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**Is Homeownership Still an Effective Means of Building Wealth for Low-income
and Minority Households? (Was it Ever?)**

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Introduction

In many respects, the notion that owning a home is an effective means of accumulating wealth among low-income and minority households has been the keystone underlying efforts to support homeownership in recent decades. The renewed emphasis on boosting homeownership rates as a policy goal that arose in the early 1990s can be traced in no small part to the seminal work by Oliver and Shapiro (1990) and Sherraden (1991) highlighting the importance of assets as a fundamental determinant of the long-run well-being of families and individuals. The efforts of these scholars led to a heightened awareness of the importance of assets in determining life's opportunities, enabling investments in education and businesses, providing economic security in times of lost jobs or poor health, and passing on advantages to children. Assessments of differences in asset ownership placed particularly emphasis on the tremendous gaps in homeownership rates by race/ethnicity and income and the importance of these gaps in explaining differences in wealth. In announcing their own initiatives to close these homeownership gaps, both President Clinton and President Bush gave prominent attention to the foundational role that homeownership plays in providing financial security (Herbert and Belsky, 2006).

But while faith in homeownership's financial benefits are widely subscribed to, there have long been challenges to the view that owning a home is necessarily an effective means of producing wealth for lower-income and minority households. In 2001 the Joint Center for Housing Studies hosted a symposium with the goal of "examining the unexamined goal" of boosting low-income homeownership (Retsinas and Belsky, 2002a). The general conclusion that emerged from this collection of papers was that lower-income households do benefit from owning homes, although this conclusion was subject to a variety of "caveats and codicils" (Retsinas and Belsky, 2002b, page 11). A few of these caveats related to whether financial benefits were likely to materialize, with papers finding that all too commonly homebuyers sold their homes for real losses while alternative investments offered higher returns (Belsky and Duda, 2002; Goetzmann and Speigel, 2002). In perhaps the most comprehensive critique of the policy emphasis of fostering low-income homeownership, Shlay (2006) reviewed existing scholarly evidence to cast doubt on the likelihood that either the financial or social benefits of owning would be realized.

These criticisms have only grown louder in the aftermath of the housing bust, as trillions of dollars in wealth evaporated leaving more than 10 million homeowners owing more than their homes are worth and leading to more than 4 million owners losing their homes to foreclosure (Joint Center for Housing Studies, 2012; Kiviat, 2010; Li and Yang, 2010; Davis, 2012). Many of the criticisms raised about

the financial risks of homeownership are not new, but the experience of the last five years has certainly given new impetus to these arguments. But there are also concerns that changes in the mortgage market and in consumer behavior may have exacerbated these risks, increasing the odds that owners will, at best, be less likely to realize any financial gains from owning and, at worse, face a heightened risk of foreclosure.

The goal of this paper is to reassess in the light of recent experience whether homeownership is likely to be an effective means of wealth creation for low-income and minority households. Has the experience of the last decade proven the arguments of earlier critics of homeownership? Have changes in the market affected whether these benefits are likely to be realized? The paper takes three approaches to address these questions. We begin by presenting a conceptualization of the risks and rewards of homeownership as a financial choice, with a particular eye toward whether the odds of a beneficial outcome are lower for lower-income and minority owners. This review also assesses whether recent experience has altered this calculus—as opposed to just raising our awareness of the proper weighting of the likelihood of realizing the benefits while sidestepping the risks. Next, we review the existing literature examining the financial benefits of owning a home, including both studies simulating the returns to owning and renting as well as studies using panel surveys to track actual wealth accumulation among owners and renters. Finally, we examine data from the Survey of Consumer Finance (SCF) and the Panel Study of Income Dynamics (PSID) covering the last decade to assess how owning a home has been associated with changes in household financial balance sheets over this period.

To preview our conclusions, we find that while there is no doubt that homeownership entails real financial risks, there continues to be strong support for the association between owning a home and accumulating wealth. This relationship held even during the tumultuous period from 1999 to 2009, under less than ideal conditions. Importantly, while homeownership is associated with somewhat lower gains in wealth among minorities and lower-income households, these gains are on average still positive and substantial. In contrast, renters generally do not see any gains in wealth. Those who buy homes but do not sustain this ownership also do not experience any gains in wealth, but are generally left no worse off in wealth terms than they were prior to buying a home—although of course there may still be substantial costs from these failed attempts at owning in terms of physical and mental health as well as future costs of credit.

We conclude that homeownership continues to represent an important opportunity for individuals and families of limited means to accumulate wealth. As such, policies to support homeownership can be justified as a means of alleviating wealth disparities by extending this

opportunity to those who are in a position to succeed as owners under the right conditions. The key, of course, is to identify the conditions where lower-income and minority households are most likely to succeed as owners and so realize this potential while avoiding the significant costs of failure.

Assessing the Financial Risks and Rewards of Homeownership

Before turning to evidence about the financial returns to homeownership, it is helpful to start by framing the arguments about why homeownership is thought to be an effective means of generating wealth as well as the counter arguments about why these benefits may not materialize, particularly for lower-income and minority homeowners. We then consider how changes in mortgage markets and consumer behavior may have altered the likelihood that owning will lead to financial gains. This framing helps provide a basis for interpreting the findings from the following two sections of the paper that examine evidence about the association between homeownership and wealth accumulation.

The Potential Financial Benefits of Owning

The belief that homeownership can be an important means of creating wealth has its roots in five factors. First, the widespread use of amortizing mortgages to finance the acquisition of the home results in forced savings as a portion of the financing cost each month goes toward principal reduction. While modest in the early years of repayment, the share of the payment going toward principal increases over time. For example, assuming a 30-year loan with a 5 percent interest rate, a homeowner will have paid off about 8 percent of the mortgage after 5 years, 19 percent after 10 years, and nearly a third after 15 years. Assuming a household purchases a home in their early 30s and keeps on a path to pay off the mortgage over a thirty-year period, these forced savings will represent a sizable nest egg when they reach retirement age. In addition, an often overlooked aspect of forced savings associated with homeownership is the accumulation of the downpayment itself, which often entails a committed effort to accumulate savings in a short period.

