

# The Homeownership Experience of Low-Income and Minority Households: A Review and Synthesis of the Literature

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## Abstract

*The purpose of this article is to review and synthesize literature about low-income and minority households' experience with homeownership and to assess the extent to which homeownership is likely to benefit these groups. We present this work in the interest of supporting the development of effective policies for promoting and supporting homeownership and of addressing the concerns raised by those who fear that too great an emphasis is placed on promoting homeownership. Although several recent reviews of the literature have assessed the empirical evidence on the benefits of homeownership, this study is unique in that it explicitly focuses on what is known about low-income and minority households' experience with homeownership.*

## Introduction

During the latter half of the 1990s and the first half of the 2000s, the economy, capital market innovations, industry outreach, and government regulation and policy all converged to drive significant increases in the national homeownership rate. The gains were broad based, lifting the rates of low-, middle-, and high-income households, young and old households, and White and minority households. Between 1993 and 2004, homeownership rates among very low-income households, African Americans, and Hispanics increased by 6.4, 7.7, and 8.7 percentage points, respectively

(Herbert et al., 2005). These sharp increases in homeownership were all the more remarkable coming as they did on the heels of more than a decade of stagnant or declining homeownership rates (Green, 1996). Literally, millions of these households were added to the ranks of homeowners.

By 2006, lenders had substantially relaxed a variety of underwriting constraints that had made it particularly difficult for low-income households to achieve homeownership. Low downpayment loans, loans to borrowers with tarnished credit histories or thin credit records, lower documentation of income and asset requirements, lower reserve requirements, and products that lowered initial payments at the risk of higher payments later all helped low-income households purchase homes.

All these gains have at once elevated the importance of understanding the financial and social effects of homeownership on low-income households *and* limited the extent to which lessons from the past can be confidently extrapolated to the future. The likely prospective experience of low-income homeowners who have bought homes or refinanced their mortgages since 2000 is especially difficult to divine because the types of mortgage products, lending practices, pricing, and underwriting they encountered were fundamentally different from those encountered by homeowners who bought homes or refinanced before 2000. Nevertheless, with foreclosure rates now at record levels, it seems clear that new loan products, extended with more lax underwriting, may have imposed an excessive amount of risk on low-income homeowners who bought or refinanced their homes in the 2000s, especially after 2003. In addition, retrenchment in lending standards, which occurred in 2007 in response to unexpectedly poor subprime mortgage performance, may result in even greater deviations from the past experience of the low-income homeowners in housing downturns.

The purpose of this article is to review the literature on the financial and social effects of low-income homeownership. In 2003, Retsinas and Belsky characterized low-income homeownership as “the unexamined goal” and cautioned against slavish dedication to increasing homeownership for low-income individuals without first weighing the evidence of the risks and returns involved, considering the conditions under which low-income individuals purchased and financed homes, and being concerned about the sustainability of homeownership. Indeed, even before the current foreclosure crisis, a growing chorus expressed concern in recent years that the emphasis on homeownership may have gone too far (Apgar, 2004; Baker, 2005; Coy, 2004; Kosterlitz, 2004; Pitcoff, 2003; Shlay, 2004). A common theme in the critique is the manner in which homeownership has been pursued; in some cases, it has made families worse off. Support for this point of view is emerging from record numbers and shares of homes entering foreclosure in 2007. The increase is being driven by subprime loans, which are disproportionately loans to low-income and minority borrowers (Apgar, Bendimerad, and Essene, 2007). Although researchers from the Federal Reserve Bank of Boston recently concluded that foreclosures in the range of 20 percent of all subprime purchase loans made in Massachusetts between 1989 and 2007 may be likely (Gerardi, Shapiro, and Willen, 2007), even this prediction is an extrapolation from a period largely without significant home price declines or a significant relaxation of underwriting standards. Furthermore, even if buyers are able to maintain their housing payments, they may be stuck in poor-quality housing or may devote an excessive share of their income to housing. In short, critics have come to question whether many low-income and minority buyers have actually been able to realize the wealth accumulation, residential stability, and improved life outcomes for children that homeownership has promised.

This article takes stock of what is known and not known about the experiences of low-income and minority homeowners. It also speculates on what may change when moving forward as a consequence of the surge in subprime and low- and no-documentation lending and of exotic mortgages such as payment-option, interest-only, and deeply discounted adjustable-rate mortgages with initial fixed terms of 2 or 3 years. This review differs from several fairly comprehensive literature reviews that assess the benefits and costs of homeownership in general (Dietz and Haurin, 2003; McCarthy, Van Zandt, and Rohe, 2001; Rohe, McCarthy, and Van Zandt, 2002) in its explicit focus on low-income and minority homeowners. We argue that public policy must recognize that in some circumstances homeownership may not be recommended for certain households, given the low likelihood of realizing the benefits of homeownership. Finally, a growing recognition acknowledges that we know less about the homeownership experiences of low-income families than we know about the causes of homeownership disparities by income and race/ethnicity.<sup>1</sup> Thus, a final goal of this review is to highlight the areas in which further research is needed to enhance our understanding of this issue and to better inform the policymaking process.

This article is organized into six sections, including this introduction. The second section outlines the benefits believed to be associated with homeownership and describes the process by which these benefits may or may not be realized. The third section examines the choices homebuyers make after their initial purchase, including decisions about whether to move, remodel, refinance, or default. The fourth and fifth sections examine literature that sheds light on whether low-income and minority homebuyers are likely to realize the financial and social benefits of homeownership. The article concludes with a summary of findings and areas in which further research is needed.

## **Individual Benefits of Homeownership**

Advocates of efforts to promote homeownership cite a wide variety of benefits that accrue to individual homeowners and to society more broadly. The focus of this article is on the financial and social benefits that individual homeowners may realize. For the most part, it does not discuss broader societal benefits generated by purported positive externalities.<sup>2</sup>

### **Financial Benefits**

One principal financial benefit of homeownership is that it serves as a vehicle for wealth accumulation, both through appreciation in value and through the forced savings associated with paying down outstanding mortgage principal. Indeed, one unique aspect of homeownership is that it is one of the few leveraged investments available to households with little wealth, enabling

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<sup>1</sup> Herbert et al. (2005) provide a comprehensive review of the literature to synthesize what we know about the causes of differences in homeownership rates by race/ethnicity and income and about policies to promote homeownership.

<sup>2</sup> One category of societal benefits relates to improved neighborhood conditions (such as higher quality public services, better maintained properties, and higher levels of property appreciation) that are argued to result from higher levels of homeownership. This article touches on this category of benefits to the extent that owners themselves benefit from improved neighborhood conditions. Another class of societal benefits relates to improved macroeconomic performance due to higher levels of investment in housing that is associated with owner occupants. This latter issue is beyond the scope of this article.

homeowners with very little equity in their homes to benefit from appreciation in the overall home value. For example, a buyer of a \$100,000 home with a \$5,000 downpayment will experience a 100-percent return on his or her investment if home prices rise by a mere 5 percent in the first year of ownership.<sup>3</sup> This appreciation makes homeownership especially appealing for households that have low initial savings, such as low-income households. Wealth accumulation through homeownership is also enhanced by tax law provisions that shield most appreciation in home values from capital gains taxes and that allow homeowners to deduct mortgage interest (if itemizing deductions exceeds their standard deduction).<sup>4</sup>

It is important to note, however, that the high transaction costs associated with buying and selling homes relative to renting are a key factor offsetting any financial returns to homeownership from appreciation of a leveraged asset. In fact, real estate agent fees alone are typically 5 to 6 percent of the sales price. Buying a home entails mortgage fees and closing costs that can amount to several percentage points of a home's value. In addition, sellers often face transfer taxes and legal fees and may have to help buyers cover cash closing costs. Thus, if owners are forced to move either shortly after buying or during a down market, these transaction costs can greatly erode or eliminate any financial returns to homeownership. It is not uncommon for the combined costs of buying and selling a home to total 8 to 10 percent—or more—of the value of a home.

Nonetheless, home equity is the single largest component of household net wealth, and it is particularly important for low-income and minority households. In 2000, housing equity accounted for 32.3 percent of aggregate household wealth, with stocks and mutual fund shares accounting for the next largest share of wealth, at 15.6 percent (Orzechowski and Sepielli, 2003). Among households in the lowest income quintile, however, housing equity accounted for 56.2 percent of aggregate wealth, while stocks and mutual funds accounted for only 7.7 percent. Even after removing low-income elderly households from the equation, home equity trumps other forms of wealth. Home equity is also a very important source of wealth among minorities, accounting for 61.8 percent of aggregate wealth among African Americans and 50.8 percent among Hispanics. Ex post evidence of the critically important role that homeownership plays in wealth accumulation is one keystone supporting efforts to promote homeownership among low-income and minority households.

Homeownership is thought to contribute to an individual's financial well-being in three other ways. First, owner occupants are insulated from rapidly rising housing costs, particularly if they have fixed-rate financing. With long-term financing, the real cost of housing generally declines over time, so homeowners can have greater capacity for accruing savings in other financial assets or can enjoy a higher level of consumption. Second, the deductibility of mortgage interest and property tax payments serves to lower the after-tax cost of homeownership, also contributing to owners' ability to increase savings or consumption. Many low-income owners may not benefit from these provisions, however, because the standard deduction often exceeds interest and property tax

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<sup>3</sup> Of course, financial leverage is a two-edged sword and housing is not a risk-free investment. If home prices were to fall by 5 percent, the buyer's initial investment would be wiped out.

<sup>4</sup> As of 1998, capital gains of up to \$250,000 for single filers and \$500,000 for married couples filing joint returns may be exempt from taxation. Note, however, that owners cannot deduct housing-related losses as most other forms of investment allow.

payments. Third, homeownership allows a borrower to tap into secured lending against his or her home, which, all else equal, is often at a lower rate of interest than unsecured lending.

All these financial benefits are possible but in no way assured. As discussed in the following text, the proper way to view homeownership is as an investment that carries with it significant risks and uncertainties. For any number of reasons, homeowners can end up losing money on their homes or earn less of a return than if they had rented over some period.

## **Social Benefits**

A wide variety of nonfinancial benefits attributed to homeownership are generally referred to as social benefits. One principal social benefit is that owners are thought to have higher satisfaction with their homes, in terms of both the housing unit itself and the neighborhood where they live. In theory, this observation could flow from the fact that owners have greater ability and incentive to invest in their homes to suit their tastes. Of course, the flip side of owners' ability to modify their homes as they see fit is the cost and responsibility for maintaining the home. Maintenance expenditures and responsibility can cause stress if a homeowner lacks the requisite resources and can erode any potential added satisfaction from having greater control over the physical conditions of his or her living environment.

The argument that owner occupants are more likely to be satisfied with their neighborhoods is based on the idea that owners are both more likely to invest in their own homes and be actively engaged in efforts to improve their neighborhoods to protect their investment. To the extent that homeowners tend to cluster together, owners' collective activities to improve their communities and their individual units would be expected to result in better neighborhood conditions.<sup>5</sup> Despite this expectation, the clustering together of financially strapped homeowners can create negative neighborhood externalities if it results in undermaintenance of homes, foreclosures, and abandonment.

Another significant benefit thought to be associated with homeownership is higher life satisfaction and better psychological health. Owners are thought to have higher self-esteem, due to both the higher social status associated with homeownership and the sense of accomplishment that results from having achieved a significant life goal. Owners are also thought to benefit from a feeling of greater control over their life, derived from the fact that owners do not have to worry about being forced out of their home by landlords' actions. The wealth created through homeownership may also contribute to this greater sense of control by providing a financial cushion that can be tapped to meet emergency needs. Owners are also thought to have better physical health, perhaps, in part, as a result of their better psychological health and, in part, due to the better quality of their homes. Of course, to the extent that owners are financially stretched to meet the costs of homeownership, they may feel less control over their lives and more vulnerable to financial and personal shocks. In these situations, owners may fare worse than renters do in terms of psychological and physical health.

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<sup>5</sup> Herbert (1997) estimated measures of the degree of segregation in 1990 between owners and renters as measured by the dissimilarity index for 50 metropolitan areas. He found that the degree of segregation by tenure was moderate, suggesting that homeowners do, in fact, tend to cluster in neighborhoods. Although segregation by tenure was much lower than the levels of segregation experienced by African Americans, it was similar to the levels of segregation experienced by Hispanics and Asians and higher than segregation by income or education.

Finally, an important social benefit attributed to homeownership is better life outcomes for children who grow up in owner-occupied homes. Homeownership is thought to benefit children by several mechanisms. It may enable greater residential stability, which benefits children by providing a stable social and educational environment. The more home-centered lifestyle associated with homeownership may provide children with a more nurturing home environment. Given owners' incentive to invest in their homes and the fact that owner-occupied housing is much more likely to be in single-family detached housing, the greater quality, size, and privacy of these homes may also help support children's development. In addition, to the extent that homeownership helps to foster wealth creation, owners will have more financial resources available to invest in their children's education and health care and to generally provide a supportive environment for their development. A wide range of better outcomes in children has been attributed to homeownership, including higher educational attainment, less juvenile delinquency, lower rates of teenage pregnancy, and higher rates of subsequent homeownership. On the flip side, there may also be reason to be concerned about efforts that succeed in increasing low-income homeownership by having these households buy into distressed neighborhoods. In these situations, the benefits of homeownership may be offset by having children locked into these distressed communities.

Thus, just as the financial benefits of homeownership are not assured, neither are the social benefits. In many cases, the hoped-for social benefits of homeownership may not materialize because the financial benefits do not, leading to a sense of loss of control, stress, and a forced move. Much depends on the timing of home purchases and sales relative to house price cycles, the duration of homeownership and the time before a next move, the capacity to benefit from the mortgage interest deduction and capital gains exclusions, the choice of neighborhood, the choice of mortgage, and refinancing decisions.

## **Process for Realizing the Benefits of Homeownership**

In sum, the potential benefits of homeownership outlined previously are by no means guaranteed. More specifically, whether these benefits are actually realized depends on a broad range of factors, including the following:

- When (age and timing) household heads first become homeowners.
- Where they choose to buy.
- How much the household spends on housing.
- The condition and age of the home they buy.
- How much they reinvest in maintaining and improving their homes.
- The mortgage products they can qualify for, have access to, and choose.
- If and when they refinance mortgages or tap into home equity.
- The return of alternative investments and the cost of renting instead.
- Whether income or budget shocks force them to default on their mortgage loans or house price declines spur them to do so.

- The timing of purchases and sales relative to house price cycles.
- The capacity to benefit from federal tax advantages.
- How often they move, their tenure choice, and the transaction costs of moving.

Exhibit 1 presents a conceptualization of the determinants of homeownership outcomes, delineating the key choices that affect outcomes and the types of events that affect these choices. Importantly, many of the benefits of homeownership—such as the accumulation of wealth and positive effects on children or health—would be expected to accrue only over a long period of time.

