the finding of a greater use of special mortgages among homeowners facing housing-induced poverty.

Table 7. Rent Adjustment Status of Renters in Near-Poverty

Type of Adjustment	Households in Housing-Induced Poverty (%)	Households Not in Housing-Induced Poverty (%)
Rent subsidy, public housing, or certificates/vouchers	10.2	22.1
Rent control or stabilization	3.8	2.9
Reduced rent due to relationship with owner	3.0	3.1
No monetary rent	2.2	1.7

Source: Author's computations based on the 1999 AHS (U.S. Bureau of the Census 2000a).

Note: Those who pay no monetary rent can have housing costs because of utilities and insurance.

Table 8. Special Mortgage Status of Homeowners in Near-Poverty

Type of Mortgage	Households in Housing-Induced Poverty (%)	Households Not in Housing-Induced Poverty (%)
Subsidized mortgage from state or local programs	6.6	3.5
FHA	9.4	3.1
VA	2.2	1.2
Farmers Home Administration	0.6	0.5

Source: Author's computations based on the 1999 AHS (U.S. Bureau of the Census 2000a).

Analytical model of the likelihood of housing-induced poverty

The descriptive analysis in the previous section sheds light on some of the characteristics of households in housing-induced poverty. It does not, however, help explain the independent influence of a particular factor such as location on near-poor households when other relevant factors have been controlled for. In this section, I specify a model of the probability that a household in near-poverty will fall into housing-induced poverty. This model controls for relevant factors and explores the influence of several factors on the likelihood of housing-induced poverty. I postulate a logit model where the dependent variable is the probability of housing-induced poverty, which is a dichotomous dummy variable. The model is estimated for all households in near-poverty, for homeowners in near-poverty, and for renters in near-poverty.

Variables

The independent variables in the model for all households in near-poverty include regional and locational variables, reflecting differences in housing market conditions. Some household characteristics, such as the number of children and elderly status, are included as independent variables to investigate whether certain types of households are more or less likely to fall into housing-induced poverty. The relationship between the form of tenure and housing-induced poverty is also explored. The distance from poverty is controlled for by variables measuring household income as a proportion of the poverty threshold. Other independent variables include dummy variables that indicate whether the household pays less than the market price for housing because of government programs or regulations or because of a private relationship with the owner. A household that receives a mortgage subsidy, a rent subsidy, a rent voucher, or a certificate¹⁴; lives in public housing; or lives in a rent-controlled

¹⁴ A rent voucher or certificate is a specific form of subsidy under HUD's Section 8 tenant-based assistance program (now called the Housing Choice Voucher Program).

or -stabilized dwelling is seen as paying less than the market price for housing because of government programs or regulations.¹⁵ Three forms of tenure are included as independent variables in the model—homeownership, monetary rent, and nonmonetary rent. Food stamp receipt is included as an independent variable because it affects the affordability of goods within a given income level.

In the model for homeowners in near-poverty, the probability of falling into housing-induced poverty is modeled as a function of regional and locational variables, receipt of a mortgage subsidy, special mortgage status (FHA, VA, or Farmers Home Administration [FmHA]), presence and number of children, elderly status, income as a percentage of the poverty threshold, and receipt of food stamps. Thus, the model specifically investigates whether public policy programs such as mortgage subsidies and federally sponsored mortgages influence the probability of housing-induced poverty.

In the model for renters in near-poverty (estimated only for those who pay monetary rent), the dependent and independent variables are the same as in the model for homeowners, with a few exceptions. The two mortgage variables are replaced by one variable describing whether the household receives a subsidy, lives in public housing, or receives a housing voucher or certificate¹⁶ and another describing whether the household lives in a rent-controlled or -stabilized unit. Thus, the model investigates whether these public policy programs affect the probability of housing-induced poverty.