Second, homes are generally assumed to experience some degree of real appreciation over time, reflecting increased overall demand for housing due to growth in both population and incomes against a backdrop of a fixed supply of land located near centers of economic activity. Shiller (2005) has been the most notable critic of this point of view, arguing that over the very long-run real house prices have only barely exceeded inflation. Lawler (2012), however, has argued that Shiller's house price estimates and measures of inflation result in an underestimate of real house price growth. Analysis of trends in real house prices across a range of market areas support the conclusion that these trends

reflect a complex interaction of supply and demand factors in local markets that defy simple categorization (Capozza et al. 2002, Gallin, 2006). At a national level the Federal Housing Finance Agency house price index indicates that between 1975 and 2012 the compound annual growth rate in house prices has exceeded inflation by 0.8 percentage points. Even at a modest rate of increase, the compounding of these returns over a longer period of time can be produce substantial increase in real home values. Assuming just a 0.8 percent annual real increase in house values over 30 years an owner will experience a real gain of about 26 percent in the overall house value.

The use of financing can further leverage these returns. A homebuyer with a modest downpayment gets the benefit of increases in the overall asset value despite their small equity stake. While the cost of financing can create a situation of negative leverage if the increase in house values is lower than the cost of financing (so that the financing costs exceed the increase in the asset value), this risk diminishes over time as the value of the house compounds while the debt payment is fixed. Through leverage, the rate of return on an investment in a home can be substantial even when the increase in house values is modest. Consider the case where a buyer puts down 5 percent and the house appreciates at 4 percent annually. After 5 years the home will have increased in value by nearly 22 percent—or more than 4 times the initial 5 percent downpayment. Even allowing for selling costs of 6 percent, this would represent an annualized return of 31 percent on the owner’s initial investment. Due to leverage, even nominal increases in home values that do not exceed inflation can result in real returns. In the above example, if inflation matched the 4 percent growth in home prices, the owner would still have earned a substantial real return on their initial investment.

Federal income tax benefits from owning a home can also be substantial. The ability to deduct mortgage interest and property taxes is the most apparent of these benefits. Taxpayers who are able to make full use of these deductions receive a discount on these portions of ongoing housing costs at the taxpayer’s marginal tax rate, ranging from 15 percent for moderate income households up to 39 percent for the highest tax bracket. In addition, capital gains on the sale of a principal residence up to \$250,000 for single persons and \$500,000 for married couples are also excluded from capital gains taxation, which is currently 15 percent for most households and 20 percent for the highest income bracket.¹

¹ An additional tax benefit that is often overlooked is the fact that while owner occupants benefit from the use of their home as a residence they do not have to pay any tax on these benefits, referred to as the implicit rental income from the property (that is, the rent one would have to pay to occupy the home) (Ozanne, 2012). The loss of revenue to the U.S. Treasury from this exclusion is substantial, outweighing the costs of the mortgage interest deduction.

Finally, owning a home provides a hedge against inflation in rents over time. Sinai and Souleles (2005) find that homeownership rates and housing values are both higher in markets where rents are more volatile, indicating the value placed on being able to protect against rent fluctuations. Under most circumstances, mortgage payments also decline in real terms over time, reducing housing costs as a share of income. For long-term owners, this can result in fairly substantial savings in the out of pocket costs for required for housing. Assuming a fixed rate mortgage, inflation of 3 percent, 1 percent growth in both real house prices and the costs of property taxes, insurance and maintenance, real monthly housing costs would decline by about 10 percent after 5 years, 15 percent after 10 years, and 30 percent by the last year of the mortgage. Once the mortgage is paid off, the out of pocket costs of owning in real terms are less than half the payments made at the time of purchase. Housing costs for renters, in contrast, would be expected to keep pace with inflation in housing prices.

The Potential Financial Risks of Owning

Combined, the financial benefits outlined above can fuel significant wealth accumulation. But as the last few years have made painfully clear, the financial benefits associated with owning a home are not without risk. To begin with, house prices can be volatile. That was certainly the case in the wake of the housing bust, as nominal prices fell nationally by some 25 percent or more (depending upon the specific price index used), with the hardest hit markets experiencing declines of more than 40 percent. Almost no area of the country was spared from some degree of decline. According to the FHFA index, nominal prices fell in every state with the exception of North Dakota. But while recent experience is notable for the breadth and depth of price declines, there are other examples of fairly significant price declines over the last few decades, including declines of between 10 and 20 percent in some Oil Patch states in the 1980s and in New England, California and Hawaii in the early 1990s.

There are also a number of markets where house prices trends have historically been more stable, but in these areas long-run real price increases have either not kept pace with inflation or have been modest. House price growth has been particularly weak in a number of markets in the Midwest and South where population and income growth have been low. Based on long-run state level indexes from FHFA, between 1975 and 2012 there were 10 states in these regions where the compound annual growth in house prices did not exceed general price inflation. Even before the bust, homeowners in these markets did not have the benefit of real growth in house prices over the long term. In nine other states house price growth did beat inflation, but by less than 0.25 percent on an annual basis. Thus, in about two-fifths of states real house price growth was either non-existent or trivial. At the other

extreme there were 17 states, mostly along the Pacific coast and in the Northeast that experienced real house price growth of more than 1 percent, including 5 states that exceeded 2 percent.

There are also peculiar aspects of owning a home that further exacerbate the financial risks of these investments. Homeowners make a significant investment in a specific location and cannot diversify the risk of home price declines by spreading this investment across assets or across markets. Homes values are also high relative to incomes and so account for a large share of household wealth. Wolff (2012) reports that in 2010 the value of the principal residence accounted for two-thirds of total wealth among households in the middle three quintiles of the wealth distribution. With so much wealth tied up in one asset, homeowners are particularly vulnerable to changes in home values. The use of debt financing for a large share of the purchase further magnifies these risks, with even small drops in prices wiping out substantial shares of homeowner equity. Indeed, at the height of the housing bust the number of households underwater on their mortgages was estimated by CoreLogic to have exceeded 11 million while Zillow placed the number closer to 15 million.