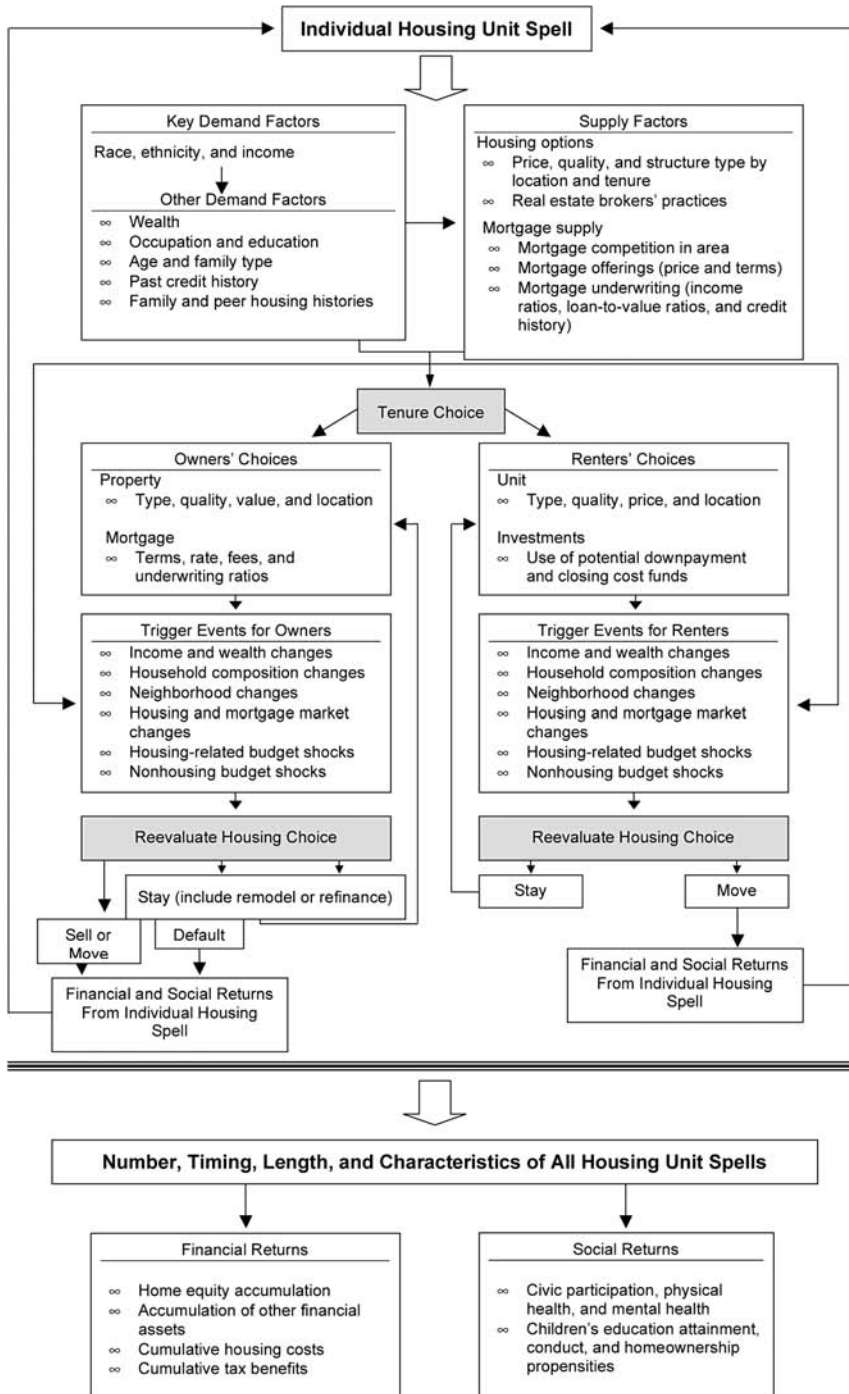
One key insight from the process outlined in exhibit 1 is that it is not the outcome of single experiences with homeownership that matters but the timing of tenure and mortgage choices throughout the life cycle. Thus, in evaluating whether an individual household benefits from homeownership, it is necessary to consider not just the outcome from the time spent in a single home but rather the household's cumulative experience in a sequence of homes. Few studies take this perspective, probably because the number of paths that individuals can trace is so great and the sample sizes of panel studies so small. As a result, most of the literature examines behavior and outcomes across single episodes of homeownership, such as equity accumulation from the purchase to the sale of a home, or examines cross-sectional behaviors and outcomes, such as who refinances during a refinance boom or default and delinquency behavior in a single year. Nonetheless, the absence of a life-cycle perspective contributes to important gaps in the existing literature.

Of particular importance for this article, *virtually all the factors that contribute to the outcomes from tenure choices are likely to be strongly influenced by a household's income, race, and ethnicity.* Lower average incomes restrict the range of housing options available to homebuyers to only lower cost units, often in lower quality neighborhoods. Although segregation of residential space by race and income may in turn influence low-income and minority owners' average house price appreciation experience, as we shall see, the evidence of a systematic effect is quite weak. In addition, research has consistently found significant geographic segmentation of mortgage markets by race and income, suggesting that where an owner lives exerts an important influence on his or her access to financial services and mortgage products. Low-income households also have measurably lower amounts of cash savings to cushion against budget and income shocks and find it more difficult to cover the costs of maintenance and replacements. Lower income typically entails lower wage work and more unstable employment, which tend to leave low-income households more prone to reductions in income through job loss. Because Hispanics and African Americans have lower levels of education on average than Whites do, receive lower earnings on average for comparable levels of education, and have average credit scores that are lower, the problems confronting low-income homebuyers and owners disproportionately affect minorities.

Finally, although the deductibility of mortgage interest on federal income taxes provides an incentive for homeownership, lower income households derive fewer benefits from this provision both because they have lower marginal tax rates and because their itemized deductions may be small relative to the standard deduction, reducing the chance that they will choose to itemize their deductions. Based on estimates of the number of tax returns claiming the mortgage interest deduction, approximately 15 percent of homeowners with incomes of less than \$30,000 claim this

**Exhibit 1**

**Conceptual Model of Lifetime Returns From Tenure Choices**





deduction compared with 50 percent of those with incomes between \$30,000 and \$50,000 and 64 percent of those with incomes of more than \$50,000.<sup>6</sup>

Because Hispanics and African Americans have sharply lower average wealth than do Whites of comparable incomes, and because low-income households have sharply lower average wealth than higher income households, the neighborhood and housing options of low-income individuals and minorities are further restricted, their vulnerability to income and budget shocks is greater, and the speed with which they can achieve homeownership is thereby slower.

Taken together, many of the systematic variations in income, wealth, location, and education related to race, ethnicity, and income drive many of the factors that contribute to the outcomes from homeownership, including living arrangements and family choices, number and timing of moves and tenure choices, mortgage choices, refinance behaviors, repair and remodeling behaviors, and vulnerability to house price declines or housing payment increases, income disruptions, and unforeseen but necessary nonhousing expenditures. These variations give rise to expected differences in the average experiences, risks, and returns to homeownership for low-income and minority homeowners. Thus, the “odds” of different outcomes are expected to vary by race, ethnicity, and income. The overarching goal of this article is to sort through available information to evaluate how the different factors outlined in exhibit 1 contribute to different homeownership experiences for low-income and minority homeowners.

As noted previously, for a variety of reasons, much of the literature examining the benefits of homeownership does not take a life-cycle view of housing choices; instead, it focuses on a short-run outcome—for example, the appreciation in house values over the course of a set period of time. In addition, a variety of research is not explicitly focused on examining the benefits of homeownership but rather examines either specific housing choices, such as a decision to choose a certain type of mortgage or undertake remodeling activities, or intermediate outcomes, such as the choice of moving to a new home. The process outlined in exhibit 1 helps place this research in context in considering how specific housing choices and intermediate outcomes ultimately contribute to the benefits realized by low-income homeowners.

## Key Experiences and Decisions of Low-Income and Minority Homeowners

Three critical factors influence the experiences and decisions of low-income and minority homebuyers after they purchase their home. First and foremost is the question of how long these owners maintain homeownership, because many of the financial and social benefits of homeownership are derived from residential stability. Second is the experience of these owners both in refinancing their primary mortgage and in using debt to tap their accumulated home equity, because these decisions have important implications for the ongoing costs of homeownership and whether these owners are able to accumulate wealth over time. Third, differences in low-income and minority

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<sup>6</sup> These figures are derived from estimates of the number of tax returns by claiming the mortgage interest deduction by filer income in 2004 as reported in Joint Committee on Taxation (1995) and the authors' tabulations of the number of homeowners in these income categories from the March 2004 Current Population Survey.

homeowners' tendency to invest in maintenance and improvement to their homes also influence homeownership outcomes.

### **Mobility, Foreclosure, and Length of Time as Homeowners**

In terms of the financial benefits, given the high transaction costs of buying and selling a home, homeownership becomes very expensive if the household moves frequently. Also, although in the longer run nominal house prices are very likely to rise, short periods of falling nominal house prices are not uncommon (Belsky and Duda, 2002). If an owner is forced to sell his or her home into a down market, he or she will incur these nominal declines in values. Longer tenure in the home will enable owners to ride out short-term nominal declines and avoid these losses. Of course, if a homeowner suffers a foreclosure, the costs include not just a loss of their equity but also the psychic distress of having failed at homeownership and being forced out of his or her home and the damage done to the owner's credit history and ability to obtain credit in the future. In fact, concentration of subprime mortgages that default at rates 8 to 10 times greater than prime mortgages among low-income and minority homeowners, as well as the tendency of even prime low-income and minority borrowers to have riskier high loan-to-value ratio loans, has given rise to critiques of efforts to promote homeownership among these groups. Finally, as this article addresses later, a variety of the social benefits are associated with residential stability.

The literature touching on these issues can be divided into three strands. The first strand deals with residential mobility, which is the share of households that move out of their homes over a given time period. Although this literature in general is not concerned with movers' subsequent housing choice and so does not address the question of whether owners leave homeownership or are simply trading one owned residence for another, these studies are of interest in examining the question of whether low-income and minority owners might be more likely to incur the high transaction costs associated with moving. The second strand of the literature relates to the prevalence of foreclosure among homebuyers. Many owners who are unable to sustain homeownership may be able to take steps to avoid a foreclosure. Still, these owners may face significant costs from being forced to leave homeownership, including higher future borrowing costs from having defaulted on a loan. The third strand of the literature, which is relatively new, uses panel surveys of households to track their length of time as homeowners. This literature provides a more direct indication of the extent to which low-income and minority homebuyers are able to sustain homeownership over time as well as the factors contributing to exits from homeownership. The literature dealing with each of these three issues is discussed in turn.

### **Residential Mobility**

Several recent reviews of the literature have concluded that convincing evidence shows that owners move less than renters do (Dietz and Haurin, 2003; Rohe, McCarthy, and Van Zandt, 2002; Rohe and Stewart, 1996).<sup>7</sup> The question of interest for this study, however, is whether low-income or

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<sup>7</sup> The fact that owners move less than renters do does not mean that the evidence is clear that homeownership causes greater residential stability. In fact, individuals are more likely to buy a home when they know they are less likely to want to move in the near future. In this case, lower expected mobility leads to homeownership, not the other way around. Still, homeownership would be expected to lower mobility in several ways. First, higher transaction costs of moving make owners less inclined to move as their household circumstances change. Second, owners also have a greater ability to tailor homes to meet their needs and tastes and so may have less need to move to adjust their housing consumption.

minority homeowners are more or less likely to move than other homeowners are, not whether they are more likely to move than renters are. Actually, few studies compare the mobility choices of homeowners of different incomes or race/ethnicities. Most studies pool owners and renters and include income and race/ethnicity as independent variables, but they do not interact a household's tenure with these variables to examine whether the effect of income or race/ethnicity on mobility differs between owners and renters.

Most of the handfuls of studies that address this issue suggest that low-income households are somewhat less likely to move than are higher income groups (Gronberg and Reed, 1992; Haurin and Lee, 1989; Henderson and Ioannides, 1989). This result is attributed to the fact that higher income households have more choices in the housing market and are less deterred by transaction costs and so are more likely to move than low-income households are. These same studies also generally find that White owners have lower mobility than minorities (Gronberg and Reed, 1992; Henderson and Ioannides, 1989). This finding is at odds with the explanation advanced for the higher mobility of higher income households. If it is the degree of choice in housing markets that drives mobility, then minorities ought to have lower mobility than Whites do. Instead, it is possible that the greater mobility among minority homeowners is more likely to reflect their greater difficulty in sustaining homeownership. Most of these studies rely on data from several decades ago, however, and may be of less relevance for current market circumstances. More recent studies that focus not only on differences in the propensity to move but also examine the subsequent tenure choice of households are more relevant for the purpose of this study. This literature is reviewed in the following paragraphs.

### **Mortgage Delinquency and Foreclosure**

A rich literature addresses the determinants of mortgage delinquency and residential foreclosure, which the literature generally refers to as default. Perhaps not surprisingly, research consistently finds that households with lower incomes are more likely to miss payments and default on their mortgages (see Quercia and Stegman, 1992, for a thorough review of the default literature through that time). Two more recent studies—Van Order and Zorn (2002) and Deng, Quigley, and Van Order (1996)—have an explicit focus on the difference in default experience by borrower income. Although carefully done, these studies and others do not model the subprime loans that became so popular after 2000 or a declining nominal house price environment such as the one that unfolded in 2007. These studies are likely to drive much greater wedges between the default experience of minorities and Whites and that of lower and higher income households.

Van Order and Zorn (2002) study the performance of mortgages purchased by Freddie Mac that were originated between 1993 and 1995 and then tracked through 1999. Even after controlling for a variety of loan characteristics, they find that lower income groups consistently have higher default probabilities than higher income groups do. The unadjusted default rates (that is, differences in default by income category without taking into account other differences between these borrower groups) reported by Van Order and Zorn are also instructive because they indicate the extent to which low-income borrowers are likely to experience foreclosure. The data that Van Order and Zorn present indicate that, even for low-income borrowers, foreclosure is a rare event. Among their cohort of low-income borrowers from the first half of the 1990s, only 0.8 percent of

buyers with incomes of less than 80 percent of area median income experienced a foreclosure in the 4 to 6 years following origination. This rate was only slightly higher than the 0.6 percent of high-income borrowers who experienced foreclosure over the same time period.

Deng, Quigley, and Van Order (1996) shed some light on how the expansion of mortgage credit for low-income borrowers in the form of low downpayment loans may affect foreclosure rates. They developed a model predicting mortgage default based on the performance of loans purchased by Freddie Mac that were originated between 1976 and 1983 and then tracked through 1992. They then used this model to simulate the performance of mortgages over a 15-year period with different assumptions about borrowers' income relative to area median incomes, loan-to-value ratio, and fluctuations in house price appreciation and unemployment rates. Under favorable economic circumstances (longrun average unemployment of 4 percent and house price appreciation of 5 percent) and assuming a downpayment of 10 percent, they find little difference in expected 15-year foreclosure rates by income: 3.56 percent of borrowers with incomes between 60 and 100 percent of area median income would default, compared with 3.09 percent of borrowers with incomes between 100 and 150 percent of area median income.<sup>8</sup> If the downpayment is reduced to 0 percent, the differences in default rates by income grow larger: 6.58 percent of low-income borrowers would default, compared with 4.74 percent of borrowers with incomes above the area median. If the macroeconomic conditions are also made much more challenging (8 percent unemployment and 0 percent housing appreciation on average), the differences in default rates grow to nearly 5 percentage points: 12.88 compared with 8.00 percent.

Several conclusions can be drawn from these simulations. To begin with, although the likelihood of foreclosure among all income groups is sensitive to downpayment levels and macroeconomic conditions, low-income borrowers are more sensitive to these factors than higher income borrowers are. It is also true, however, that except under extremely poor macroeconomic conditions, the foreclosure rate is unlikely to exceed the low single digits over the period studied. In the prime market, foreclosure occurred in only about 1 in 20 cases over a 15-year period, even when borrowers started with no equity in their homes. Also, the absolute differences in default rates by income were not large. With 0-percent-down loans, the probability of foreclosure among low-income borrowers was only 1.87 percentage points higher than it was among higher income borrowers. Should a period of sustained poor economic conditions occur, however, with nominal house price growth averaging 0 percent for 15 years, much higher foreclosure rates would occur, and the foreclosure rate would be more than 50 percent higher among low-income borrowers than it would be among higher income borrowers. These results indicate the importance of providing support mechanisms for low-income borrowers, particularly those with low downpayments and particularly during challenging economic environments.