Estimation results

The parameter estimates of the three models are presented in table 9. Housing price, rents, and other housing costs vary substantially by location. It is not surprising that 10 of the 15 regional and locational variables in the model for all households in near-poverty had parameter estimates that were statistically significant at conventional levels. Households located in nonmetropolitan areas in each of the four census regions had a lower proba-

¹⁵ It is believed that in some cases, the contract rent of subsidized housing has been allowed to rise well above local market levels. In such cases, a subsidy may not reflect below-market housing costs to the household. The recent mark-to-market legislation, designed to address this problem and bring rents down to market levels, is discussed in Smith (1999).

¹⁶ These categories of renter assistance were not treated as separate variables because previous studies (such as Rucinski and Athey 1995) have shown that many AHS respondents do not correctly distinguish between public housing and other forms of rental assistance. Another drawback of using separate categories is that the number of households under each type of assistance is small.

Table 9. Estimates of the Models of the Determinants of Housing-Induced Poverty among Households in Near-Poverty

Independent Variable	Households in Near-Poverty N = 4,274		Owners in Near-Poverty N = 2,144		Renters in Near-Poverty N = 2,002	
	Parameter Estimate	(Odds Ratio)	Parameter Estimate	(Odds Ratio)	Parameter Estimate	(Odds Ratio)
Intercept	-1.99***		-1.92***		-2.81***	
Northeast central city	0.27*	(1.3)	0.52**	(1.7)	0.10	
Northeast urban suburb	0.82***	(2.3)	1.06***	(2.9)	0.57**	(1.8)
Northeast rural suburb	0.52**	(1.7)	0.68**	(2.0)	0.67	
Northeast nonmetropolitan	-0.57*	(0.6)	-0.34		-1.21	
West urban suburb	0.70***	(2.0)	0.72***	(2.1)	0.65***	(1.9)
West rural suburb	-0.09		-0.24		-0.15	
West nonmetropolitan	-0.57*	(0.6)	-0.42		-0.76	
Midwest central city	-0.04		0.27		-0.43**	(0.7)
Midwest urban suburb	0.45***	(1.6)	0.63***	(1.9)	0.19	
Midwest rural suburb	-0.24		-0.14		-0.23	
Midwest nonmetropolitan	-1.03***	(0.4)	-0.69**	(0.5)	-2.11***	(0.1)
South central city	0.14		0.01		0.05	
South urban suburb	0.20		-0.11		0.54**	(1.7)
South rural suburb	-0.59 ***	(0.6)	-0.62**	(0.5)	-0.10	
South nonmetropolitan	-1.21***	(0.3)	-0.99***	(0.4)	-1.75***	(0.2)
Omitted: West central city						
Owner	-0.46***	(0.6)				
Renter, no monetary rent	-3.00***	(0.1)				
Omitted: Renter, monetary rent						
Nonmarket housing price (subsidy or regulated)	-0.60***	(0.6)				
Private adjusted housing price	0.09				-0.03	
Subsidized mortgage			0.00			
FHA, VA, or FmHA mortgage			1.00***	(2.7)		
Rent control or stabilization					0.17	
Rent subsidy, public housing or voucher/certificate					-1.76***	(0.2)
No children	0.66***	(1.9)	0.35**	(1.4)	1.10***	(3.0)
4 or more children	-0.68***	(0.5)	-0.63**	(0.5)	-1.06***	(0.4)
Omitted: 1 to 3 children						
Elderly	-0.42***	(0.7)	-0.68***	(0.5)	0.35**	(1.4)
Income 100 to 110% of poverty	2.30***	(10.0)	1.80***	(6.0)	3.33***	(28.0)
Income 110 to 120% of poverty	1.64***	(5.2)	1.09***	(3.0)	2.54***	(12.6)
Income 120 to 130% of poverty	1.04***	(2.8)	0.70***	(2.0)	1.58***	(4.8)

Table 9. Estimates of the Models of the Determinants of Housing-Induced Poverty among Households in Near-Poverty *Continued*