When assessed purely on the basis of real growth in values over time, housing also compares poorly to the returns offered by investments in diversified portfolios of stock or bonds. Geotzmann and Spiegel (2002) compare the change in home prices in 12 market areas between 1980 and 1999 to a range of alternative investments and find that housing was consistently dominated as an investment asset by all of the financial alternatives considered, leading them to conclude that it is “surprising that housing continues to represent a significant portion of American household portfolios” (page 260). However, Flavin and Yamashita (2002) take a more expansive view of the returns on housing investments by including the value derived from occupying the unit, the use of financial leverage, and the ability to claim income tax deductions. This fuller treatment of housing’s returns finds that the average rate of return was slightly below returns for investments in stocks, but the variance of these returns were also lower and so somewhat less risky. Still, even if the returns to housing are deemed to be competitive with alternative investments the concern remains that it accounts for an excessive share of low-wealth household’s portfolios.

Housing investments are also handicapped by high transaction costs associated with buying and selling these assets. Home buyers face fees for mortgage origination, title search and insurance, state and local taxes, home inspections, and legal fees, all of which can add up to several percentage points of the home value. Real estate broker commissions typically also command 6 percent of the sales price. These high transaction costs can absorb a significant share of home price appreciation from the first few years of occupancy. Given these high costs, home owners who are forced by circumstances to move

within a few years of buying will face the risk of loss of at least some share of their initial investment even if home values have risen modestly.

The need to maintain the home also imposes financial risks on owners. While routine maintenance can keep both the physical structure and the home's major systems in good working order, major investments are periodically needed, such as painting the exterior or replacing the roof or heating system. These projects incur high costs that may be difficult for owners to afford. While owners may have the opportunity to plan for these investments over time, in some cases a system will fail with little warning and produce an unexpected cost that the owner cannot afford, creating a financial strain that in the most extreme cases can jeopardize the ability to maintain ownership.

Finally, the financial costs of failing to sustain homeownership are high—in addition to the traumatic impacts that foreclosures can have on the health and psychic well-being of the owner (Carr and Anacker, 2012). Owners who default on their mortgage will not only lose whatever equity stake they had in the home, they are also likely to deplete their savings in a bid to maintain ownership and suffer significant damage to their credit history making it difficult and costly to obtain credit for several years to come.

Factors Contributing to Wealth Accumulation Through Homeownership

Whether and to what extent a homebuyer will realize the potential benefits of owning while avoiding succumbing to the risks depends on a complex set of factors. Herbert and Belsky (2006) present a detailed conceptual model of the factors that contribute to whether homeownership produces wealth over the life course, which is briefly summarized here. The most obvious factor is the timing of purchase relative to housing price cycles. The recent boom and bust in house prices presents a prime example. Homebuyers who bought in the early 2000s were poised to benefit from the massive run-up in prices that occurred in many markets, while those that bought in the mid 2000s entered just in time for the historic freefall in prices that followed. While other price cycles in recent decades may not have been as dramatic, the consequences of buying near troughs or peaks on wealth accumulation would have been similar. Belsky and Duda (2002) examined data on repeat sales in four market areas between 1982 and 1999 and found that roughly half of owners who bought and sold their homes within this time period failed to realize gains that beat inflation after assuming a 6 percent sales cost (although most did earn a return in nominal terms). Whether owners realized a positive return depended strongly on where in the housing price cycle they bought and sold their homes.

Belsky and Duda (2002) conclude that “although the golden rule of real estate is often cited as location, location, location, an equally golden rule is timing, timing, timing” (Page 223). Their conclusion points to another critical factor in how likely a home is to appreciate in value – in what market and in which specific neighborhood the home is located. As noted above, there have been sizeable differences across market areas in long-term house price trends, with areas along the coasts experiencing real gains of one percent or more over the last several decades while areas in the Midwest and South have had little or no gains. But there are also substantial variations in price trends across neighborhoods within a single market (for reviews of this literature see Herbert and Belsky, 2006; Dietz and Haurin, 2003; and McCarthy, Van Zandt and Rohe, 2001). Whether a household bought a home in Boston or Cleveland is an important factor in the returns realized, but so is whether the home was in a desirable area or a declining neighborhood.

The terms of financing used to buy the home also matter. Higher interest rates lower the share of payments that are devoted to principal reduction in the early years of repayment, slowing wealth accumulation. The higher monthly costs of the mortgage also erode the ability of the household to meet other expenses and to save on an ongoing basis as additional interest payments over the life of the mortgage can be substantial. For example, over a thirty-year term a loan for \$150,000 at 7 percent interest will require \$69,000 more in interest payments than a 5 percent loan. Higher origination fees also sap savings, reducing the quality and size of home that is affordable and lowering the rate of return on housing investments.

Choices about refinancing over time can also exert a strong influence on wealth accumulation. Taking advantage of declines in mortgage interest rates to reduce financing costs can save owners hundreds of dollars each month, and tens of thousands over the life of a mortgage—although continually resetting the term of the mortgage will reduce opportunities for forced savings. On the other hand, refinancing to take cash out of the property can erode wealth accumulation, particularly if the extracted funds are used to finance consumption rather than investments in the home, education, business or financial opportunities. Wealth accumulation will be further undermined if the new loan comes with high fees and higher interest rates. Of course, the ability to tap housing wealth as a buffer against income shocks is one of the virtues of developing this cushion, but using home equity to finance an unaffordable lifestyle is an unsustainable path.

A host of other factors come into play in determining how much housing wealth is realized over the span of a lifetime. For example, buying higher valued homes—if successful—can produce more wealth both through forced savings and by earning returns on a higher valued asset. By the same

means, those who trade up to more expensive homes over time may also accrue greater housing wealth. The age at which a first home is purchased can also be significant, giving the household a longer period to accumulate wealth. Of course, the quality of the home purchased and the owner's ability to maintain it will also affect both ongoing maintenance costs and how much the home appreciates over time.