The issue of differences in default rates by race/ethnicity has also received a fair amount of attention in the literature and has been a contentious issue. Van Order and Zorn (2002) report statistics for a pool of Freddie Mac loans originated in 1993 to 1995, showing that, although only 0.6 percent

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<sup>8</sup> The article also reports default rates for those with incomes of less than 60 percent of area median income (AMI), but the sample size for this group is relatively small. The authors also report default rates for those with incomes above 150 percent of AMI, but these rates are higher than for those with incomes between 100 and 150 percent of AMI.

of White borrowers experienced a foreclosure by 1999, 1.9 percent of African Americans and 2.2 percent of Hispanics lost their homes to foreclosure during that same period. Cotterman (2002), which presents information on a sample of Federal Housing Administration (FHA) loans from 1992, 1994, and 1996 that were tracked through mid-2002, also shows higher foreclosure rates for minorities compared with Whites. Across the three sample years of 1992, 1994, and 1996, White foreclosure rates were 4.1, 4.0, and 2.9 percent, respectively. In comparison, African-American rates were roughly twice as high, at 8.1, 7.6, and 4.8 percent, respectively, while Hispanic rates were higher still, at 11.0, 8.5, and 5.4 percent, respectively.<sup>9</sup>

As the findings of these papers show, differences in foreclosure rates are much larger by race and ethnicity than they are by income. In addition, the figures presented in Cotterman's paper also highlight the fact that foreclosure rates among FHA borrowers are much higher than among prime borrowers. Although it is still the case that most FHA minority homeowners do not experience foreclosure, the 8.1 percent of African Americans and 11.0 percent of Hispanics who lost their homes within 8 years of purchase are not insignificant. As with low-income homebuyers, these figures underscore the need to provide support for these borrowers to be able to sustain homeownership.

As noted, the studies cited previously were all based on loan performance before the recent sharp rise in foreclosure rates. The most widely cited series on mortgage delinquency and foreclosure is the National Delinquency Survey conducted by the Mortgage Bankers Association (MBA). These data show that, beginning in 2006, mortgage delinquency rates started to rise—and they have continued to increase fairly sharply through the third quarter of 2007. The overall delinquency rate for the mortgage market as of the fourth quarter of 2007 is at peak levels, at 5.82 percent, compared with a previous high of 5.56 percent in 1986. Much of this increase was driven by subprime loans. As of the fourth quarter of 2007, the share of subprime loans that were delinquent was 17.31 percent, exceeding the previous peak rate of 14.31 percent from 2002. At the same time, the delinquency rate among prime mortgages was 3.24 percent—again exceeding the previous peak of 2.67 percent in 2001.

Changes in the share of loans starting the foreclosure process have been even more dramatic. According to the MBA data, the previous record share of outstanding mortgages starting foreclosure was 0.46 percent achieved during the 2001-to-2002 recession. This rate greatly exceeded the foreclosure start rates achieved during the real estate slump of the mid-1980s, when foreclosure start rates were less than 0.30 percent. By the fourth quarter of 2007, the rate had reached 0.83 percent, far outpacing the previous record high of 0.50 percent recorded in the second quarter of 2002. Again, most of this increase is due to rising foreclosure initiation rates among subprime mortgages. As of the fourth quarter of 2007, the share of subprime mortgages starting foreclosure was 3.44 percent, while the foreclosure rate was 0.41 percent among prime mortgages.

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<sup>9</sup> Another strand of the literature has examined differences in default rates by race while controlling for other borrower and loan characteristics. Berkovec et al. (1994) analyzed the performance of a pool of FHA loans and found that, all else being equal, African Americans had a higher default rate than Whites. This work, however, was subjected to a series of criticisms regarding the adequacy of the controls employed for credit quality and other borrower characteristics. Cotterman (2002) replicated the analysis of Berkovec et al. using data on FHA loans from the early 1990s that had information on borrowers' credit history, which was not available to Berkovec et al. Cotterman found that after credit quality was controlled for, no difference occurred in default propensities for Hispanics and Asians and, in general, no difference occurred for African Americans either.

Although the MBA survey does not present information on differences in mortgage delinquency or foreclosure by borrowers' income or race/ethnicity, given findings from a variety of studies showing that subprime lending is concentrated among minority and low-income homeowners (Apgar and Herbert, 2006), the sharp rise in subprime delinquencies and foreclosures undoubtedly has been more pronounced among these groups.

For the most part, even when foreclosure levels have been elevated, these events in general have been fairly rare; however, the recent experience with subprime loans suggests that foreclosure rates among borrowers with these loans may be several times higher. An analysis by the Center for Responsible Lending concluded that about one in five subprime loans would end in foreclosure (Schloemer et al., 2006). These results have recently been corroborated in an analysis by researchers of the Federal Reserve Bank of Boston examining foreclosure rates among subprime loans in Massachusetts (Gerardi, Shapiro, and Willen, 2007). This rate of failure is clearly cause for concern about the share of homeowners who are likely to realize the potential benefits of homeownership.

### **Length of Time as Homeowners**

One concern with drawing conclusions from the literature analyzing residential mobility about whether low-income and minority buyers share in the benefits of homeownership is that some share of moves represents positive outcomes—owners trading up to better quality homes. On the other hand, estimates of the share of borrowers losing homes to foreclosure may also underestimate the failure of buyers to succeed as homeowners by ignoring cases in which buyers are forced by circumstances to move out of their homes but do not experience a foreclosure. Cases in which owners reluctantly put their homes up for sale, possibly at a financial loss, are not captured in foreclosure statistics. Recently, several studies have made use of panel surveys—surveys that track the same households over time—to examine the question of how long low-income and minority first-time buyers maintain homeownership (Boehm and Schlottmann, 2004b; Haurin and Rosenthal, 2005a; Haurin and Rosenthal, 2005b; Reid, 2004). By capturing all cases in which owners leave their home and do not purchase another one, these studies provide a much better indication than either the residential mobility literature or default literature of the degree to which these buyers are able to remain owners over time and so reap the benefits of homeownership.

One surprising conclusion from these studies is that a fairly sizeable share of all first-time owners—regardless of income or race/ethnicity—returns to renting or living with others after first achieving homeownership. Both Reid (2004) and Haurin and Rosenthal (2005a) find that about 40 percent of first-time homebuyers leave homeownership at some point after buying. These studies also find that low-income owners face a higher risk of being unable to sustain homeownership over time. Reid's analysis of data from the Panel Study of Income Dynamics (PSID) from 1976 through 1993 found that 53 percent of low-income buyers left homeownership within 5 years of buying their first home, compared with 23 percent of high-income buyers.<sup>10</sup> Employing a less restrictive definition of low-income buyer, Haurin and Rosenthal, in their analysis of data from the National Longitudinal Survey of Youth (NLSY) from 1979 through 2000, found that about 43 percent of

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<sup>10</sup> Although Reid (2004) cites specific survivorship rates for some subgroups in the text of her study, in some cases specific rates had to be estimated based on survivorship graphs shown in the report.

low-income buyers did not sustain homeownership for more than 5 years compared with 30 percent of high-income buyers.<sup>11</sup>

In some respects, given differences in the samples used and time periods studied, the results of these two analyses are somewhat similar: as an approximation, roughly one-half of low-income buyers exit homeownership within 5 years of purchase, compared with one-fourth to one-third of high-income buyers.<sup>12</sup> The difference in survival rates between low-income and high-income buyers is much larger in Reid's study than in Haurin and Rosenthal's, however. Although Reid finds a 30-percentage-point lower survival rate for low-income buyers, Haurin and Rosenthal find a difference of only 13 percentage points. This observation may well be due to Reid's more restrictive definition of "low income," which requires that households have incomes of less than 80 percent of the area median income in every year they are observed through the year in which they buy. Haurin and Rosenthal, on the other hand, define low income as those in the bottom quartile of the income distribution in their sample at age 25. Reid's sample is also somewhat older, consisting of renters between the ages of 18 and 45; Haurin and Rosenthal begin with a sample of those between the ages of 14 and 22. Given the differences in the age groups and definition of low income, Reid's results may well represent the experience of what might be thought of as more permanently low-income households. Further work is needed to understand the difference in findings between these studies for low-income owners.

Both of these studies also find that minorities are much more likely to return to renting or living with others than Whites are. Reid's 5-year rates of exits from homeownership for minorities are between 22 and 38 percentage points higher compared with Whites in the same income categories.<sup>13</sup> Haurin and Rosenthal (2005a) find that African Americans are 46 percent more likely than Whites to be unable to sustain homeownership, while Hispanics are 38 percent and Asians are 39 percent more likely to leave.<sup>14</sup> Reid reports that, after 5 years, about 29 percent of high-income minorities did not sustain homeownership compared with 21 percent of high-income Whites, and that 58 percent of low-income minorities were no longer owners compared with 46 percent of low-income Whites.

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<sup>11</sup> Reid's definition of low income required that the household have an income of less than 80 percent of AMI in every year it is observed through the year in which the household bought its first home. High-income buyers were those whose income was above the AMI every year they are observed through the year they purchased their home. All other households were considered moderate income. Haurin and Rosenthal (2005a), in contrast, defined households based on their income at age 25 relative to all other 25-year-olds. Those in the bottom quartile were considered low-income households, and those in the top quartile were considered high-income households. The survivor rates for Haurin and Rosenthal are unpublished figures obtained from the authors.

<sup>12</sup> The analysis by Boehm and Schlottmann (2004b) of the PSID from 1984 through 1992 produces a higher rate of success in maintaining homeownership for at least 5 years both for all households and for White low-income owners. For example, they find that, among high-income Whites, 95 percent survive 5 years and, among low-income Whites, 82 percent survive 5 years. A key difference from the other studies is that Boehm and Schlottmann do not limit their sample to only first-time buyers. The difference in results may reflect the fact that repeat homebuyers are more likely to maintain homeownership over time than are first-time buyers.

<sup>13</sup> Reid's analysis does not distinguish between different types of racial/ethnic minorities.

<sup>14</sup> Haurin and Rosenthal find that the differences between Whites and both Hispanics and Asians are completely accounted for by other household characteristics, while large, statistically significant differences remain for African Americans, even after controlling for other factors.

The high exit rates for low-income and minority first-time buyers are a cause for concern because the benefits of homeownership in general will be much greater for those who continue as owners for longer periods. This trend occurs both because the odds of benefiting from appreciation increase with time and the benefits of amortizing loans increase exponentially with the aging of the loan. In addition, social benefits of homeownership are strongly linked with residential stability.

Haurin and Rosenthal (2005b) also continue to track households to identify how many households regain homeownership. Although in their analysis they do not examine differences across income groups, they do report differences by race/ethnicity. Of White first-time buyers, 69 percent of those who moved back to renting or living with others for a period of time are ultimately observed to return to owning. Thus, most of these exits from homeownership are temporary. The rates of returns to homeownership are lower for minorities, but most also return to ownership status, including 59 percent of African Americans and 64 percent of Hispanics.

The studies by Reid (2004) and Haurin and Rosenthal (2005a, 2005b) also estimate models to identify the factors associated with a household leaving homeownership. Aside from identifying income and race/ethnicity as important household characteristics, these studies find that one of the most important household characteristics is whether the owners are a married couple. This finding raises concerns that growth in homeownership among single-person and single-parent households may raise the number of owners who are vulnerable to economic shocks (Herbert and Belsky, 2006). Other household characteristics associated with the risk of leaving homeownership are age and education. Both Reid (2004) and Haurin and Rosenthal (2005a, 2005b) speculate that education likely captures the owner's longrun earnings potential, with higher educated owners more likely to experience rising earnings. To the extent that greater education is associated with greater financial literacy, this result would also be consistent with the importance of financial knowledge to maintaining homeownership.

The studies also examine the importance of changes in household circumstances for precipitating an exit from homeownership. It is generally believed that "trigger events," which are unexpected changes in a household's circumstances, are important factors in producing defaults or otherwise ending homeownership spells (Elmer and Seelig, 1999; Vandell, 1995). The most commonly cited trigger events are a reduction in earnings as a result of job loss, the splintering of the household due to divorce or separation, and an increase in expenses or reduction in earnings due to a health crisis. Cutts (2003) reports that among delinquent Freddie Mac borrowers during the period from 1999 to 2003, 40 percent reported unemployment or curtailment of income as the reason for their delinquency. The next most common issue was illness or death of the borrower or someone in the family, which was reported for 24 percent of delinquent borrowers. Marital difficulties and excessive financial obligations each were cited in about 10 percent of cases.

To capture job loss or income curtailment, Reid includes an indicator of whether the borrower experienced an unemployment episode, while Haurin and Rosenthal include a change in household earnings compared with earnings in the year when the borrower purchased the home. Both studies find these measures to be significant predictors of whether a household will cease to own. Reid found an unemployment spell more than doubled the probability of ending ownership, with larger effects on higher income households. Haurin and Rosenthal found a somewhat smaller effect, with



declines of \$10,000 in earnings raising the risk of leaving homeownership by 11 percent. Reid reports that job loss was more common among low-income households, with about 9 percent of low-income households and 15 percent of low-income minorities having a spell of unemployment compared with 6 percent of high-income households.

Both Reid (2004) and Haurin and Rosenthal (2005a, 2005b) find that divorce is the single event that is most strongly associated with termination of an ownership spell. Reid's findings indicate that a divorce raises the probability of leaving homeownership roughly by a factor of 10, while Haurin and Rosenthal's estimate is a more modest, but still significant, 40 percent.

Haurin and Rosenthal include an indicator of whether a change occurred in the buyer's health that limited the amount or type of work he or she could do. This situation was rare in the sample (occurring in only 1 percent of cases) and was not statistically significant. Some of the effect of illness may have been captured by a variable measuring the borrowers' change in earnings. The other effect of a health problem is on the costs incurred by the household, particularly if it does not have health insurance. The change in health measure might have been expected to capture the effect of uninsured healthcare costs, but this factor was not found to be important—at least in this sample.

Haurin and Rosenthal also include measures of prevailing mortgage rates, both at the time of purchase and at each point in the time the household is observed after purchase, all of which are found to be highly significant. They find that a 1-percentage-point higher initial mortgage interest rate increases the risk of leaving homeownership by 16 percent. The authors note that this finding provides an indication of the increased risks faced by low-income buyers using higher cost sub-prime financing. They also find that a 1-percentage-point increase in rates over time increases the risk of leaving homeownership by 30 percent, while a 1-percentage-point decline reduces the risk of leaving by 15 percent. Although they interpret these latter results as indicating the risks faced by those using adjustable rate financing, their data do not indicate whether borrowers actually have an adjustable rate product. Another interpretation of this result could be that owners who are forced by circumstances to change residence have a harder time maintaining ownership during periods when interest rates are high.

It is also likely that many exits from homeownership are simply rational decisions in response to changes in circumstances that do not impose significant costs on the owners. The fact that a fairly high proportion of high-income households leave homeownership within 5 years suggests that a failure to be able to afford homeownership is not the only reason for these departures. In short, a clear need exists for more information about the dynamics of homeownership over time, including the changes that occur in household circumstances, how different households respond to these changes (including whether they can draw on savings, debt, insurance, or resources provided by family and friends), and how these responses are associated with different outcomes.

## **Mortgage Financing Choices After Purchase**

Mortgage financing choices that homeowners make after home purchase can have important repercussions for the financial benefits realized from ownership. One important decision is to refinance into lower interest rate loans when market conditions provide the opportunity to do so. The failure to take advantage of such opportunities can result in much higher interest rate costs

over the life of the mortgage. Owners also can use loans to tap accumulated home equity. Although the availability of this wealth is one benefit of homeownership, changes in mortgage markets over the past decade have made it much easier to tap home equity both through refinancing of existing mortgages and through home equity loans or lines of credit. The ease with which owners can tap their home equity may make it easier to use their wealth to support current consumption, which both increases housing costs and erodes the development of a nest egg to help weather financial crises; fund investment in homes, business, or education; or support the owner in retirement. This section explores what is known about differences among homeowners by income and race in their propensity to take advantage of refinance opportunities to lower interest rates or to cash out accumulated equity for other uses. Each of these issues is considered in turn.

### Refinance Activity

In general, analysis of refinancing activity has found that low-income and minority homebuyers are less likely to refinance their primary mortgage than higher income households or Whites are. Exhibit 2 presents data from the 2003 American Housing Survey (AHS) as an indication of the difference in magnitude of the likelihood of refinancing. As of 2003, 12 percent of low-income owners had primary mortgages that were refinanced, which is about one-half of the share of moderate-income owners and one-third of the share of high-income owners. Comparing different racial/ethnic groups, Whites (24 percent) are more likely to refinance than either African Americans (14 percent) or Hispanics (21 percent). Exhibit 2 also shows that first-time buyers who are still in their first home are least likely to have refinanced (5 percent), although this observation likely reflects the fact that, on average, they have the shortest tenure in their homes and so have had less opportunity to refinance.