Independent Variable	Households in Near-Poverty N = 4,274		Owners in Near-Poverty N = 2,144		Renters in Near-Poverty N = 2,002	
	Parameter Estimate	(Odds Ratio)	Parameter Estimate	(Odds Ratio)	Parameter Estimate	(Odds Ratio)
Income 130 to 140% of poverty	0.47***	(1.6)	0.28		0.89***	(2.4)
Omitted: 140 to 150% of poverty						
Received food stamps	-0.29**	(0.8)	-0.33		-0.23	
Log-likelihood chi-square	824.6 <i>df</i> = 27; <i>p</i> < 0.0001		304.4 <i>df</i> = 25; <i>p</i> < 0.0001		652.8 <i>df</i> = 26; <i>p</i> < 0.0001	
Percent concordant/Percent discordant	76.2/23.4		73.2/26.1		82.0/17.6	

Source: Author's computations based on the 1999 AHS (U.S. Bureau of the Census 2000a).

Notes: Nonmetropolitan includes urban and rural nonmetropolitan areas. The renters model was estimated only for those who pay monetary rent. Hence, the total of the renters and owners models does not add up to the total households in near-poverty.

p* < 0.1. *p* < 0.05. ****p* < 0.01.

bility of falling into housing-induced poverty. Households in nonmetropolitan areas in the South and Midwest had particularly low probabilities.

This can be explained in part by the fact that housing prices and rents tend to be lower in nonmetropolitan areas than in metropolitan urban and suburban areas. Land prices are substantially lower in nonmetropolitan areas, and complying with housing regulations is likely to be more costly in densely populated metropolitan urban and suburban areas because of more elaborate regulations and stricter enforcement.

However, households located in the urban suburbs of the Northeast, West, and Midwest and in the central cities of the Northeast were more likely to fall into housing-induced poverty than households in the central cities of the West. It is surprising that households in the rural suburbs of the Northeast had a higher probability of being in housing-induced poverty than households in the central cities of the West and the urban suburbs of the Midwest. One possible reason is that the 1999 AHS uses geographic designations fixed in 1980¹⁷;

¹⁷ Old geographic designations are used to maintain the confidentiality of the responding households. The 1999 AHS used designations of rural, urban, nonmetropolitan areas, and so on, based on the characteristics of the locations in 1980 (U.S. Bureau of the Census 2003). These designations are infrequently updated in order to protect the confidentiality of households. For example, if a sample household changed classification from rural to urban between 1980 and 1990, and there were very few sample households in a geographic area that changed classification in this manner, then on the basis of other information in the AHS (such as structure type or fuel type), this household could be identified as the unique household that had all the other characteristics (in the AHS) and whose designation had changed from rural to urban.

some of the areas designated as rural in the survey might have changed character and become urban over time, and this change is more likely to have occurred in the Northeast.

Regional and locational variables were also significant determinants of the probability of housing-induced poverty in the models for both homeowners and renters. The pattern of the results was generally similar to that for all households in near-poverty, but with some exceptions. For example, at conventional levels of statistical significance, renters in near-poverty in the central cities of the Northeast were not more likely to fall into housing-induced poverty than renters in the central cities of the West; however, homeowners in near-poverty at these locations were more likely to do so.

In the model for all households in near-poverty, renters who pay monetary rent were more likely to be in housing-induced poverty than owners. Not surprisingly, renters who paid no monetary rent had a very low likelihood of housing-induced poverty. The odds ratio estimate for this variable was the lowest of all the variables in the model. Housing costs, on average, tend to be higher for renters who pay monetary rent than for owners, a fact that may drive the result.

In the model for all households in near-poverty, government subsidy programs and regulations aimed at lowering housing costs significantly reduced the likelihood of housing-induced poverty. In the model for renters, receiving a government rent subsidy, living in public housing, or using a housing voucher or certificate very significantly reduced the probability of housing-induced poverty. This variable had the second-lowest odds ratio of all the variables in the model for renters. However, living in a rent-controlled or -stabilized unit had no significant effect on the likelihood of housing-induced poverty.