But arguably the most fundamental factor—the true golden rule of how to accumulate wealth through homeownership—is whether ownership is sustained over the long term. Housing booms aside, many of the financial benefits are slow to accumulate, including the slow build up of forced savings, the compounding of values at low appreciation rates, and the decline in monthly housing costs in real terms over time. The expression “time heals all wounds” may also be applicable to many of homeownerships most critical risks. The losses associated with buying near the peak of a price cycle will diminish over time as owners benefit from the next upswing in prices. And even in areas where real growth in house prices does not occur or is limited, over the long term owners will still amass some degree of wealth through paying off the mortgage and as a result of savings from lower housing costs. On the flip side, a failure to sustain homeownership—particularly when the end result is a foreclosure—will wipe out any accrued wealth and bring additional costs in the form of a damaged credit history that will incur further costs over time and limit opportunities to buy another home in the near term.

To some degree whether ownership is sustained will depend on choices that owners make over time – including whether the home they buy is affordable, whether they make prudent choices about refinancing, and whether they maintain the home to avoid larger home repair bills. But whether owning is sustained also will depend on whether the household can weather any number of significant events that can fundamentally alter their financial circumstances, such as loss of a job, a serious health problem, or change in the family composition due to the birth of a child, death, divorce, or the need to care for a parent or relative. Over the course of a lifetime, these events are likely to befall most everyone. Whether homeownership can be sustained in the wake of these events will depend on the ability of the household to adjust to their changed circumstances and whether they have enough available savings to cushion the blow.

Impediments to Wealth Creation among Lower-Income and Minority Homeowners

Up to this point the discussion presented has considered homeownership's financial risks and rewards in a general sense. But the concern of this paper is specifically with the potential for homeownership to serve as an effective means of wealth accumulation for lower-income and minority

households. How are the odds of generating wealth as a homeowner likely to differ for these households?²

In keeping with the fundamental importance of sustained homeownership to accumulate wealth, the chief concern is that these groups of homebuyers face a more difficult time in maintaining ownership. Studies analyzing panel data to document homeownership spells among first-time buyers consistently find that low-income and minority owners have a lower probability of maintaining homeownership for at least five years. In an analysis of the National Longitudinal Survey of Youth (NLSY) from 1979 through 2000 Haurin and Rosenthal (2004) find that ownership is less likely to be sustained among both these groups. Specifically, only 57 percent of low-income buyers were found to still own their first home five years later, compared to 70 percent of high-income owners (with income categories defined by income quartiles at age 25). First homeownership spells were also found to be much shorter for minorities, averaging 6.5 years among whites, compared to 4.4 years for blacks and 5.4 years for Hispanics. In an analysis of the PSID covering the period from 1976 through 1993 Reid (2004) had similar results, with only 47 percent of low-income owners still owning their first homes 5 years later compared to 77 percent of high income owners (with incomes here defined based on average income in the years prior to homeownership compared to area median incomes). Reid further found that minorities had a harder time staying in their first home, with 42 percent of low-income non-whites still owning after five years compared to 54 percent of low-income whites.

While these results raise clear concerns about the high risk of failed homeownership among these groups, the focus on a single homeownership spell may overstate the extent to which homeownership is not sustained in the long run. Haurin and Rosenthal (2004) also examine subsequent tenure experience in their panel and find that the share of households that return to owning a second time is very high for both whites and minorities. Over the 21 year period in their panel, 86 percent of whites who ever bought a home either never returned to renting or regained owning after a subsequent spell as a renter, with only slightly lower rates for blacks (81 percent) and Hispanics (84 percent). However, they do find that minorities spend more years in their intervening spells as renters, which reduces the overall amount of time they can accumulate benefits from owning.

Another critical difference in the financial returns to owning for low-income households is that the ability to deduct mortgage interest and property taxes from federal taxable income may be of little or no value. In order to benefit from these tax provisions, the amount of available deductions must

² Galster and Santiago (2008) provide a useful framing of this issues and a comprehensive review of the relevant literature.

exceed the standard deduction, which stood at \$5,950 for individuals and \$11,900 for married couples in 2012. For taxpayers with lower valued homes, particularly married couples, the costs of mortgage interest and property taxes even when added to other deductions for state taxes and charitable contributions, may not greatly exceed the standard deduction. In addition, the value of these deductions depends on the taxpayer's marginal tax rate, which will lower for low- and moderate-income households. In fact the share of the total value of the mortgage interest deduction going to moderate income households is fairly small. According to estimates from the Joint Committee on Taxation (2013), only 3 percent of the total deductions went to filers with incomes under \$50,000, 9 percent to those with incomes between \$50,000 and \$75,000, and 11 percent to those with income between \$75,000 and \$100,000, leaving 77 percent of the benefit going to those earning above \$100,000. To the extent that these tax benefits swing the financial scales in favor homeownership, this tilting of the calculus is not very evident for low- and moderate-income tax filers.

There are also systematic differences in mortgage terms and characteristics by income and race/ethnicity that can also affect the financial returns to owning. The development of the nonprime lending industry that began in the 1990s and came to full blossom during the housing boom produced much greater variation in mortgage terms and pricing than had previously been evident. A fairly extensive literature has documented the greater prevalence of subprime lending among minorities and, to a lesser extent, low-income borrowers and communities (see, for example, Bradford, 2002; Calem, Gillen and Wachter, 2004; Apgar and Calder, 2005; Avery, Brevort, and Canner, 2007; Belsky and Richardson, 2010). As described above, higher costs of financing can significantly reduce the financial benefits of owning. While the expansion of financing options beyond a "one size fits all who qualify" approach to lending has the potential to extend homeownership opportunities to a greater range of households, there is significant evidence that the cost of credit was often higher than risk alone would warrant. Bocian, Ernst and Li (2008) present perhaps the most compelling evidence through an analysis of a large data set on nonprime loans that documents a wide range of risk measures, including credit scores as well as income and race/ethnicity. They find that even after controlling for observable differences in credit quality both blacks and Hispanics were significantly more likely to obtain high-priced mortgages for home purchase, while blacks were also more likely to obtain higher-priced refinance loans. These higher costs of borrowing not only limit the wealth producing capacity of homeownership, they also increase the risk of failing to sustain homeownership. In fact, Haurin and Rosenthal (2004) find that a 1 percentage point increase in the mortgage interest rate increases the rate of homeownership termination by 30 percent.