### Exhibit 2

**Refinance Activity and Reasons for Refinancing by Income and Race/Ethnicity of Owners**

	Low Income (%)	Moderate Income (%)	High Income (%)	White (%)	African-American (%)	Hispanic (%)	First-Time Buyers (%)
<b>Share of all owners with primary mortgage refinanced</b>	12	26	35	24	14	21	5
<b>Reason for refinancing</b> (Share of those with refinanced mortgage)							
To get lower interest rate	83	90	93	90	84	87	97
To increase payment period	2	3	2	2	2	2	0
To reduce payment period	9	11	13	12	9	12	5
To renew or extend a loan	1	1	1	1	3	1	0
To receive cash	14	12	11	11	12	15	5
Other reason	12	10	6	8	11	12	4

*Note: Reasons for refinancing sum to more than 100 percent because more than one reason can be reported.*

*Source: 2003 American Housing Survey*

Exhibit 2 also shows the reported reasons for refinancing among owners who have refinanced. Although, by far, the most common reason given among all groups of owners is to obtain a lower interest rate, with at least 83 percent of all owners reporting this reason, low-income and minority borrowers are somewhat more likely to report a desire to take cash out or “other reasons” for pursuing a refinance. Because consolidating nonhousing debt into lower cost and longer term mortgage debt is one common reason for refinancing, it is likely that this motivation is captured in the “other reason” category (Canner, Dynan, and Passmore, 2002). Considering both the shares motivated to refinance to take cash out and for other reasons, 26 percent of low-income owners report these reasons compared with 22 percent of moderate-income owners and 17 percent of high-income owners. African Americans (23 percent) and Hispanics (27 percent) are also more likely to report these motivations than are Whites (19 percent).

Although these overall refinance propensities from the AHS provide some indication of the prevalence of this activity by income and race/ethnicity, these simple tabulations do not take into account other differences in borrowers’ circumstances that affect the likelihood of pursuing a refinance. For example, borrowers with mortgages that are largely paid off would be expected to be less likely to refinance because the small loan size reduces the benefits and financing costs are larger as a percentage of the outstanding loan balance.

Two recent studies have examined differences by income and race/ethnicity in homeowners’ propensity to refinance, using multivariate techniques to control for other differences in loan and borrower characteristics (Archer, Ling, and McGill, 2002; Canner, Dynan, and Passmore, 2002; Nothaft and Chang, 2004; Van Order and Zorn, 2002). In general, these studies find that low-income and minority homeowners are indeed less likely to refinance when interest rates fall and so may not realize the benefits of interest rate reductions to the same degree as other owners. These studies also suggest, however, that low-income and minority homeowners in general seem to be responsive to market conditions, but they are more likely to be impeded from taking advantage of these opportunities by other financial constraints.

One interesting contribution of Nothaft and Chang (2004) is their attempt to estimate the value of the missed refinance opportunities for African Americans and low-income owners. Compared with prototypical higher income, married-couple homeowners, African Americans are 16.5 percent less likely to refinance than Whites are, according to the authors’ findings. Furthermore, Nothaft and Chang estimate that missing the opportunity to refinance results in an average lost benefit of \$2,040 per African-American homeowner, or \$22.0 billion in lost benefits across all African-American homeowners. Employing the same methodology, they find that 6.9 percent of low-income homeowners miss out on refinance opportunities, with a total lost benefit of \$21.9 billion.

Nothaft and Chang also indicate a substantial difference between Whites and African Americans in the decline in interest rates obtained through refinance, but this observation is not the subject of detailed analysis. Although Whites average a decline of 1.33 percentage points, African Americans average a decline of only 0.39 percentage points. Several other recent studies that have examined racial disparities in mortgage interest rates have also observed that African Americans obtain much less financial benefit from refinancing. Susin (2003) and Boehm, Thistle, and Schlottmann (2006) both analyze data from the AHS and find that African Americans pay higher interest rates than Whites do. Susin’s analysis of all outstanding mortgages as of 2001 concludes that African Americans

pay about 0.44 percentage point higher rates on average; much of the difference is associated with differences in rates obtained through refinancing. Boehm, Thistle, and Schlottman's analysis of primary mortgages originated from 1990 through 2001 finds that interest rates obtained by African Americans who refinance are on average 0.75 percentage points higher than the refinance rates obtained by Whites. When the authors estimate statistical models that take into account a variety of borrower and loan characteristics, they find that the unexplained difference in refinance rates increases to 1.01 percentage points.

The significant differences in mortgage rates obtained by African Americans who refinanced is consistent with the findings from a large number of studies that have found that African Americans are much more likely than other racial/ethnic groups to use subprime lenders (Calem, Gillen, and Wachter, 2004; Calem, Hershaff, and Wachter, 2004; National Community Reinvestment Coalition, 2003; Pennington-Cross, Yezer, and Nichols, 2000; Scheessele, 2002). It is telling that Boehm, Thistle, and Schlottmann and Susin find that the disparities in mortgage interest rates between Whites and African Americans are not evident among purchase mortgages. This result is consistent with the fact that the growth of subprime lending during the 1990s was most evident among refinance loans and much less evident among purchase loans—at least until the past few years.

Boehm, Thistle, and Schlottmann also use their estimated model to disaggregate the reasons for African Americans' higher interest rates into portions attributable to differences in borrower characteristics compared with differences in treatment in the market associated with race that cannot be attributed to other borrower characteristics. They find that 87 percent of the difference between African-American and White refinance interest rates is attributable to different treatment in the market and only 13 percent is due to differences in borrower or loan characteristics. They note that some of the unexplained racial difference may be due to differences in credit history, a factor not captured by the AHS.

Nothaft and Chang's estimates of the value of missed refinancing opportunities do not take into account differences in interest rates obtained by borrowers of different income levels and race/ethnicity, but the disparities found by the studies cited previously suggest that they could be substantial. Carr and Schuetz (2001) present calculations showing that each additional percentage point of interest added to a 30-year mortgage increases the total interest paid over the life of the mortgage by at least \$20,000. If on average all African-American owners who refinance pay about 1-percentage-point higher rates than Whites do, the total aggregate costs of these higher rates would amount to several times Nothaft and Chang's estimated cost of \$22 billion in lost benefits from the 16.5 percent of African-American owners who did not refinance.

### **Tapping Home Equity Through Cash-Out Refinance or Home Equity Loans**

As noted previously, another issue to consider regarding mortgage finance decisions is the extent to which owners reduce the equity in their homes either through cash-out refinancing or home equity loans. Exhibit 3 illustrates the prevalence of these activities by homeowners' income, owners' race/ethnicity, and first-time owner status based on data from the 2003 AHS. Both cash-out refinancings and home equity loans are more than twice as common among moderate- and high-income owners than among low-income owners. Home equity loans are much more common among all groups. Although 1.6 percent of low-income owners took cash out of their homes through a refinanced

primary mortgage, 8.1 percent had a home equity loan in place in 2003. In comparison, among moderate- and high-income owners, 3.1 and 3.7 percent, respectively, had taken cash out through refinancing and 15.3 and 21.2 percent, respectively, had home equity loans outstanding.

As exhibit 3 also shows, African Americans were less likely than Whites to have either taken cash out through a refinancing (1.7 compared with 2.7 percent, respectively) or have a home equity loan (8.4 compared with 15.5 percent, respectively). Hispanics were also less likely than Whites to have a home equity loan (8.7 compared with 15.5 percent, respectively), but they were slightly more likely to have taken cash out through refinancing (3.2 compared with 2.7 percent, respectively). Once again, first-time buyers are much less likely than any other group of owners to tap home equity, no doubt reflecting the fact that they have less equity in their homes.

The differences in the propensity to tap home equity through borrowing, which are evident in these simple cross-tabulations, are supported by several recent studies that have used multivariate techniques. Using the AHS, Nothaft and Chang (2004) estimate models predicting the incidence of both cash-out refinancings and the use of second mortgages to draw down equity. In addition to controlling for income and race/ethnicity, these models also control for the loan-to-value ratio, the size of the primary mortgage, and the borrowers' payment-to-income ratio. Higher income households in general are more likely to tap home equity through both cash-out refinancing and second mortgages. First-time homebuyers are less likely to use either type of financing to draw down their equity. Regarding minorities, Nothaft and Chang find that "other" minority households are less likely to use refinancing to take cash out, and African Americans are no different from Whites in this regard. African Americans are, however, much more likely than Whites to take out a second mortgage, while other minorities are no different from Whites.

Finally, Canner, Dynan, and Passmore (2002) also examine the tendency for owners to take cash out through refinancing. They do not show results for the probability of taking cash out but, instead, indicate the association between borrower and loan characteristics and the amount of cash taken out. The authors find that the single most important factor is the borrower's race/ethnicity, with minorities taking out much less cash (\$5,537 less, on average) than Whites do. Canner, Dynan, and Passmore find that homeowners' income is not as important as race in determining the probability of taking cash out; those whose income is less than \$40,000 take out \$1,847 less, on average.

To the extent that some owners are tapping their equity, it would be interesting to know how the use of proceeds from cash-out refinancing or home equity mortgages differs by income and race/ethnicity to evaluate the extent to which these funds are used to enhance owners' asset ownership or simply to fund current consumption; unfortunately, little information is available on

### **Exhibit 3**

**Propensity To Tap Home Equity by Income and Race/Ethnicity of Owners**

	<b>Low Income (%)</b>	<b>Moderate Income (%)</b>	<b>High Income (%)</b>	<b>White (%)</b>	<b>African- American (%)</b>	<b>Hispanic (%)</b>	<b>First-Time Buyers (%)</b>
<b>Share of all owners with—</b>							
Cash-out refinance	1.6	3.1	3.7	2.7	1.7	3.2	0.3
Home equity loan	8.1	15.3	21.2	15.5	8.4	8.7	7.8

*Source: 2003 American Housing Survey*

this topic. Canner, Dynan, and Passmore (2002) report on the differences in the use of cash taken out among all owners and find that the most common use is the repayment of other debts (51 percent), followed by home improvement (43 percent) and consumer expenditures (25 percent). More rarely, the authors find that owners use proceeds to make investments in stocks or other financial instruments (13 percent) or real estate and businesses (7 percent). The AHS reports only on the proportion of cash used for home improvements. Low-income households are slightly less likely to use cash-out proceeds for home improvement expenses compared with moderate- and high-income owners (57 percent compared with 62 percent, respectively). Regarding race/ethnicity, Hispanics (67 percent) are more likely to use cashed-out funds for home improvement than either Whites (60 percent) or African Americans (56 percent).

Haurin and Rosenthal (2005c) provide some indication of the extent to which homeowners tap home equity for other purposes. This study employs a different approach than the studies discussed previously to estimate the extent to which homeowners tap capital gains for other purposes. The authors' basic approach is to predict levels of total household debt and nonhousing assets as a function of a variety of household characteristics, including changes in the value of the home. The study uses two different data sets, including pooled observations from the Survey of Consumer Finances from 1983 through 2001 and the NLSY from 1980 through 2000. The authors conclude that low-income and minority households have a somewhat higher propensity to tap capital gains, because, for each dollar gained in housing equity, the amount of household debt among these owners increases by between 12 and 18 cents, compared with an increase of 8 to 17 cents for high-income households. This conclusion differs from the studies focusing solely on mortgage debt, which found that low-income households and minorities were less likely to borrow against their homes. The results suggest that these owners may be more likely to use nonmortgage debt as a means of tapping home equity—or that they are less likely to experience gains in house values and so have less opportunity to do so.

One key finding of this study is that important differences by income are evident in how owners use their housing wealth. High-income households appear to spend most of their gains on nondurable goods because they experience little increase in the value of nonhousing assets. For low- and moderate-income households, on the other hand, much of the increased debt is associated with an increase in the value of nonhousing assets, with estimates ranging from 11 to 15 cents. Thus, although high-income households are more likely to tap housing equity for consumer expenditures, low- and moderate-income households are more likely to use their gains to finance the purchase of other durable goods.

A significant rise in recent years in the amount of home equity being extracted through refinancing is one important caveat regarding the findings of most of these studies. Freddie Mac data on conventional conforming loans show that the amount of home equity withdrawn through refinancing grew rapidly beginning in 2001. Before that year, the peak value of home equity cashed out was \$40 billion in 1998. In 2001, \$83 billion in home equity was cashed out. The amount continued to rise sharply through 2006, when \$318 billion was cashed out.<sup>15</sup> The rise in cash-out refinancing seems to be

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<sup>15</sup> See [http://www.freddiemac.com/news/finance/docs/cashout\\_vol\\_annual.xls](http://www.freddiemac.com/news/finance/docs/cashout_vol_annual.xls). Because these figures exclude government-insured, jumbo, and subprime mortgages, they undoubtedly underestimate the total volume of cash taken out, but the trends are nonetheless instructive.

driven by a combination of rapid growth in housing values, continued low interest rates, and increases in consumer debt in general (Canner, Dynan, and Passmore, 2002). Most of the studies cited previously rely on data from 2001 or earlier, which is before the peak of this cash-out boom.

## **Investing in Home Maintenance and Improvements**

Another important choice that borrowers face after purchasing a home is whether and how much to invest in maintenance and improvements. These investments are important for several reasons. A certain level of investment in the house is needed to counter the effects of depreciation and protect the owner's investment. Deferred maintenance can lead to larger problems and have significant effects on the home's value. For example, ignoring a leaking roof can lead to substantial damage to both the structure and the interior of the home. Aside from being necessary to maintain the value of the home, maintenance expenditures are of interest because they can also add to the financial burdens of homeownership. If low-income and minority households purchase older homes that require greater levels of ongoing maintenance, the cost of such maintenance will increase their total housing costs.

Very little research has examined low-income owners' experience in having to make investments to maintain and repair their homes. Rohe et al. (2003), in their investigation of this issue, surveyed low-income participants in homeownership counseling programs offered through affiliates of the Neighborhood Reinvestment Corporation in eight locations around the country. The survey, conducted about 18 months after participants received counseling, asked those who had purchased homes about their experience with unexpected major costs associated with the house and whether any repairs were needed that the owner had been unable to afford. The responses from 343 homebuyers suggest that both of these issues were fairly common among the low-income buyers participating in these programs. Nearly one-half (48 percent) of the respondents indicated that they had experienced a major unexpected cost, with the most common problem being the need to repair one of the home's major systems, such as heating or plumbing. A little more than one-fourth of buyers (28 percent) also reported a needed repair that they were unable to afford, most commonly including problems related to the roof, foundation, or major systems. The survey results suggest that home maintenance issues may be fairly common among low-income buyers who receive assistance from homeownership counseling programs.

Although little work explicitly focuses on low-income homeowners, a fair amount of literature has evaluated the factors associated with an owner's decisions about whether to invest in home improvements and, if so, how much to invest. In general, this research finds that low-income and minority households are less likely to make improvements and, when they do, their investments are smaller (Baker and Kaul, 2002; Boehm and Ilhanfeldt, 1986; Harding, Miceli, and Sirmans, 2000; Mendelsohn, 1977; Montgomery, 1992).

Another interesting finding from this literature is that, although low-income homeowners in general are more likely than higher income owners to engage in do-it-yourself (DIY) efforts to maintain and improve their homes, minority homeowners are less likely to engage in DIY projects (Bogdon, 1996; Mendelsohn, 1977). Bogdon speculates that minorities might not be as likely to engage in DIY efforts because they are less likely to have grown up in an owner-occupied home and so have had less opportunity to develop the skills needed for these efforts. She also posits that some low-income

households may have greater difficulty in undertaking DIY efforts if they have to work long hours to compensate for lower hourly wages.

Tabulations of the 2003 AHS by the Joint Center for Housing Studies (2005) shed some light on the variation by income and race/ethnicity in the prevalence of DIY efforts compared with hiring professional contractors for home improvement projects. The Joint Center figures show that, although 53 percent of Whites undertake DIY projects, only 42 percent of African Americans do. Hispanics are actually 8 percentage points more likely than Whites to undertake DIY efforts. One explanation for the differences between Hispanics and African Americans may be that Hispanic immigrants come from countries where it is very common for households to construct their own housing (so-called self-help housing). Another factor might be that Hispanic owners are even more likely to be in married-couple households than Whites are and so have more adults in the household to support DIY activities.