In the model for homeowners in near-poverty, obtaining a low-cost (subsidized) mortgage through a state or local government program had no effect on the probability of housing-induced poverty, while obtaining an FHA, VA, or FmHA mortgage very significantly raised the probability. These federal mortgage programs have made homeownership possible for many low-income households and thus, theoretically, have provided them with the opportunity to accumulate wealth. These programs typically require very low down payments, which, other things being equal, imply higher monthly mortgage payments. Model results suggest that the substantial monthly expenditures (relative to income) entailed by these mortgage programs may crowd out basic nonhousing consumption for very low income homeowners.

These results do not imply that homeowners using these federally sponsored mortgage programs have a higher probability of housing-induced

poverty than renters, just a higher probability than other owners. The model indicated that for all households in near-poverty, homeowners had a lower likelihood of housing-induced poverty than renters. By enabling homeownership for very low income households, these federal programs could be reducing housing-induced poverty. Homeownership that allows the accumulation of wealth can be viewed as reducing future poverty and housing-induced poverty, even if certain types of mortgages increase the likelihood of housing-induced poverty in the near term for some low-income homeowners.¹⁸

The variables denoting household income as a percentage of the poverty threshold had a significant influence on the likelihood of housing-induced poverty. The more incomes rise above the poverty level, the lower the likelihood of housing-induced poverty. Thus, households with income between 100 percent and 110 percent of the poverty level were most likely to fall into housing-induced poverty.

A household with no children had a higher likelihood of housing-induced poverty than a household with one to three children, and the likelihood of housing-induced poverty was lower for households with four or more children. Households with high nondiscretionary spending on nonhousing goods, such as households with children (which have large expenditures for food, clothing, school materials, health care, and child care), are likely to allocate income to these nondiscretionary items first and then buy whatever housing they can afford from the remainder. Under the present definition, such households are less likely to be in housing-induced poverty, although they could be consuming substandard or crowded housing.¹⁹

Elderly homeowners were less likely to be in housing-induced poverty than their younger counterparts. A possible explanation is that according to the AHS, most elderly homeowners, even those who are near-poor, own their homes free and clear (based on my computations using the AHS 1999 Microdata File, U.S. Bureau of the Census 2000a).²⁰ For those who still

¹⁸ Not all ownership, however, leads to accumulation of wealth, specifically homeownership with a small down payment or none, coupled with home values that do not appreciate. Some low-income households that have become homeowners with the assistance of affordable lending programs find themselves in situations that allow them to accumulate little or no wealth in their owned home.

¹⁹ Many studies such as Kutty (1997) and Spain (1990) show that presence of children is a significant determinant of crowding in U.S. dwellings. In Kutty (1999), it was seen that room density (number of persons per room) is a significant determinant of the structural inadequacy of U.S. dwellings.

²⁰ According to tables prepared by the U.S. Bureau of the Census, 82 percent of elderly homeowners in poverty in 1999 owned their homes free and clear (2000b).

have a mortgage, the debt is small. Hence, elderly homeowners generally have lower housing costs than their younger counterparts, a fact that reduces the probability of housing-induced poverty. Elderly renters, however, had a higher probability of housing-induced poverty than their younger counterparts. Elderly households are more likely to draw down their savings and have current expenditures that exceed current income, consistent with the life-cycle hypothesis (Modigliani and Ando 1960). The income remaining for such households after paying for housing could be less than two-thirds of the poverty threshold even when actual consumption of nonhousing goods is above poverty levels because, according to the life-cycle hypothesis, elderly households finance part of their consumption from past savings rather than current income. Therefore, such households have a higher probability of being recorded as in housing-induced poverty. The unusually low housing costs for many elderly homeowners, however, contributed to the reversal of this result (of the impact of elderly status) in the model for homeowners in near-poverty and for all households in near-poverty.