Low-income and minority borrowers are also less likely to refinance when interest rates decline. In an analysis of loans guaranteed by Freddie Mac during the 1990s Van Order and Zorn (2002) find that low-income and minority borrowers were less likely to refinance as interest rates fell. Their analysis also found that once borrower risk measures and loan characteristics were taken into account there were no remaining differences in refinance rates by income—although this just indicates that refinancing may be constrained by credit factors. Minorities, on the other hand, still had lower rates of refinancing even after controlling for these factors, suggesting that there were impediments to refinancing by these borrowers that were in addition to measurable credit factors. Nothaft and Chang (2005) analyze data from the American Housing Survey (AHS) from the late 1980s through 2001 and also find that minority and low-income owners were less likely to refinance when interest rates declined. These authors use their results to estimate the foregone savings from missed refinance opportunities, which are more than \$20 billion each for black and low-income homeowners.

To the extent that low-income and minority homebuyers may be more likely to purchase homes in poor condition they are also exposed to greater risks of high costs of maintenance and repair. Herbert and Belsky (2006) find that compared to whites, black and Hispanic first-time homebuyers were more likely to buy homes that were moderately or severely inadequate as characterized by the AHS—6.5 percent for blacks and 8.8 percent for Hispanics compared to 4.3 percent among whites. A similar gap was also evident between low- and high-income households. While there has been little study of the incidence of unexpected home repair needs, a study by Rohe and his colleagues (2003) of participants in homeownership counseling programs found a fairly significant incidence of the need for unexpected repairs. Roughly half of 343 recent homebuyers reported that they had experienced a major unexpected cost in the first few years after buying their home, with the most common problem being a repair to one of the home's major systems.

Finally, there are also concerns that lower-income households and minorities may be more likely to purchase homes in neighborhoods with less potential for house price appreciation. This is a particularly salient issue for minorities given the high degree of residential segregation by race and ethnicity that continues to be evident in the US. However, Herbert and Belsky (2006) present a detailed review of this literature and conclude that “taken as a whole the literature indicates that there is no reason to believe that low-value segments of the housing market will necessarily experience less appreciation than higher-valued homes. In fact, at different points in time and in different market areas, low-valued homes and neighborhoods have experienced greater appreciation rates. Although the opposite is also true.” (Page 76) The evidence about differences in appreciation rates by neighborhood

racial composition is less definitive. Here Herbert and Belsky (2006) conclude that “it does appear that homes in mostly black areas may be less likely to experience appreciation, but this conclusion is tempered by the small number of studies and the fact that they mostly analyzed trends from the 1970s and 1980s, which may no longer be relevant” (page 77).

Findings by Boehm and Schlottmann (2004) regarding differences in wealth gains from homeownership by race and income are instructive in this regard. They find that over the period from 1984 to 1992 there was little difference in appreciation rates in the specific neighborhoods where minorities and low-income households lived. Instead, they found that differences in housing equity accumulation were tied to the lower valued homes and the shorter duration of ownership for lower-income and minority households. Thus, differences in appreciation rates may be less of a concern in whether housing leads to wealth accumulation than these other considerations.

Re-assessing the Calculus of Wealth Accumulation through Homeownership

As the above review has shown, there were significant concerns about the risks of homeownership as an investment well before the housing bubble burst. For critics of homeownership as a wealth building tool the experience of the housing bust was in many respects a confirmation of their fears. Still, there were several markets developments during the boom years that magnified these preexisting risks. Most notably there was a marked increase in the prevalence of riskier mortgages, including those calling for little or no documentation of income, adjustable rate loans that exposed borrowers to payment shocks from the expiration of initial teaser rates or reduced payment options, allowances for higher debt to income ratios, and greater availability of loans for borrowers with very low credit scores. Downpayment requirements also eased as loan-to-value ratios (LTVs) of 95 percent or more became more common and borrowers also used “piggyback” second mortgages to finance much of the difference between the homes’ value and a conforming first mortgage at an 80-percent LTV.

Not unrelated to the greater availability of mortgage credit, house prices also exhibited much greater volatility than in the past, with a dramatic increase in prices that greatly outpaced trends in both incomes and rents and belied an unsustainable bubble. The greater availability of credit also increased the opportunity for lower-income households to miss-time the market. Belsky and Duda (2002) found that during the 1980s and 1990s lower-valued homes were less likely to be transacted around market peaks, so buyers of these homes were less likely to buy high and sell low. They speculated that this was due to the natural affordability constraints that took hold as markets peaked. But during the boom of

the 2000s lower-valued homes experienced greater volatility in prices, arguably reflecting much greater credit availability at the peak than was true in past cycles (Joint Center for Housing Studies, 2011).

However, there are good reasons to believe—or certainly to hope—that the conditions that gave rise to this excessive risk taking and associated housing bubble will not be repeated any time soon. The Dodd-Frank Act includes a number of provisions to reduce the degree of risk for both borrowers and investors in the mortgage market. The Qualified Mortgage (QM) is aimed at ensuring that borrowers have the ability to repay mortgages by requiring full documentation of income and assets, setting tighter debt to income standards, and excluding a variety of mortgage terms that expose borrowers to payment shocks. The Qualified Residential Mortgage (QRM) is aimed at ensuring greater protections for investors in mortgage backed securities by requiring the creators of these securities to retain an interest in these investments if the loans included in the loan pool do not conform to certain risk standards that essentially mirror those of the Qualified Mortgage. Dodd-Frank also established the Consumer Financial Protection Bureau to fill a gap in the regulatory structure by creating an agency charged with looking out for consumers' interests in financial transactions. Beyond these regulatory changes, there is also a heightened awareness of the risks of mortgage investments on the part of private sector actors who have suffered significant financial losses with the bursting of the housing bubble. Regulatory changes aside, these private actors are unlikely to embrace riskier lending any time soon. The Federal Reserve and other federal regulators are certainly more attuned to the possibility of a bubble in housing prices and so are more likely to act in the event that signs of a bubble re-emerge.