Bogdon suggests that, to the extent that less DIY activity is the result of less knowledge of how to undertake these projects, the obvious policy response would be to make training available for new homeowners to develop these skills. If in fact the lower level of DIY activity among African Americans is indicative of less ability to undertake repairs and improvements to the home, it also raises concerns that these owners are deferring routine maintenance and potentially increasing the magnitude of these problems. This issue further highlights the lack of research that provides a good understanding of the maintenance needs of low-income homeowners, particularly African Americans, and how they respond to these needs.

A final issue regarding maintenance and improvement expenditures that has not been studied much is the relationship between neighborhood conditions and an owner's decision to invest in his or her home. In theory, poor neighborhood conditions would deter investment in the home because the owner would be less likely to recoup his or her investment in a declining area. Although most studies of home improvement activities include controls for region and whether the home is in a central city or suburban area, few have attempted to capture variations in neighborhood conditions. Of those that have, Boehm and Ihlanfeldt (1986) find that owners in areas with high crime rates and higher shares of surrounding buildings with structural defects are less likely to invest in their homes. On the other hand, Montgomery (1992) includes the AHS measure of neighborhood quality but finds that it is only weakly correlated with home improvement activities. One study, Ioannides (2002), directly assesses this issue and analyzes the association between spending on home improvement by other homeowners in the immediate vicinity on a homeowner's own improvement spending. Although he finds a strong, positive effect of neighbors' home improvement investments, the study does not identify whether this effect varies by the characteristics of the neighborhood. The question of whether investment in home upkeep and improvement varies with neighborhood condition is not well studied.

## **Financial Benefits of Homeownership**

The belief that homeownership is the primary means of wealth creation for most U.S. households is a fundamental reason why policymakers have made it an important goal to increase homeownership opportunities for low-income and minority families. Indeed, cross-sectional evidence suggests



a powerful role for homeownership in wealth creation. In 2000, equity in homes accounted for 56 percent of aggregate wealth among households with incomes in the lowest quintile compared with 32 percent of aggregate wealth among all households. Housing wealth was even more important among African Americans, accounting for 62 percent of their aggregate wealth (Orzechowski and Sepielli, 2003). The trouble with such ex post views is that they do not address the proportion of households for whom homeownership may have produced negative results (because they revert to renting and are counted among that cohort), do not consider self-selection of households more apt to save and invest in homeownership, or do not discuss the observable differences among owners and renters that may also drive wealth accumulation, such as higher average incomes, wealth, and residential stability.

Although faith in the financial benefits of homeownership is strong, the literature examining owner-occupied housing from a financial investment perspective reveals that ownership is certainly not always the best choice. Chief among the concerns is the risk of experiencing weak appreciation in house values or even declines in house price over an investment period. These concerns are well founded; over the past 30 years, a number of markets have experienced significant booms and busts in housing prices, exposing owners who are forced to move at the wrong time to potentially significant financial losses. In other markets, even longrun appreciation in house prices has not kept pace with inflation. In these areas, owners would have been better off financially if they had invested in a balanced portfolio of stocks and bonds. Also adding to the risk of losing money on owning relative to renting are the significant transaction costs associated with buying and selling homes. Finally, even if homeownership is, in fact, a good investment for the average household, the question regarding whether it is a good investment for low-income and minority households remains.

Before turning to the central question of whether low-income and minority homeowners are less, more, or just as likely as other owners to benefit from housing appreciation, it is worth considering the general question of how financial returns to housing compare with other investments. During such an analysis, when financial leverage is not taken into account, estimates suggest that the financial returns from homeownership are a little lower than for stocks but with lower risk (Goetzmann and Spiegel, 2002). When tax considerations, imputed rent, and financial leverage are included in the analysis, on average and over fairly lengthy holding periods, homeownership is found to generate significant financial returns relative to renting and investing a downpayment in other assets (Case and Shiller, 1990; Flavin and Yamashita, 2002; Goetzmann, 1993). When financial leverage is included, the financial returns of homeownership were found to be even greater than that of stocks in all four metropolitan areas studied by Goetzmann (1993) and also by Case and Shiller (1990) over the 1980-to-1996 period. Indeed, Goetzmann concludes that when tax benefits, the value of housing services, and financial leverage are all considered together, returns from homeownership increase by a multiple of between 1.6 and 3.7 and greatly exceed the returns from alternative investments.<sup>16</sup> Thus, fairly strong support exists for the view that homeownership can be a sound financial investment.

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<sup>16</sup> Several studies also examine the issue of how much housing should be owned to optimize a household investment portfolio. In general, the household's consumption demand for housing is found to force lower wealth households to hold a larger share of their wealth than is optimal in housing. These studies still find, however, that given this constraint and the risks and returns offered by owner-occupied housing, homeownership does represent a constrained optimum investment strategy (Brueckner, 1997; Flavin and Yamashita, 2002; Goetzmann, 1993).

## Housing Appreciation and the Financial Return to Homeownership

House price appreciation is the single most important driver of the financial returns of homeownership relative to renting. Especially for those homeowners who leverage their investment by taking out mortgages, even small rates of price appreciation can produce large leveraged returns.

### Variations in Housing Appreciation by Income and Race/Ethnicity

A fairly extensive body of literature evaluates differences in housing appreciation rates across different value submarkets within metropolitan areas. Dietz and Haurin (2003) and McCarthy, Van Zandt, and Rohe (2001) provide fairly thorough reviews of this literature. A variety of approaches are used to define submarkets by value in these studies. One approach divides individual homes into different value categories (for example, lower quartile or upper quartile) without regard to the specific neighborhood where the home is located. Another approach examines appreciation rates for individual neighborhoods as a function of neighborhood characteristics, including the median home value. Finally, a few studies use household microdata that provide information on the characteristics of the occupant and the home that can be used to define the market segment. A common feature of many of these studies is that they focus on a single market area or a small number of markets over a specific time period. In these cases, it is not clear if the findings are unique to just the individual markets over the specific period studied or if they reflect relationships that hold more generally across markets and over all time periods.

Although it is difficult to draw definitive conclusions about differences in appreciation rates by housing value from studies that examine only a few markets, when taken as a whole, the literature leads fairly convincingly to the conclusion that no consistent difference is evident in appreciation rates between low-income and high-income market segments. Although it is true that several studies have found that lower valued homes or neighborhoods have experienced less appreciation (Kim, 2000; MacPherson and Sirmans, 2001; Poterba, 1991; Seward, Delaney, and Smith, 1992), it is also the case that others have found that lower valued homes or neighborhoods have experienced more appreciation (Archer, Gratzlaff, and Ling, 1996; Belsky and Duda, 2002; Case and Mayer, 1996; Case and Shiller, 1994). Most commonly, the results of these studies find either no significant difference in appreciation rates or mixed results. This observation leads to the conclusion that whether low- or high-valued homes or neighborhoods appreciate more depends on the specific time period or the specific market studied (Case and Marynchenko, 2002; Goetzmann and Spiegel, 1997; Kiel and Carson, 1990; Li and Rosenblatt, 1997; Pollakowski, Stegman, and Rohe, 1992; Quercia et al., 2000; Smith and Ho, 1996; Smith and Tesarek, 1991).

In comparison with studies of differences in appreciation rates across different submarkets defined in terms of housing values, much less recent research examines differences in appreciation rates by the race/ethnicity of the owner or the racial/ethnic composition of the neighborhood.<sup>17</sup> Given

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<sup>17</sup> Literature from the 1970s and earlier was concerned with the issue of whether the racial segregation of African Americans resulted in African Americans and Whites paying different prices for comparable housing. These studies generally focused on evaluating differences in the price of housing in a single market and at a single point in time based on the racial composition of a neighborhood and how the racial composition had been changing. The general conclusion of this literature is that, compared with Whites, African Americans paid a premium for housing in the 1960s; however, as White suburbanization accelerated in the 1970s, house prices in predominantly African-American neighborhoods were lower than in White areas. See, for example, King and Mieszkowski (1973), Schnare (1976), Schnare and Struyk (1977), and Yinger (1978).

the thinner literature on this topic, it is more difficult to draw general conclusions. Nevertheless, it appears that the effect of neighborhood racial/ethnic composition on price appreciation is also mixed. After including controls for the housing unit, neighborhood, and household, Kiel and Zabel (1996) found that the effect of neighborhood racial/ethnic composition on house prices was inconsistent in a study of three metropolitan areas from the late 1970s through 1990. Using similar controls to study two Florida metropolitan areas from 1970 to 1997, MacPherson and Sirmans (2001) found a higher Hispanic share was associated with greater price appreciation over the period but the African-American share was not associated with price changes. The authors also found that increases in the African-American share over time were associated with less appreciation in both areas but increases in the Hispanic share were associated with higher appreciation. Similarly, Coate and Vanderhoff (1993) concluded that, nationally, over the 1974-to-1983 period, homeowners' race/ethnicity was not statistically significant in predicting house price changes after other controls. Despite this finding, Quercia et al. (2000), who examined price changes in Miami over the 1972-to-1993 period, found that homes in neighborhoods with a high concentration of minorities experienced lower appreciation over the period than other neighborhoods did. Kim (2000) found the same result in Milwaukee over the 1971-to-1993 period. It is also important to bear in mind that a number of studies suggest that minority first-time homebuyers are not concentrated in predominantly minority neighborhoods anyway, although they are moving to areas with higher minority shares than White first-time homebuyers. (For a review of this literature see Herbert and Belsky, 2006.)

### **Variation in Appreciation by Structure Type**

Another key factor to consider regarding differences in appreciation rates is the type of home purchased. For the most part, studies examining both the financial returns to housing in general and differences in appreciation rates for different segments of the housing market have focused on price trends for single-family detached housing. From 1989 to 2003, however, nearly one-fourth of low-income first-time homebuyers purchased a manufactured home, compared with only 11 percent of moderate-income and 4 percent of high-income buyers. In addition, African-American first-time buyers are also somewhat more likely to purchase single-family attached homes (12 percent) than are all buyers (8 percent), and first-time buyers in high-cost markets are more likely to purchase condominiums in multiunit structures as a more affordable way of attaining homeownership.

Unfortunately, the literature on the effect of structure type on price appreciation is particularly thin. Tong and Glascock (2000) claim that their study of Baltimore, Baltimore County, and Montgomery County in Maryland was the first designed to model drivers of appreciation rates across single-family detached homes, townhomes, and condominiums. They do note, however, that Pollakowski, Stegman, and Rohe (1992) found evidence that single-family detached homes appreciate more rapidly than others and that Clapp, Giaccotto, and Tirtiroglu (1991) found that condos appreciated less rapidly than single-family homes did in the Hartford metropolitan area. Examining the issue directly, Tong and Glascock (2000) find substantial differences in the relevant explanatory variables and in appreciation rates by structure type. Even in just these three areas, however, detached homes appreciated more in some places and during some time periods while attached homes appreciated more in other places and during other time periods. Only condos were found to have a consistent effect on prices—in this case, a positive association with price volatility. Given only a

single direct study of effects, however, the appropriate conclusion is that the correlation of price appreciation with structure type is sensitive to temporal and spatial variations in the supply of and demand for different structure types.

Regarding the influence of manufactured housing, the consistent conclusion of the few studies of the issue is that ownership of land is the decisive factor in whether the housing appreciates at or near the rates of other structure types. In cases in which owners of the manufactured housing also own the land, manufactured homes generally appreciate at close to the same rate as other homes do (although with greater variation in returns) (Apgar et al., 2002; Boehm and Schlottmann, 2004a; Jewell, 2003; Stephenson and Shen, 1997). Absent land ownership, manufactured homes offer little opportunity for appreciation.

### **Influence of the Timing of Purchase and Sale on Financial Returns**

Although the existing literature does not support the view that low-valued homes or low-income communities necessarily produce less appreciation, the literature examining housing appreciation patterns makes clear that the timing of purchases and sales matters a great deal because appreciation rates vary substantially both across markets and over time. For example, an analysis of price trends in 163 market areas for which Freddie Mac produces price indexes reveals that, between 1990 and 1995, slightly more than one-fourth of these areas experienced declines in nominal home values and more than one-half had gains that did not keep pace with inflation. Since 1995, however, strong house price growth has been widespread. Between 2000 and 2005, 41 percent of market areas had nominal price growth of more than 50 percent and, in virtually all markets, house price growth has outpaced inflation. The Freddie Mac price indexes also reveal that over the long run the periods of price increases more than offset the periods of declining prices as house price growth exceeded inflation for the 1975-to-2005 period in all but 13 of 163 markets. Because the typical homeowner is unlikely to own a single home over the long run, however, whether a homebuyer realizes a positive financial return depends critically on both what market he or she lives in and when he or she buys and sells the homes. In fact, since the beginning of 2006, house price growth has slowed significantly, with nearly one-fourth of the markets tracked by Freddie Mac experiencing price declines by the end of 2007. Many of those who bought homes in recent years are likely to see their home values decline.

An analysis by Belsky and Duda (2002) underscores the importance of the timing of the purchase and sale of a home in determining the financial returns realized by individual owners. Analyzing repeat sales data for single-family homes in four markets over the 1982-to-1999 period, they find that the estimated mean return realized by owners of low-cost homes was consistently large and positive in all four areas but the average return for moderate- and high-cost homes was small or negative in most cases. After taking into account both general inflation and the transaction costs of selling homes, the authors also find that a large share of owners at all price levels in all markets experienced a financial loss. Thus, low-cost homes experienced greater price appreciation and exposed buyers to less risk of loss compared with higher cost homes—at least in the markets and time period Belsky and Duda studied. With buyers of low-cost homes in all four metropolitan areas less likely to lose money, homeownership appears to have been less of a gamble for those who purchased low-cost homes in those areas. In fact, the authors find that the better financial return

experienced by buyers of low-cost homes mostly reflected less where they bought than it did better timing of purchases, because high-cost purchases made up a larger share of purchases around price peaks and low-cost purchases made up a greater share of purchases during troughs. This result leads Belsky and Duda to question whether efforts to increase homeownership among low-income families during the recent housing boom might mean that these buyers will be more likely to experience losses during the current bust.<sup>18</sup>

## **Comparing the Costs of Owning and Renting**

The previous section examined whether homeowners—and particularly low-income and minority homeowners—are likely to realize a fair financial return on their investment through appreciation in home values. Although homeownership may be likely to provide a fair financial return, it is still possible that individuals could be financially better off by renting a home and devoting their savings to other investments.

The ongoing costs associated with owner-occupied homes include mortgage interest, property taxes, maintenance, and hazard insurance. In addition, transaction costs are associated with buying and selling a home and with originating a mortgage both at the time of purchase and when the mortgage is refinanced. These costs are offset by the financial benefits associated with appreciation in the value of the home and the potential deductibility of payments for mortgage interest and property taxes. Thus, a complete accounting of the costs of homeownership must take into account the ongoing costs of paying for the home, the annual tax benefits realized (if any), and transaction costs and capital gains on the sale of the home.<sup>19</sup>

In comparison, the costs and benefits of renting are fairly straightforward. The costs include rent payments, the transaction costs of signing a new lease (such as a REALTOR® fee), and the costs of leaving an existing one (such as loss of a security deposit for damage to the unit or fees for breaking a lease). These costs are offset by the financial gain associated with investing funds that would otherwise be used to support the purchase of a home. (Alternatively, rather than count this return as a benefit of renting, these financial returns on savings can be counted as an opportunity cost associated with owning.)

Before turning to the literature that compares the costs of owning and renting, it is helpful to first examine each component of these costs to assess how they might differ based on household income or race.