Receiving food stamps lowered the likelihood of housing-induced poverty in the model for all households in near-poverty. This variable had no significant impact on the likelihood of housing-induced poverty in the homeowner and renter models, however. Food stamps are believed to be highly correlated with the presence and number of children. It is likely that households that receive food stamps have pressing nonhousing needs, probably related to children, that claim any income saved because of food stamps and other income as well. Probably only the remaining income is then allocated to housing.

Overall, each of the models performed well in terms of goodness of fit and overall significance. As indicated by the ratio of concordant and discordant predictions, shown in table 9, the models have good predictive power.

Conclusions and policy implications

There are 17.2 million households in the United States living at or below poverty in terms of their ability to afford basic nonhousing consumption. This number is higher, by over 2.8 million, than the number of households below the official poverty line. The rate of housing-induced poverty in the United States in 1999 was 16.8 percent, 2.7 percentage points higher than the poverty rate. Nearly 3 out of 10 households in near-poverty in 1999 were in housing-induced poverty.

These findings suggest that the official poverty rate underestimates the prevalence of a poverty standard of living. Furthermore, the geographic distri-

bution of official poverty is different from that of housing-induced poverty, which is more concentrated in metropolitan areas. Housing policies to improve the well-being of households at the lowest end of the income spectrum ought to take this locational reality into account. As seen in table 3, more than 40 percent of near-poor households in the urban suburbs of the Northeast and in the central cities and urban suburbs of the West are in housing-induced poverty. These locations deserve special attention in targeting affordable housing policies.

Resources at the federal, state, and local levels are very limited relative to the need for housing assistance. The notion of housing-induced poverty can serve as a more accurate basis (because it is more sensitive to low-income households) for prioritizing who should receive housing assistance than cost burden. Resources could be targeted at the 17.2 million households in housing-induced poverty rather than at the 30.1 million cost-burdened households (those whose housing costs were more than 30 percent of income in 1999). Housing-induced poverty is a better measure of distress than cost burden.

On one hand, results from the models suggest that rental subsidies in the form of public housing, vouchers and certificates (HUD's Section 8 tenant-based assistance program), and other rent subsidies are effective in reducing housing-induced poverty among renters in near-poverty. On the other hand, rent control or stabilization has no significant impact on the probability of housing-induced poverty. Therefore, affordable housing policies ought to focus on rent subsidies rather than regulations, although additional research is clearly needed to better understand these patterns. It is important for policy makers to take note of the fact that even at the same level of income, homeowners with FHA, VA, or FmHA mortgages are more likely to be in housing-induced poverty than homeowners with other types of mortgages.

My findings underscore the disparities in housing costs across regions and locations and the impact of such disparities on the standard of living. Some scholars have made a case for a new poverty measure that takes into account the disparities in housing costs across the country (Aaron et al. 2000; Citro and Michaels 1995). My findings support the case that a revised measure of poverty will draw a more accurate picture of the nation's poverty.

The present research indicates that high housing costs have placed 3.8 million households with incomes above the official poverty line at a standard of living at or below poverty level in terms of affording basic nonhousing goods. Furthermore, high housing costs have forced households in poverty into even lower standards of living. When households cannot afford even the poverty basket of nonhousing goods, they clearly cannot make needed invest-

ments in education and human capital development to raise their standard of living and to improve prospects for their children. Thus, the vicious cycle of poverty is exacerbated by housing expenditures that claim a significant share of the meager incomes of low-income households.

The analytical results showed that distance from poverty reduces the likelihood of housing-induced poverty. Thus, income, the other side of the affordability ratio, also deserves attention. Policies that raise income at the lowest end of the economic spectrum are important to alleviate the severe affordability problems reflected in housing-induced poverty. Here, systemic changes to raise incomes at the lower end (such as changes that address human capital development, productivity, and discrimination) would seem to be appropriate policy levers.

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