But even in the absence of the excessive risks of the last decade, homeownership will remain a risky proposition. Thus, at best, we may return to the market conditions that existed prior to the boom and the real risks that these conditions posed for investments in owner-occupied housing. In that regard, an assessment of experience in wealth creation through homeownership prior to the boom is relevant for what we might expect in the future.

On the other hand it does seem likely—and arguably even desirable given how tight credit has become—that some greater degree of risk taking will emerge to make credit available to the many lower-income and lower-wealth households that would like to own a home. In fact, the QM standard of a total debt-to-income ratio of up to 43 percent does curtail the higher levels that became evident during the boom, but this cutoff still represents a liberalization from standards for conventional mortgages that prevailed in the 1990s. There may also have been a shift in consumer attitudes toward mortgage debt, with fewer households seeking to pay off mortgages over time and thus exposing themselves for longer periods to the risks associated with these leveraged investments. Over time, as

conditions return to normal and the market adjusts to new regulatory structures, we are likely to see mortgages originated outside of the QM and QRM boxes. In that regard, an assessment of the experience of homeowners through the boom and bust is instructive as a stress test of how likely homeownership is to build wealth under more extreme market conditions.

The next two sections of the paper look to assess homeownership's potential for wealth building from these two perspectives. First by presenting a review of the literature assessing homeownerships' association with wealth building prior to the 2000s and then by analyzing data from the last decade to examine how homeownership was associated with changes in wealth through the turbulent conditions of the 2000s.

Review of Previous Studies Assessing the Financial Returns to Homeownership

As the discussion up to this point has intended to illustrate, whether owning a home will lead to the accumulation of wealth is the result of complex set of factors related to the choices that households make in buying their home and how these choices interact with market conditions both at the time of purchase and over time. This complexity makes it quite difficult to assess whether in practice owning is likely to be an effective means of increasing a household's wealth. A further complicating factor is that there is a substantial selection bias in who becomes a homeowner, as there is reason to believe that those who are most secure in their financial condition and most inclined to save are more likely to become owners. For this reason, comparisons of the wealth profiles of owners and renters may not be able to attribute any observed differences solely to the influence of homeownership on the ability to accrue wealth.

There are two broad classes of studies that have attempted to assess the financial benefits of homeownership in light of these challenges. One group relies on simulations that compare the theoretical costs and benefits of owning and renting under a variety of assumptions about market conditions and household choices. A key appeal of these studies is that they essentially remove concerns about selection bias by assuming otherwise identical households operate under a consistent set of decision rules. They can also isolate the influence of specific factors to shed light on the paths that are most likely to make owning or renting financially beneficial. But while these studies highlight the potential financial returns to owning and renting, they do not capture how households are likely to actually behave in these situations and so leave open the question of whether the *potential* returns of these tenure choices are likely to be realized in practice.

Another group of studies rely on panel studies that track households over time to examine how choices about owning and renting are correlated with changes in wealth. The findings from this type of analysis provide evidence of whether in *practice* owners are more likely to accrue wealth than renters and how this experience differs by income and race/ethnicity. Where the theoretical comparisons of owning and renting also generally focus on a single spell of homeownership – that is, the financial outcome associated with the period between buying and selling a single home – panel studies can track households through multiple transitions in and out of owning to assess outcomes from a series of tenure choices over time. The main drawback of these studies is the lingering concern that owners may be inherently different from renters in ways that observable household characteristics cannot capture. Some of these studies employ statistical methods to try to control for this selection bias, although it is doubtful that these controls can fully account for these differences.

Both classes of studies provide important insights into the opportunities and drawbacks of homeownership as a means of increasing household wealth. When viewed as a whole the findings from both streams of research help paint a clearer picture of whether and how homeownership may help foster wealth creation. The sections that follow highlight key findings from each of these literature strands.

Simulations of the Financial Returns to Owning and Renting

Beginning with Mills (1990) there have been a number of studies that have simulated the financial returns to owning and renting under a variety of assumptions to identify whether and under what circumstances owning or renting is likely to be more financially beneficial (Capone, 1995; Belsky, Retsinas, and Duda, 2007; Rappaport, 2010; Beracha and Johnson, 2012). While the studies differ in important respects, the general approach is to compare the “all-in” costs of owning – including mortgage interest, property taxes, insurance, maintenance, and transaction costs along with offsetting gains in property value – to the costs of renting a comparable housing unit. Either implicit or explicit in these comparisons is that renters save and invest both the initial investment that owners make in buying their homes as well as any annual savings in housing costs.

There are a host of assumptions that underlie these calculations, but among the most influential factors are the estimate of rents as a share of house value, the length of time the home is owned, the basis for simulating trends in house prices and rents over time, and the treatment of income tax benefits. The studies differ in fundamental ways related to the range of assumptions tested and the method for comparing returns to owning and renting and, as a result, individually reach somewhat

different conclusions about which tenure choice is likely to be preferred. But collectively the studies lead to some general conclusions about the relative financial merits of owning and renting.

Perhaps the most fundamental conclusion from these studies that runs counter to the prevailing sense that homeownership is a powerful source of wealth is that under a variety of conditions renting is often more likely to be a better financial choice than owning. Belsky, Retsinas and Duda (2007) compare owning and renting in four different market areas chosen to represent different degrees of price appreciation and volatility over the period studied from 1983 through 2001. They focus on holding periods of 3, 5 and 7 years during their window of study and report the share of different holding periods where owning results in higher financial returns than renting. Overall they find that in only 53 percent of the 3-year holding periods would owning be preferred to renting. Increasing the holding period to 7 years—which allows for more time to work off the high transaction costs of buying and selling a home—only increases this proportion to 63 percent. Rappaport (2010) reaches a similar conclusion based on an analysis of national trends in market conditions between 1970 and 1999 and an assumed 10-year period of owning a home. He finds that owning a home unambiguously built more wealth in about half of the possible 10-year periods, renting was clearly better in another quarter and likely, but not unambiguously, preferred in the remaining periods. Finally, Beracha and Johnson (2012) come to a similar conclusion in an analysis of all possible 8-year holding periods given actual market conditions at both the national and regional level between 1978 and 2009. They find that between 65 and 75 percent of cases renting offered greater opportunities for accruing wealth than owning, depending on whether renters employing a more conservative or aggressive investment approach.