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<sup>18</sup> Several caveats to the results are important to examine. First, most of the cases in their data set consisted of owners who sold their homes within 9 years of purchase. Owners who remain in homes more than 9 years account for more than one-half of all buyers and are more likely to benefit from the tendency of homes to appreciate above the rate of real income growth over the long run. Second, the analysis is done in real terms. Thus, sellers might lose money in real terms but still walk away from a sale with cash in hand from nominal gains. Indeed, most owners sold their homes for more than they bought them for, even after transaction costs. Third, the study examines only single spells of homeownership. It is possible that those who sold their homes near the bottom of a cycle and experienced a real loss may have been well positioned to benefit from the next upswing in prices.

<sup>19</sup> Because capital gains taxes are not paid on either the first \$250,000 in gains for single-person owners or \$500,000 in gains for married-couple owners, it is generally assumed that no capital gains are paid on housing appreciation by homeowners. Although this treatment of capital gains is relatively new, the tax treatment of capital gains on owner-occupied homes in the past also generally made it possible for most owners to avoid these taxes.

### Variations in Owner and Renter Costs by Income and Race/Ethnicity

The way in which the cost of owning differs from the cost of renting is most obvious when examining income. The difference results from the opportunity to deduct mortgage interest and property tax payments from income and the correlation of income with both marginal tax rates and the average size of a mortgage. An individual tax filer will benefit from this provision of the tax code only if the value of his or her itemized deductions exceeds the standard deduction.<sup>20</sup> The value of this benefit is equal to the amount of itemized deductions in excess of the standard deduction multiplied by the marginal tax rate paid on the income that is sheltered by these excess deductions. Low-income homebuyers are less likely to benefit from these tax provisions because their mortgage, real estate tax payments, and other itemized deductions are less likely to exceed the standard deduction and because their lower marginal tax rates reduce the value of this benefit if they do itemize.

Follain and Ling (1991) and Capone (1995) find that low-income married-couple households are unlikely to realize any tax benefits from homeownership. A simulation in Herbert and Belsky (2006) reveals that at the lowest income level considered (\$15,000), single-parent, married-couple, and single-person households all fail to benefit from the tax considerations; as household income rises to \$30,000, both single-person and single-parent households begin to realize some tax benefits from homeownership because itemized deductions exceed the standard deduction. Even at this income level, married couples still do not realize any benefits because of the higher level of their standard deduction. Given that the average income in 2003 for first-time low-income buyers was \$30,000, this simulation suggests that the tax benefits realized by typical first-time buyers do little to reduce their out-of-pocket housing costs.

Another aspect of owners' costs that is likely to vary by income and race is the mortgage interest rate. Before 1995—and not really until subprime lending became much more common after 2000—rate differences of any magnitude at the time of loan origination for comparable mortgage products were rare and generally small. With the surge in subprime lending, which carries much higher interest rates, all of that has changed. By 2006, about one in five originated loans was subprime; likewise, between 10 and 15 percent of all mortgage debt outstanding was subprime. Release of high-cost lending information with the 2004 Home Mortgage Disclosure Act revealed conclusively that these loans are particularly common among low-income and minority owners. In addition, as discussed previously, low-income and minority owners are less likely to refinance their mortgages to lower interest rates when such opportunities arise. Minorities, in particular, are both less likely to refinance when interest rates drop and, when they do refinance, they are found to pay interest rates that are about 1 percentage point higher than the rates that Whites pay. In short, differences in mortgage choices, both at purchase and over time, are likely to contribute to differences in the cost of owning relative to renting for low-income and minority owners.

A particularly challenging and important aspect of the comparison of the costs of owning and renting is determining the market rent for a home of a given value. One approach used is to make

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<sup>20</sup> Other than mortgage interest and property tax payments, the next most common itemized deductions are state and local taxes and charitable contributions. Other categories of itemized deductions include medical, employment, and educational costs, but these are much less commonly claimed given the rules governing what can be claimed as a deduction in each of these categories.

an assumption about the ratio of annual rent to the home's value. Most studies do not address the question of whether variations might exist in the ratio between rent and house values. Findings from Linneman and Voith (1991) and Capone (1995) suggest that a higher ratio of rents to values among low-priced homes might exist; however, with only two studies of the issue, one done in a single city and the other relying on interviews with real estate professionals around the country, this area warrants further study.

Another way in which the costs of owning may vary by income and race results from differences in the length of time that owners occupy a home. Several studies have found that low-income and minority owners are more likely to move within 5 years, making renting more attractive than owning. Yet another source for potential differences is transaction costs, but this issue has not been studied at all; it is possible that low-income or minority sellers are charged higher brokerage fees, closing costs, or mortgage origination fees. Although available studies are less conclusive regarding differences in appreciation rates experienced by minorities, no strong evidence indicates that appreciation rates are lower for these owners.

### **Studies Comparing the Costs of Owning and Renting**

Few studies compare the all-in costs of owning and renting. All of the studies rely on simulations to explore how different assumptions influence the desirability of homeownership. All try to anchor these simulations in estimates of actual values of critical variables over some period in some set of places, but they differ in important ways in terms of how detailed their estimates of costs are; the methods used to determine the starting relationship between market rents and home values of comparable units; whether they assess the importance to results of variations in price trends, rents, and other market factors after a tenure decision is made; and how tax issues are handled. In all cases, however, actual households are not tracked over time. Instead, average values of factors, such as price appreciation, marginal tax rates, rents, and returns on common investments, are used to simulate returns.

Due to variations in methods and assumptions used in these studies, the authors reach different conclusions about the circumstances under which owning is financially better than renting and how frequently these circumstances occur. Examining the literature, it is difficult to reach any definitive conclusions about whether low-income or minority households are better off owning or renting. The literature does make it clear, however, which factors are most critical. Several studies find that determining whether owning is financially preferable to renting is especially sensitive to assumptions about the level of rents compared with house values at the time of the initial tenure choice and with the course of house prices and rents after the initial decision is made (Belsky, Retsinas, and Duda, 2005; Capone, 1995; Goodman, 1998; Mills, 1990). Unfortunately, very little empirical information is available on how rents compare with values for comparable housing units, and the studies take different approaches to making these estimates. The variability in these estimates is enough to drive large differences in the minimum number of years it typically takes before owning becomes a better financial choice than renting. The literature also suggests that, under a range of reasonable assumptions, the value of tax benefits can be quite important in determining whether owning is a better deal than renting (Capone, 1995; Goetzmann and Spiegel, 2002; Mills, 1990). The fact that low-income households and married-couple low-income households receive fewer tax benefits from owning means that these households are more likely to be better off renting

than other households are. Capone's (1995) analysis also indicates that, as long as initial rents are high relative to values, owning is clearly a better financial choice than renting for stays as short as 3 years, whether tax benefits are realized or not.<sup>21</sup>

Because Mills (1990) and Capone (1995) assume a constant relationship between house prices and rents, their studies do not shed light on how fluctuations in the relative levels of house prices and rents over time affect the estimation of whether owning is financially preferred to renting. As Goodman (1998) notes, the assumption that rents and house values remain in equilibrium over time ignores the fact that housing prices may be slow to adjust to changes in market conditions.<sup>22</sup> To address this concern, Goodman uses actual national trends in home prices and rents between 1985 and 1995 to estimate the costs of owning and renting over this period. Using the AHS from 1985, he estimates the rent on a prototypical single-family home by a hedonic regression model, with the value of the home based on a tabulation of owner-reported home values. His estimated annual rent is 6.9 percent of the house value, remarkably close to the assumption of 7 percent used by Mills. Goodman then trends these values over time using the Freddie Mac index of home prices and the Consumer Price Index for rental housing. The data presented by Goodman show that, over this period, rents and house prices grew by a nearly identical average annual growth rate; as a result, Goodman's rent-to-value ratio hardly deviates from the starting assumption of 6.9 percent, so his results do not offer a valid test of how sensitive this analysis is to an assumption of a stable relationship between rents and house values. Thus, it is not surprising that his conclusion differs little from Mills' conclusion. Goodman finds that owning is preferable to renting only if the home is occupied for about 9 years. This time period is only somewhat longer than the Mills estimate because Goodman makes somewhat more conservative assumptions about the value of tax benefits.

Belsky, Retsinas, and Duda (2005) provide a more thorough test of the importance of the volatility of house prices and rents in determining whether owning is better financially than renting. As with the other studies reviewed, they construct an equation to estimate total housing costs for owners that can be compared with the cost of renting. As Goodman does, rather than assume a constant relationship between house prices and rents, they use price indexes to incorporate actual trends in these relative prices over time; however, they improve on Goodman's analysis by analyzing price trends in four different metropolitan areas over an 18-year period. Belsky, Retsinas, and Duda chose the four markets for study because they represent different degrees of house price growth and volatility. They focus their analysis on estimating how often owner costs are less than renter

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<sup>21</sup> Capone cites two sources in support of a higher assumed ratio of rents to values for low-income households. First, he cites a study by Linneman and Voith (1991) that used the AHS for the Philadelphia metropolitan area in 1982 to estimate rent-to-value ratios as a function of both housing and occupant characteristics. Although this analysis finds a market average rent-to-value ratio of 10 percent, it also finds that this ratio is consistently higher for lower income households—generally exceeding 12 percent for those with incomes of \$15,000 or less. Linneman and Voith argue that the higher capitalization rates found for lower income households are likely a result of the lower tax benefits from homeownership for these households. Goodman and Kawai (1982), in providing further support for this view, purport that differences in tax benefits by income are reflected in housing prices. Second, Capone justifies his assumption of higher rent-to-value ratios on the basis of interviews he conducted with real estate professionals to gather their assessment of the ratio of annual rents to property values for single-family homes.

<sup>22</sup> For example, Blackley and Follain (1996) find that investors' costs are much more volatile than market rents. Also, Gallin (2004) finds that, although rents and house prices do tend to move together in the longer run, in the short run they may exhibit divergent trends.



costs, assuming holding periods of 3, 5, or 7 years. Given the length of their data series on rents and house values, the authors can identify 16 different 3-year holding periods, 14 5-year holding periods, and 12 7-year holding periods. They then report the share of these different holding periods in which owners' costs were lower than renters' costs.

Reflecting their concern about whether homeownership is financially appealing for low-income households, Belsky, Retsinas, and Duda's starting home value is one-half of the market median value. They use data from the Bureau of Labor Statistics on owners' estimates of the rental value of their properties and compare these estimates with home values based on tabulations of the AHS for the markets. The ratio of rents to values is then used to estimate a rent level for homes at one-half the median home value. The authors then apply the market-specific Freddie Mac house price indexes and the consumer price indexes for rental housing to these initial values. Although not reported in their paper, the authors indicate that the starting ratio of rents to values is on the order of 5 to 7 percent across the markets studied.

In their simulations, Belsky, Retsinas, and Duda find that the two factors most likely to affect the cost of owning for low-income households relative to higher income households are whether they are able to realize any tax benefits from owning and the costs of mortgage finance. These factors are relevant because the price indices used were not divided into high- and low-price segments. Thus, the appreciation by segment is assumed to be the same. The authors then present a series of scenarios to test the effect of these factors on the relative costs of owning and renting. To test the importance of tax benefits on the costs of owning, they simulate returns, assuming households do not realize any tax benefit and assuming households benefit only to the extent by which the value of their mortgage and property tax deductions exceed the standard deduction. To test the effect of mortgage choices, they simulate returns on prime rates and higher rates and examine what happens if opportunities for refinancing to a lower cost mortgage are missed.

Pooling their results from the four markets, in their base case scenario in which full tax benefits are realized, Belsky, Retsinas and Duda find that, in 53 percent of the possible 3-year holding periods, owning would be preferred to renting. Extending the holding period to 5 or 7 years, the share of cases in which owning is preferred to renting rises to 63 percent of all possible holding periods. Thus, in just a little more than one-half of the possible holding periods in the four markets, owning was better than renting. In keeping with the fact that their analysis focuses on low-valued homes, the authors' results indicate that tax benefits have little effect on the likelihood that the costs of owning are lower than the costs of renting. Belsky, Retsinas, and Duda do find, however, that having an interest rate that is 2 percentage points higher, which simulates the effect of moderately higher interest rates from a subprime loan, reduces the likelihood that the costs of owning are less than the costs of renting by between 8 and 16 percentage points. Further increasing the interest rate obtained to be 5 percentage points above prevailing rates lowers the likelihood that owning is preferred to renting to only between 15 and 22 percent. In short, the authors' analysis indicates that very high-cost subprime loans make it unlikely that owning would be cheaper than renting.<sup>23</sup>

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<sup>23</sup> The authors also examine the effect of missing refinance opportunities but find very little effect on the likelihood that owning is financially preferred to renting. This result likely reflects the fact that they assume that only 2 years (1993 and 1998) offered refinance opportunities, however, so that only a small subset of all possible holding periods was affected by these missed opportunities.

In assessing the conclusions reached by Belsky, Retsinas, and Duda, it is important to bear in mind that their analysis is based on a fairly low ratio of estimated rents to values. They do not attempt to assess whether these ratios vary by price segment of the market or what effect variations in the ratio would have on their conclusions. The ratio expanded considerably in most places in the first half of the 2000s as prices soared but rents did not. Nonetheless, their analysis does show that volatility in both house prices and rents is an important factor in determining whether owning is cheaper than renting. The analysis also shows that the higher mortgage rates associated with subprime lending, which are more likely to be incurred by low-income and minority owners, can have a significant effect on whether owning is cheaper. In particular, if mortgage interest rates are 5 percentage points above prime rates, the share of cases in which owning is better financially drops from about one-half to one-fifth. Large shares of low-income owners who bought in the 2003-to-2006 period using subprime mortgages, therefore, are at considerable risk of having made a choice that will lead them to become less well off than if they had elected to rent.

### **Homeownership and Longrun Wealth Accumulation**

The complex web of factors that play a role in determining whether owners realize financial benefits from homeownership includes the degree to which house prices increase, whether owners are able to sustain homeownership, the timing of home purchases and sales relative to housing price cycles, the degree to which owners can take advantage of the income tax benefits of owning, and the choices owners make along the way regarding financing, maintaining, and improving their homes. The literature reviewed previously provides insights on some of these individual factors: low-valued homes appear no less likely to appreciate than higher valued homes do; in the past, low-income homeowners were more likely to benefit from buying near cyclical troughs in house prices, but not so today; low-income first-time buyers have longer average durations before a subsequent move; low-income homeowners are less likely to itemize deductions; and low-income owners refinance less often when the option to refinance would be financially advantageous. These other studies do not examine the combined effect of these choices and the propensity of owners to make certain choices about actual wealth accumulation.

A smaller vein of research uses longitudinal surveys to examine actual longrun wealth accumulation of homeowners as a more direct way to examine whether the average owner has benefited from wealth accumulation above and beyond that of similarly situated renters. By following households over a long period and observing changes in wealth, these studies implicitly account for the combined effect of housing price changes, the timing of purchase and sale, the ability to take advantage of tax benefits, and the effect of choices regarding refinance, maintenance, and improvement.

Perhaps the most carefully constructed study of this ilk uses the Panel Study of Income Dynamics to examine wealth accumulation from 1989 to 2001 (Di, Belsky, and Liu, 2007). The study models the 2001 household wealth as a function of initial wealth in 1989 and other variables, including the duration of homeownership. Although the study does not separately examine low-income homeowners, it has the advantage of controlling for the possibility that households with a higher propensity to save and invest also have a higher propensity to own homes, own them for longer periods, and accumulate more wealth over time. To control for this possible self-selection bias, the study's authors fit a model of the propensity of renters to save from 1984 to 1989 and used the

fitted value in their second-step regression. After controlling for the propensity to save and invest, for initial net wealth in 1989, and for income, education, and other family and personal characteristics, Di, Belsky, and Liu find that duration of homeownership is strongly and positively associated with wealth accumulation over long periods. Race is found to have a negative independent effect on wealth accumulation, but its effect is significant in only one of two tested models. The authors also model nonhousing wealth. Here, too, they find that duration of homeownership had a positive influence on nonhousing wealth accumulation (possibly through lower home equity borrowing costs and more fixed housing payments).<sup>24</sup> Overall, the results of this study are especially compelling evidence of a positive effect of ownership duration on wealth accumulation because they span a period when rents were growing more slowly, stocks were growing far faster, and house prices were near their longrun average. Timing appeared to play an important role, because those homeowners who had bought near a cyclical peak in real house prices in the early 1990s mostly held their homes long enough to benefit from later appreciation following a cyclical trough.

In an earlier study without controls for possible self-selection bias, Di et al. (2004) examine the wealth accumulation of low-income homebuyers relative to other homebuyers over the 1984-to-2001 period. As with the later study, the basic approach used in this article is to estimate a regression model that predicts the level of wealth in 2001 as a function of demographic characteristics, starting wealth in 1984, and measures of the length of time spent as an owner over the period since 1984.<sup>25</sup> When the authors estimate a separate model predicting 2001 wealth for those with average incomes over the study period in the lowest quintile of the sample, they reject the hypothesis that the same factors predict wealth levels for both low- and higher income households. This result indicates that the process for accumulating wealth through homeownership for low-income owners is distinct from that experienced by higher income owners. In fact, the results suggest that homeownership is arguably more important in predicting wealth accumulation for low-income households. Nevertheless, it is also true that low-income households accumulate much less wealth than higher income households with or without homeownership. Because this study did not incorporate suitable controls for self-selection biases, the magnitudes of the estimates are likely unreliable. Unless self-selection bias is greater for low-income than higher income households, however, it is likely that the finding of a larger effect of ownership on wealth accumulation for lower than higher income households is robust. When combined with the finding from the Di, Belsky, and Liu (2007) study that longer durations of ownership were associated with greater wealth accumulation on average, all else being equal, these two studies suggest that ownership has had a positive influence on wealth building.

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<sup>24</sup> This result conflicts with the findings of Krumm and Kelly (1989), who explored the effect of homeownership on total savings levels. They used data from the 1976 Survey of Consumer Credit and a variety of approaches to control for endogeneity of the levels of nonhousing wealth and the decision to own to examine the relationship between household characteristics and both nonhousing wealth and total wealth. They found that the level of nonhousing savings for owners was either no different or slightly lower than the level for renters. This finding suggests that owning either has little effect on nonhousing savings or actually reduces it, but, importantly, the authors found that total wealth levels were always higher for owners compared with renters because the accumulated wealth in home equity made up for lower nonhousing savings. Thus, Krumm and Kelly's findings also support the view that even after controls for simultaneity in the propensity to accumulate wealth and own homes, owners accumulate more wealth.

<sup>25</sup> For all owners, a variable measuring the number of home sales during the period was not significant, so the results do not provide any indication that more moves lowers wealth, as might be expected given the high transaction costs of moving.

Boehm and Schlottmann (1999, 2004c) conducted the only other studies to examine influences of homeownership on wealth accumulation, but neither study controls for self-selection bias. In their 1999 study, the authors examine the wealth accumulation of the children of homeowners in the Panel Study of Income Dynamics and find, after appropriate controls, that adult children of homeowners have higher incomes, own homes sooner, and accumulate more wealth than the children of renters do. In their 2004 study, they first estimate the probability that a specific household will own a home from 1984 to 1992 in the PSID, using a hazard model, and then, if they do own, simulate how much the home will be worth using census tract data from 1990 and 2000. By mapping out the probability of different tenure paths over the 9-year period, the combined models yield an estimate of the overall appreciation each individual would be likely to experience over the time span studied. Although the authors do not net out transactions costs, the study does incorporate information on the timing and neighborhood choices of homebuyers by income and race. Their results indicate that the financial returns to homeownership are, in fact, greater for higher income groups and Whites, but that low-income and minority owners are still likely to experience significant positive financial gains from homeownership. As the authors note, although the gains realized by low-income and minority owners are smaller than the gains for other owners, the gains are still positive and nontrivial. They conclude that not only is homeownership an important means of wealth accumulation for low-income families but, for most of these households, it is the only form of wealth accumulation.

Reid (2004), also using the PSID, takes a simpler approach to testing for the influence of ownership on wealth accumulation. She uses the panel nature of the data to follow households that began as renters in 1976 and to follow their tenure choices at each survey period through 1994. She finds that, although both low-income Whites and minorities who were always renters had essentially no wealth in 1994, those who had become owners had roughly \$25,000 to \$30,000 in wealth on average, with most of this wealth being in the form of home equity. She also found wealth levels among low-income owners to be much less than those of higher income owners. Although it uses a different time period, Reid's study is consistent with Di et al. (2004) in finding that low-income owners do not accumulate nearly as much wealth as higher income owners do, but they nonetheless accumulate more wealth than renters do. The lack of controls in Reid's study, however, even for observed differences between low-income households that opted and did not opt to become owners at a later date, makes the study less persuasive.

Another topic considered in the literature is the optimal share of household wealth to hold in housing. Ambrose and Goetzmann (1998) find in Atlanta from 1970 to 1986 that low-income homeownership was optimal only if it did not exceed 34 percent of the low-income household's portfolio. Using the PSID, Hurst, Luoh, and Stafford (1998) also find that the level of housing wealth relative to stocks in 1989 was negatively associated with overall wealth in 1994 because, beyond a critical value, it created an undesirable portfolio balance. Di et al. (2004) test the effect of holding stocks on changes in wealth between 1984 and 2001, using a dummy variable indicating whether the household held a greater share of its 1984 wealth in stocks than in housing equity. In a manner similar to Hurst, Luoh, and Stafford (1998), Di et al. (2004) find that holding more wealth in stocks resulted in higher wealth levels. They also find, however, that it is still the case that being a homeowner is associated with greater increases in wealth than if the household just held stocks.

Overall, historical evidence indicates that on average the effect of homeownership on household wealth levels has been positive—and very possibly may be even more positive for low-income homeowners compared with higher income owners. Although high-income owners accumulate even more wealth than low-income owners do, this trend is due to other observable characteristics, such as high-income owners' higher average income, education, and wealth.

Whether these findings will hold in the future, however, remains uncertain in light of the high shares of low-income households that bought near the peak of the 1993-to-2005 housing boom and the large proportion of them with riskier loans and worse credit records than any past cohort of low-income borrowers. It is even more uncertain for minority low-income homeowners, given their higher propensity to have high-cost loans with initial 2-year teaser rates originated near the cyclical peak.

## Social Effects of Homeownership

Although the association between homeownership and wealth creation is an important part of the appeal of homeownership as a policy goal, policymakers are also quick to cite a variety of nonfinancial benefits as justification for efforts to increase homeownership, including greater satisfaction among owners with their homes and neighborhoods. Other nonfinancial benefits—generally referred to as social benefits—go beyond merely being more satisfied with one's home. These benefits include positive effects on children growing up in owner-occupied homes, increased involvement in community affairs by owners with potentially positive effects on surrounding communities, and improved psychological and physical health among owners. This section reviews the literature that has examined homeownership's effects in each of these spheres.

Before turning to these specific topics, several broad issues about this literature should be noted. One significant challenge plagues research on the social effects of homeownership—people who choose to become owners are, on average, likely to be different from renters in important ways that may not be apparent from available data. This difference occurs largely because households with certain propensities self-select into homeownership. For example, given the high transaction costs associated with buying and selling a home, households expecting to stay longer in one home are more apt to elect to own. This reduced residential mobility, rather than homeownership itself and the behaviors homeownership may evoke, may be in large part responsible for the effects associated with homeownership, such as positive effects on children and greater social involvement. People also may be more drawn to homeownership because they prefer to live a more home-centered life and so are motivated to invest in a larger, higher quality home. The increased quality of the house and the focus on spending more time at home as a family—which could also be achieved as a renter—may also contribute to some of the effects associated with homeownership. Finally, to the extent that homeowners tend to cluster in neighborhoods—and they do in many cases—spillover benefits may occur from living in areas in which residential mobility is lower and in which household incomes are higher. But, again, to the extent that reduced residential mobility and greater income mixing yield positive social effects, it may be possible to produce these conditions by means other than promoting homeownership (as discussed by Apgar, 2004).

Another shortcoming of the existing literature is that many studies do not include measures of the confounding factors that may help produce the outcomes associated with homeownership, most notably residential stability and good housing quality. Studies that do include measures of these factors provide a better test of homeownership's independent effect on social outcomes and of the mechanism by which homeownership may produce the outcomes of interest. Although some of these factors might be captured by observable characteristics of the household, home, or neighborhood, many of these factors may not be easy to capture with survey data. Absent the ability to employ an experimental study design to assess the effects of homeownership, researchers employ statistical techniques to try to account for this selection bias. The most common approach is to first estimate the likelihood of homeownership for a household, using observable factors, at least some of which would not be expected to influence the social outcome of interest. This estimate of whether a household is likely to become a homeowner is then used to test the influence of homeownership on the outcome of interest. Although not a perfect solution for the problem of selection bias, such estimation techniques provide at least a partial test of whether homeownership's effects are likely due to selection bias.<sup>26</sup> In the review that follows, studies that include such tests are regarded as providing greater evidence of homeownership's likely effects. In addition, much of the literature on the social effects of homeownership is aimed at assessing whether an association in general exists between homeownership and the outcomes of interest, and so it sheds little light on whether differences exist by income or race.<sup>27</sup> Nonetheless, a few studies with a particular focus on assessing outcomes among low-income homeowners have been conducted. We give these studies particular attention in our review. Virtually no studies have assessed differences in social outcomes by the owner's race/ethnicity, and so that issue is not addressed in this review.

## Effects on Children

Homeownership is purported to have a variety of positive effects on children, including higher educational attainment, greater success in labor markets, fewer behavioral problems, and higher rates of homeownership as adults. Synthesizing the various theories presented in the literature, Harkness and Newman (2002) identify four pathways by which homeownership may produce these positive effects on children.

To begin with, evidence shows that homeownership may be associated with a more stimulating and emotionally supportive home environment. In support of this view, Haurin, Parcel, and Haurin (2002) find a statistically significant positive association between homeownership and indicators of a more nurturing home environment, even after controlling for a variety of household characteristics and employing statistical controls for selection bias in who becomes an owner. What is not clear is exactly why homeownership would lead to a more supportive home environment. One hypothesis is that owners have greater life satisfaction and self-esteem, which helps foster this environment. Another argument is that owners are more likely to make investments in their home to tailor it to fit their tastes, which supports a more home-centered life.

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<sup>26</sup> For a thorough discussion of the issue of selection bias as it relates to the social benefits of homeownership and the statistical techniques available to address this problem, see Dietz and Haurin (2003).

<sup>27</sup> Two recent excellent reviews of this literature in general are Rohe, McCarthy, and Van Zandt (2002) and Dietz and Haurin (2003).

Another way in which homeownership may have a positive effect is by providing a better physical environment for children. Better physical conditions may improve children's physical health by reducing the risk of illness or injury due to such factors as improperly functioning heating and cooling systems, infestations of insects or rodents, or exposure to hazards such as lead paint. Improved physical health in turn may contribute to better performance in school and to greater ability to interact socially with others. Furthermore, to the extent that owner-occupied homes tend to be larger single-family units, children may also benefit from having greater physical space and privacy to do school work or pursue other interests.

A third way in which homeownership may help produce positive outcomes for children is by helping to promote residential stability by insulating the family from the need to move at a property owner's discretion. Owners may also be more reluctant to move because of the higher transaction costs associated with moving. Residential stability has been found to be associated with better educational outcomes (Hanushek, Kain, and Rivkin, 2004) and may help foster greater social connections that enhance a child's self-esteem and provide greater opportunities for social engagement.

Finally, it is also hypothesized that the greater wealth accumulation associated with homeownership may confer a variety of benefits both by providing a financial cushion that can be used in times of need to provide a more stable home environment and by making it feasible to invest in education.

### **Educational Outcomes**

A number of high-quality studies have investigated the effects of homeownership on the educational attainment of children. Despite differences in educational outcomes examined, data sets used, and methodological approaches employed, these studies universally conclude that the children of homeowners have better educational outcomes than the children of renters, even after controlling for a wide variety of other household characteristics and employing statistical methods to account for selection bias in who becomes an owner.

Among the first studies to address this question was Green and White (1997). Using data from the PSID, they estimate the probability that 17-year-olds were either still in school or had graduated from high school. The explanatory variable of interest is whether the child's parents were homeowners, but the authors also control for race, household income, parental education, and other household characteristics. They attempt to control for selection bias in who becomes a homeowner by estimating a bivariate probit model of the joint outcomes of housing tenure and educational outcomes for children. Green and White find that the 17-year-old children of owners are, in fact, more likely to be in school than the children of renters are. Importantly, they also find that the effects of homeownership on the probability of being in school are larger for low-income families. Children in homeowner households with incomes of less than \$10,000 are found to be 19 percentage points more likely to be in school than are the children of renters, but among owner households with incomes above \$40,000, the difference between owners and renters is only 12 percentage points.

Green and White also test their results by examining another data source, the 1990 Decennial Census, and produce results that are similar to those found using the PSID. To test whether the homeownership effect found using the PSID could be attributed to homeowners' living in higher quality housing or having longer duration of residence in a given location, Green and White, in their analysis, used census data that also incorporates measures of housing quality (as captured

by house value or rent) and length of time residing in the house. Even after incorporating these additional control variables, the results indicate that homeownership has a statistically significant independent effect on increasing the likelihood of being in school at age 17.

In his analysis of data from the PSID, Aaronson (2000) attempts to extend the work of Green and White by employing a much broader set of control variables and using a different methodology to control for potential selection bias in who becomes a homeowner. Aaronson begins by estimating a model that includes a set of explanatory variables similar to those that Green and White used. The results indicate that children of homeowners have a likelihood of graduating from high school that is 10 percentage points higher than that of the children of renters. Then, to examine whether this effect is the result of greater household stability, Aaronson incorporates measures of change over time in employment, marital status, and household composition. He finds that adding these controls does not affect the estimated homeownership effect; however, when Aaronson adds measures of residential mobility, he finds that the estimated effect of homeownership on high school graduation rates is halved, from 10 percentage points to 5. Aaronson concludes that a good deal of the effect of homeownership is, in fact, attributable to greater residential stability that is correlated with owning. Finally, Aaronson adds further controls to account for differences in household wealth, including the amount of housing equity. Including housing wealth in the estimated model is found to further reduce the estimated effect of homeownership on high school graduation by about one-half, with greater levels of housing equity associated with a greater likelihood of graduation.

In two related studies, Harkness and Newman (2002, 2003) make several important contributions to the existing literature. First, they focus their analysis specifically on low-income households (defined as those with incomes less than 150 percent of the federal poverty definition) to examine whether low-income households are as likely as higher income groups to realize the benefits of homeownership. Second, they introduce controls for neighborhood characteristics to examine the extent to which the realization of benefits of homeownership may vary depending on the socioeconomic status of the neighborhood. Their analysis of the PSID finds that, by age 20, the children of homeowners have completed, on average, one-half year more of schooling, are 13 percentage points more likely to have graduated from high school, and are 6 percentage points more likely to have obtained some postsecondary education.

Harkness and Newman (2003) also compare the magnitude of homeownership's effects between low-income and higher income households. They find that homeownership's positive effects are consistently larger in low-income families. Aaronson's results also support this conclusion. Although Aaronson does not sort his sample into low- and high-income households, he does estimate separate models for low- and high-income neighborhoods. He finds that the benefits of homeownership are statistically significant in low-income areas but not in high-income areas. Because low-income owners are more likely to live in low-income areas, this result is consistent with the findings of Harkness and Newman.

Harkness and Newman (2003) also test the sensitivity of their results to the use of four different instrumental variables to control for selection bias in who chooses to own a home. They find that for three of the four instruments, the homeownership effect is still statistically significant regarding educational outcomes for low-income children. This result leads them to conclude that the findings are robust even when using a variety of controls for selection bias; however, they find



that for higher income families, the use of these instruments results in a loss of significance for the homeownership variable. Thus, for higher income households, less evidence exists of an effect of homeownership after controls are implemented for the selection bias in who becomes an owner.