In parsing the findings of these studies, there are several factors that are the critical drivers of the results. Perhaps the most obvious is the importance of the timing of home purchase relative to market cycles in prices and interest rates. Depending on the future course of prices, rents and interest rates one or the other tenure would be strongly preferred at different points in time. The importance of timing may be most clearly demonstrated in Belsky, Retsinas and Duda (2007) when they consider different holding periods among owners. In general, it would be expected that longer holding periods should favor owning as more time is allowed to overcome high transaction costs, pay down additional principal, and ride out price cycles. Instead, they find that in most markets the likelihood of owning being preferred to renting was little changed by the holding period as short holding periods offered the possibility of catching only the upswing in prices while longer holds made it more likely that owners would share in some portion of a downturn. Only in Chicago, which did not experience such dramatic swings in prices, were longer holding periods found to be much more likely to benefit owning.

Still, the issue of holding period is an important consideration. The analysis by both Mills and Capone solved for the holding period that was needed for owning to yield a higher return than renting on the assumption that longer holding periods would always favor homeownership. In his base case scenario Mills found a holding period of slightly longer than 7 years was needed for owning to be preferred. The more recent studies that have showed the importance of market timing either assumed a single fixed holding period of 8 to 10 years (as in Beracha and Johnson and Rappaport) or a range of relative short holding periods (as in Belsky, Retsinas and Duda). If owning does become more favorable over a longer period of time – for example, slightly longer than 8 to 10 years – these assessments would not capture this. In fact, many households move in and out of homeownership over time so a more complete assessment of the financial implications of tenure choice would take into account multiple homeownership spells. While one spell of owning may yield low returns, if homeownership is sustained or resumed then the household may yet benefit from the next upswing.

Another important factor driving the findings are assumptions made about rents as a share of house value. This ratio is difficult to estimate both because of systematic differences in the nature of the owner and renter occupied stock and because market values and rents are hard to observe simultaneously. How much renters have to pay to rent a comparable home is obviously a key driver of financial outcomes as it determines how much they can save annually by renting, thereby adding to their wealth.

Mills (1990) found that among the variables used in his simulation, his results were most sensitive to the ratio of rents to house values as a single percentage point change up or down leading to fluctuations in the required holding period from 3 to 23 years. Capone (1995) built on Mills study to examine the rent-versus-buy decision specifically for lower income households. He makes note of the importance of the rent-to-price ratio assumption and argues that Mills assumption of 7 percent was well below the ratios observed in low-cost segments of the market, where ratios of 10 to 12 percent were more reasonable. Under Capone's assumption that renters faced much higher rents he found that owners only needed to hold onto their homes for about 3 years for owning to be preferred.

In contrast, Belsky, Retsinas and Duda rely on rent to price ratios is in the range of 5 to 7 percent, while the series used by Beracha and Johnson derived by Davis, Lehnert, and Martin (2008) appears to average about 5 percent. In both cases these assumptions are more favorable to renting than the assumptions used by either Mills or Capone. In recognition of the importance of this assumption, Rappaport structures his analysis to estimate the rent-to-price ratio that is the breakeven point between owning and renting. He then compares this estimate to what he feels is a plausible range for this ratio of

between 5 and 10 percent based on analysis of different market areas over time. At the higher end of this range owning would almost always be preferred, while the lower end leads to his conclusion that owning is clearly preferred to renting in only about half of the holding periods considered. In short, high or low values of this ratio can swamp other considerations, yet, as Rappaport demonstrates, pinning down actual values for this ratio is not an easy task.

Several of the studies have examined the issue of whether tax benefits are important to whether owning makes more financial sense than renting. Mills assumes that owners can take full advantage of tax benefits at a 28 percent marginal rate. When he reduces the marginal rate to 15 percent he finds that owning is never preferred. Capone, though, demonstrates, that this knife edge does not hold if a higher rent to price ratio is assumed. In his base case analysis, owners are only assumed to benefit from tax benefits if they exceed the standard deduction and since he assumes a much more modest house in keeping with his focus on lower-income households, the tax benefits are essentially non-existent. As a result, reducing the tax benefits in his analysis does not change his conclusion that owning is a better financial choice even after only a few years. Belsky, Retsinas and Duda also examine the importance of tax benefits for lower-income owners. Like Capone, they adjust the value of tax deductions to account for the size of the home purchased and the amount of the standard deduction. They also find that tax benefits by themselves generally do not change the calculus of whether owning beats renting financially. So while tax benefits are an important factor among higher income households, as Mills found, it has little effect on the calculus for lower-income households. Despite getting limited benefits from tax breaks under a variety of circumstances Capone and Belsky, Retsinas and Duda find that lower-income households can fare better financially by owning.

Belsky, Retsinas and Duda also make a unique contribution by examining how the returns to homeownership are affected by higher mortgage costs. They examine two scenarios: one where owners face interest rates that are 2 percentage points higher than prime rates and another where they are 5 percentage points higher. Under the first scenario, the likelihood that owning would be preferred to renting is decreased by moderate amounts (between 6 and 17 percentage points), while under the later scenario owning is rarely a better financial choice than renting. In short, they find that higher interest rates do reduce the financial appeal of homeownership, although the impact is most pronounced at extremely high levels.

Lastly, and in some ways most critically, the finding that renting offers the potential for higher returns than owners depends in large part on renters taking steps to invest the annual savings in housing costs compared to renting. Building on Beracha and Johnson (2012), Beracha, Skiba, and

Johnson (2012) examine how variations in key assumptions regarding trends in prices, rents, interest rates, downpayment shares, and the returns available from alternative investments affect the buy versus rent financial calculus. They find that modifying most factors in isolation have only a moderate effect on whether renting is favored over owning. However, when they drop the assumption that renters actually invest any annual savings in housing costs on top of the initial downpayment they find that renting rarely results in higher wealth than owning. Thus, they find that the forced savings aspect of homeownership is of fundamental importance in determining whether owning will lead to greater wealth.