Although the basic model presented in Harkness and Newman (2002) does not include controls for residential mobility or housing equity, the authors do test for the effect of including these variables on the estimated homeownership effect. Consistent with Aaronson's results, the inclusion of measures of residential mobility diminishes the homeownership effect, but it still remains positive and statistically significant. Housing equity, on the other hand, is not statistically significant. Boehm and Schlottmann (1999) also use the PSID to estimate the effect of homeownership on children's educational attainment. They find that housing equity is not statistically significant in predicting graduation from high school, but it is significant in predicting graduation from college. This result is consistent with the hypothesis that the wealth generated through homeownership may make it financially feasible for the children of homeowners to attend college.

Harkness and Newman's other principal contribution is to incorporate measures of neighborhood socioeconomic status, as captured by the share of residents in their homes for 5 years or more, the poverty rate, and the homeownership rate. Their results indicate that the effect of neighborhood characteristics on educational outcomes is weak, with only neighborhood stability being marginally statistically significant. When they interact an individual's tenure status with the characteristics of their neighborhood, however, they find that neighborhood characteristics have a greater effect on owners than they do on renters. In particular, greater neighborhood stability is found to have more of an effect on owners' children. This observation is consistent with findings by Aaronson that the positive effects of homeownership on high school graduation rates are larger in neighborhoods with low mobility.

On its face, Harkness and Newman's finding that the children of low-income owners are more sensitive to neighborhood stability would suggest that homeownership in unstable communities would have more deleterious effects on owners than on renters.<sup>28</sup> They find, however, that when the positive effects of homeownership itself are considered, the children of owners living in unstable neighborhoods are still found to have higher educational outcomes than the children of renters in these areas. In short, the authors conclude that homeownership is beneficial to low-income families, even if they live in neighborhoods with low socioeconomic status.

Haurin, Parcel, and Haurin (2002) take a somewhat different approach to evaluating the effect of homeownership on educational outcomes. Rather than examine the level of educational attainment, they use data from the National Longitudinal Survey of Youth to examine the association between homeownership and results on math and reading achievement tests. They find that homeownership has a positive and significant effect on test results for the children of owners—on average, raising math scores by 9 percent and reading scores by 7 percent. The positive influence of homeownership remains even when controls are incorporated to account for sample selection bias. Thus, in addition to providing evidence that owners' children are more likely to stay in school longer, Haurin, Parcel, and Haurin provide evidence that the academic achievement of these children is also higher.

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<sup>28</sup> Statistically significant, positive effects of residential stability on educational outcomes imply that a lack of stability will have negative effects on these outcomes.

### **Employment, Earnings, and Welfare Use**

Two studies have assessed the effect of homeownership on the labor market outcomes realized by the children of homeowners, including the wage rates they achieve as young adults, the likelihood that they will be idle at age 20 (that is, neither employed or in school), and the likelihood that they will receive welfare as young adults. The results suggest that homeownership is associated with at least moderately positive outcomes for children in labor markets. Harkness and Newman (2002) find that homeowners' children have average wage rates that are \$0.70 per hour higher between the ages of 24 and 28, are 7 percentage points less likely to be idle at age 20, and are 9 percentage points less likely to receive welfare between the ages of 24 and 28. When controls for neighborhood characteristics are introduced, however, the effects on wage rates and idleness are no longer statistically significant, although owners' children are still less likely to receive welfare. When they employ instrumental variables to control for selection bias in who becomes an owner (Harkness and Newman, 2003), the authors do not find a statistically significant effect on idleness, but a significant and positive association exists between homeownership and both wages and reduced welfare use.

In their analysis of the PSID, Boehm and Schlottmann (1999) examine the association between homeownership and children's average wages 10 years after leaving their parents' home. Although their results do not find a statistically significant direct effect of homeownership on children's earnings, they note that homeownership does have an indirect effect on wage rates through its statistically significant association with increased educational attainment. Using the results of their models, they find that the increase in educational attainment that is associated with growing up in an owner-occupied home produces an increase in average annual earnings of \$7,500.

### **Teenage Pregnancy and Behavioral Problems**

Several studies have investigated the association between homeownership and the incidence of teenage pregnancy or behavioral problems. Green and White (1997) use the High School and Beyond survey to evaluate whether the daughters of homeowners are less likely to have had a child by age 18. Although they do find a positive effect of homeownership, the magnitude is fairly small, reducing the likelihood of having a child by only 2 percentage points. Using the PSID, Harkness and Newman find that the children of homeowners have about a 3-percentage-point lower chance of having a child by age 20, but this difference is not statistically significant in any of the specifications tested.

Haurin, Parcel, and Haurin (2002) evaluate the association between growing up in an owner-occupied home and an index of behavioral problems as measured by mothers' responses to 28 questions in the NLSY about the prevalence of behaviors such as acting out, having a strong temper, demanding attention, and being depressed or anxious. Their results indicate that homeownership is associated with a 3-percent reduction in the incidence of problematic behaviors, but the effect is not statistically significant.

Taken together, these papers suggest that homeownership may have some positive effect on children's behaviors, but, if so, the magnitude of this effect is fairly small.

## **Homeownership**

One last outcome examined in the literature is whether the children of homeowners are more likely themselves to become owners. Boehm and Schlottmann (1999) use the PSID to examine the homeownership rates of children 10 years after leaving their parents' home. They find that, even after controlling for the usual predictors of homeownership, such as income and marital status, the children of owners have homeownership rates that are 25 percentage points higher than the rates of children of renters. This much greater tendency to own may reflect some combination of a greater preference for homeownership among those who have experienced it, greater comfort and familiarity with what is entailed in being a homeowner, or greater parental wealth that can be tapped to help achieve homeownership. Although Boehm and Schlottmann do not attempt to control for the selection bias in who chooses to become an owner, the rather substantial increase in the propensity to own a home among those who grew up in owner-occupied housing would seem likely to remain even if such controls were employed.

## **Effects on Social Involvement**

One frequently touted benefit of homeownership is the tendency of owners to be more engaged in efforts to improve the community. Thus, increases in homeownership are thought to create more stable and healthier neighborhoods. A number of arguments are put forward in the literature to explain why homeowners are thought to be more likely to be engaged in efforts to improve their communities (Baum and Kingston, 1984; Cox, 1982; Dietz and Haurin, 2003; DiPasquale and Glaeser, 1999; Rohe, McCarthy, and Van Zandt, 2002; Rohe and Stegman, 1994a). Because neighborhood conditions have an effect on housing values, owners have a strong financial incentive to work to improve their communities. In addition to having a financial stake, owners are also likely to have an emotional stake in their homes and a pride of ownership that will motivate them to improve the surrounding community. Owners also face higher moving costs than renters do, so they may be more motivated to work to solve neighborhood problems because it is more difficult for them to move out. Finally, owners' longer duration of residence in a neighborhood may also increase the strength and number of relationships they have in the community, which increases both their willingness and ability to engage in efforts to improve the neighborhood.

The existing literature has examined several dimensions of social involvement. One aspect is the likelihood that a household will be engaged in political affairs as evidenced by how frequently they vote or whether they know the names of elected officials. Another measure of social involvement is the degree to which individuals participate in local organizations and institutions. A final dimension is the extent to which households are familiar and interact with neighbors.

Much of the existing literature, however, suffers from either a failure to account for selection bias or lack of an attempt to evaluate whether homeownership's effects differ with either the income or race of the owner. Also, studies on this topic are much less likely to include controls for residential duration to separate the effects of homeownership from the effects of residential stability. The most important study on this topic is DiPasquale and Glaeser (1999) because the authors not only introduce controls for selection bias in who becomes an owner, but they also investigate whether differences occur in homeownership's effects between low- and high-income owners and assess the influence of residential duration on estimated homeownership effect. Also of some importance

is a series of studies by Rohe and various colleagues (Rohe and Basolo, 1997; Rohe and Stegman, 1994a) based on surveys of participants in a low-income homeownership program in Baltimore and a pseudo-control group of low-income renters from the same geographic area. These studies are important because they focus explicitly on low-income households and because they examine changes in household behavior following a move to homeownership.

On the whole, the findings from these studies indicate that, at best, low-income owners have only a slight tendency to be more socially involved. Regarding voting and other indicators of engagement in the political process, although homeowners in general are more likely than renters to be engaged in political activities, this trend does not appear to be the case for low-income owners. DiPasquale and Glaeser find that low-income owners are more likely than renters to work to solve local problems, but, in general, the association between homeownership and such efforts is fairly weak because it is not statistically significant when controls for selection bias are employed. The studies by Rohe and his colleagues provide some indication that low-income owners are more likely to be involved with neighborhood associations, but because this study concerns participants in a low-income homeownership program that provided newly constructed homes in Baltimore, it is not clear if this study can be generalized to low-income homeowners. Finally, the scarce few studies that investigate differences in interactions with neighbors by tenure provide little evidence that low-income owners, in particular, are more involved with neighbors than their renter counterparts are.

### **Effects on Psychological and Physical Health**

Another purported benefit of homeownership is a positive effect on both the psychological and physical health of owners. Psychologically, homeownership is thought to increase self-esteem, the perception of control over one's life (or self-efficacy), and overall life satisfaction. Among a variety of mechanisms by which homeownership is believed to contribute to these outcomes is higher self-esteem, which can result from the greater social status associated with homeownership and from the achievement of what is often an important personal goal of purchasing a home. In addition, owners are thought to have greater perceived control over their lives because they have greater control over their living situation. Finally, the wealth created through homeownership can contribute to a greater sense of financial security and help provide more of life's comforts. On the other hand, the greater responsibilities of maintaining a home and meeting its financial obligations may produce higher levels of stress for some households. In particular, households facing a potential foreclosure may experience a significant degree of emotional strain, leading to a loss of self-esteem, a feeling of having no control over one's life, and reduced life satisfaction.

Greater physical health may be attributable to greater psychological health based on the premise that lower stress and a better outlook on life will have positive repercussions for physical health. In addition, improved physical health could result from better quality of living conditions associated with enhanced home maintenance by owner occupants. Finally, increases in wealth associated with homeownership may also improve physical health by supporting better access to health care.

In general, the literature assessing the effects of homeownership on the psychological and physical health of homeowners is too thin to draw any firm conclusions, particularly regarding whether these effects may differ with household income. The studies by Rohe and Stegman (1994b) and

Rohe and Basolo (1997) represent the most compelling work on the issue of psychological effects. The authors' results suggest that homeownership may have a positive effect on overall life satisfaction of low-income owners, but they find little support for the hypothesis that homeownership increases self-esteem or perceived control over life. They do find, however, that improved housing conditions are associated with increased self-esteem and perceived control over life, which is consistent with the idea that homeownership indirectly influences these outcomes by helping to improve housing quality. However, if improving the quality of the home and neighborhood is the mechanism by which homeownership improves these outcomes, it may be possible to achieve the same results by means other than promoting homeownership. Efforts to improve the quality of rental housing, for example, might have the same result. Regarding physical health, some evidence indicates that owners do enjoy better health, but because most studies do not employ adequate controls for other aspects of a households' socioeconomic status or for housing quality, it is not possible to firmly conclude that this association exists. These studies in general do not shed light on whether these effects vary with homeowners' income. In short, the question of whether homeownership has an effect on physical health is very much an open question and one that requires further research.

## Summary and Conclusions

This article primarily relies on a review of the existing literature to assess whether over time low-income and minority homeowners are as likely as other owners to realize the financial and social benefits of owning a home. Our general conclusion is that, for the most part, these owners are as likely as others to benefit from homeownership. Regarding homeownership's financial benefits, these owners are just as likely to see their homes appreciate in value as other owners are. Because housing is a leveraged investment, even modest appreciation in value, combined with paying down mortgage debt over time, results in fairly significant wealth accumulation. In fact, for most low-income households, housing wealth is their only source of wealth. In terms of social benefits, modest evidence shows that owners do benefit from improved psychological and physical health, although the research is not strong and little attention has been paid to whether differences occur in these outcomes for different income or racial/ethnic groups. Moreover, fairly convincing evidence shows that the children of low-income owners have greater educational success, and more modest evidence indicates that they have greater success in labor markets, are less likely to have behavioral problems, and are more likely to become homeowners themselves.

Nonetheless, even before the current foreclosure crisis, evidence indicated that low-income and minority individuals and families face a greater risk of being unable to sustain homeownership. Because the benefits of homeownership mostly accrue slowly over time, a failure to maintain homeownership will greatly reduce the chance of realizing these benefits. Although it can be argued that the risk of foreclosure remains fairly low for most owners, recent research on the rate at which households exit homeownership finds that for every household that faces foreclosure, several more voluntarily leave their homes. Several recent studies, using longitudinal panel surveys to trace the tenure choices of households over fairly lengthy periods of time, found that between 43 and 53 percent of low-income buyers will not sustain homeownership for more than 5 years compared with between 23 and 30 percent of high-income buyers. These studies also found that minorities at

all income levels are between 22 and 39 percent more likely to leave homeownership than Whites are. In the current market, the homeownership failure rate is likely to be even higher. These statistics reveal that the notion that “once an owner, always an owner” is not at all true—especially for low-income and minority families. Although sustained homeownership may yield substantial benefits, failed attempts at owning also precipitate significant costs. Cases ending in foreclosure undoubtedly impose significant financial and personal costs on these families. Much less is known about other early exits from homeownership, but these situations may also impose nontrivial financial and personal costs to the extent that owners are compelled to leave homeownership.

The research conducted on exits from homeownership draw on data that extend back before the sharp rise in homeownership rates in the 1990s. Thus, it is not the case that these relatively quick exits from homeownership are a new development. There is reason to believe, however, that the homeownership gains of the 1990s may have increased the number of owners at risk of being unable to sustain homeownership. Perhaps most importantly, the development of more flexible mortgage products has made it possible to buy a home with higher levels of debt, lower levels of savings, and worse credit histories than was previously possible—all of which have undoubtedly contributed to the high foreclosure rates the United States is now experiencing. The homeownership boom of the 1990s also brought into homeownership many more single adults, who may have less ability to carry their mortgage obligations in the wake of a financial crisis than do households headed by two adults.

Nonetheless, given the benefits that result from sustained homeownership, there is no reason to retreat from the goal of increasing homeownership opportunities for low-income and minority households. A clear need exists, however, for policies to increase the likelihood that homeownership will be sustained and its full benefits realized. A concerted policy effort to improve homeownership experiences will have three broad thrusts: (1) efforts to improve the initial homebuying choices made by these families and individuals—including whether owning is the right choice, (2) efforts to ensure that homeowners optimize their mortgage choices after purchase and make appropriate investments to maintain and improve their homes, (3) and efforts to help owners resolve crises that threaten their ability to sustain homeownership. For the most part, a variety of existing efforts support homeowners in each of these areas. As a result, the recommendations may be thought of more as an indication of where greater emphasis is needed rather than where a lack of effort currently exists. Among the specific approaches that need to be emphasized are prepurchase counseling to ensure that prospective homebuyers make informed choices about buying a home, postpurchase counseling to provide support for families after they are in their homes, affordable refinance programs to help owners minimize the costs of homeownership, and loss mitigation programs to provide options for owners in financial crisis to help them keep their homes.

This review of the existing literature has also revealed a number of areas in which not enough work has been done to fully understand the circumstances homeowners face, the nature of their decisions, or the outcomes realized. Further research is needed to provide a better understanding of the extent to which low-income and minority families and individuals benefit from homeownership and of the challenges they face in sustaining homeownership over time. Perhaps one of the most important issues identified in this review is that roughly one-half of first-time, low-income homebuyers are not able to sustain homeownership for at least 5 years and that minorities

fare slightly worse still. Relatively little is known about the experiences of these households as homeowners—what challenges they face and what resources they have to respond to these situations. Perhaps the most important area for further research is to gather better information about the experiences of low-income homeowners. Policymakers need this information to be able to identify the type of support necessary to ensure that low-income and minority households are able to sustain homeownership over time to be able to realize the many financial and social benefits of homeownership.

## **Acknowledgments**

The authors gratefully acknowledge financial support from the U.S. Department of Housing and Urban Development (HUD), Office of Policy Development and Research. The authors also thank Harold L. Bunce and William J. Reeder of HUD for their careful and thoughtful review of earlier drafts of the report from which the authors developed this article.

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