This finding is echoed in the results of Boehm and Schlottmann (2004) who employ a somewhat unique approach to simulating the impact of homeownership on wealth accumulation. This study uses the Panel Study of Income Dynamics (PSID) to model the probability of moving in and out of homeownership on an annual basis over the period from 1984 through 1992. These same data are also used to estimate the house value that a household would opt for if a home were purchased in a given year. The estimated house value is then inflated based on house price trends in the census tract where the household resided to yield each household's expected gain in wealth from homeownership. This analysis finds that while minorities and low-income households do accrue wealth from homeownership, the amounts are much less than for higher income whites both because they own for fewer years and because they buy lower valued homes. But importantly, while the expected wealth accumulation among these households is less than that earned by higher income whites it is still positive. The authors also use the PSID to document that these same low-income and minority households essentially had no growth in non-housing wealth over the same period. So in that regard the estimates of potential wealth created through homeownership were all the more important.

Evidence from Panel Surveys about Wealth Accumulation through Homeownership

As the findings from Beracha and Johnson (2012) and Boehm and Schlottmann (2004) suggest, the theoretical advantages of renting may not be realized if in practice renters do not take advantage of the opportunities afforded to them for saving and investing derived from the lower cost of renting. In contrast, studies making use of panel surveys that track households over time provide insights into the wealth accumulation associated with actual choices about renting and owning. These studies universally find that owning a home is associated with higher levels of wealth accumulation even after controlling for a range of household characteristics. While the gains are also consistently smaller in magnitude for lower-income and minority households, these studies also find that in contrast to owners similar renters

experience little or no gains in wealth. These findings hold even when steps are taken to account for selection bias in who becomes a homeowner. Although these methods may not fully account for the differences between owners and renters, there remains a strong case that homeownership does make a positive contribution to household balance sheets regardless of income or race/ethnicity.

Haurin, Hendershott and Wachter (1996) was among the first studies to use panel survey data to track wealth trajectories associated with homeownership. The primary focus of this study was on the accumulation of wealth in anticipation of becoming an owner rather than how owning a home over time contributes to wealth accumulation, but their findings provide important insights into one way in which homeownership adds to wealth. They use the National Longitudinal Survey of Youth (NLSY) to track young renters age 20 to 28 in 1985 through 1990 and observe both their annual wealth levels and the timing of any transitions into homeownership. They find that household wealth goes up markedly during the transition to homeownership, increasing by 33 percent on average in the year prior to buying a home and then more than doubling in the year they first own. When they examine factors that contribute to this jump in wealth they find that marrying makes a significant contribution along with an increase in hours worked and a slightly higher incidence of inheritance and gifts. Their results suggest that an important mechanism by which homeownership adds to wealth is through the incentive to save in anticipation of buying a home. Even before realizing any returns on the investment in the home itself, the drive to become an owner results in substantially higher wealth than those who remain renters. Adding to this effect Haurin and his colleagues also find that wealth increases more rapidly in the years after becoming a homeowner—by 17 percent on average annually among their sample.

Reid (2004) uses panel data from the PSID for the period 1976 through 1994 to examine the financial outcomes of homeownership among low-income households who bought their first home at some point during this period (with low-income defined as those with incomes consistently below 80 percent of area median income before first buying a home). She takes two approaches to examining the returns to homeownership for this group. First, she estimates the change in home values for both low-income and minority homeowners compared to higher-income and white owners. She finds that the rate of increase in home values for these groups was fairly modest, failing to beat the returns that would have been earned on an investment in Treasury bills over the same time. Reid then examines wealth holdings of households by tenure status at the end of her period of observation. She finds that while low-income and minority owners generally built much less wealth than higher-income and white households, the amount of their housing wealth was non-trivial and was many times larger than their other forms of wealth. Like Boehm and Schlottmann, she also finds that those who were renters at the

end of the period essentially held no wealth of any kind. Reid, however, does not undertake a multivariate analysis to control for other factors that may account for the differences between owners and renters. Nor does she factor in the impact of failed efforts at homeownership on wealth. But the fact that home equity accounts for such a large share of wealth among low-income and minority households points to the important role that owning a home played in fostering wealth accumulation.

Di, Belsky and Liu (2007) was the first study to directly assess the relationship between homeownership and wealth accumulation over time while attempting to account for household characteristics and to include some measure of potential selection bias in who becomes an owner. The study uses the PSID to track households who were renters in 1989 through 2001 to observe transitions into and out of homeownership. The change in household wealth over time is then modeled as a function of starting wealth, a range of household characteristics thought to influence wealth, and, their principal measure of interest, the amount of time spent as an owner. In order to take into account a household's propensity to save, the study uses the PSID from 1984 through 1989 to estimate the share of income that was saved as an indication of savings behavior prior to the period when tenure transitions are observed as a means of controlling for this tendency in assessing differences in savings behavior after buying a home. Their principal finding is a positive and statistically significant association between additional years of homeownership and changes in wealth. The authors include a square term for the number of years owned to take into account anticipated impacts of the timing of moves into homeownership over the period as there was an initial decline in house values during the first years of their panel followed by more robust increases in later years. This square term is negative and significant indicating those who bought earlier in the period had lower cumulative gains in wealth. The largest estimated gains in wealth of \$13,000 per year of ownership occurred among those who owned for 8 years. But for those who owned for the maximum possible period of 12 years the gains were only \$3,333 per year. Prior savings tendency was positively associated with increases in wealth as expected, but was not statistically significant and so did not appear to capture any important difference in household behavior that was not already accounted for by other explanatory variables.

Turner and Luea (2009) undertake a very similar analysis using the PSID sample for the period from 1987 to 2001. In contrast to Di, Belsky and Liu who only include initial renters, their study sample includes all households in the sample as of 2001 that were age 65 or younger regardless of whether they were renters at the start of the period. The study pools observations for the sample on household wealth from three points in time: 1994, 1999, and 2001. For each observation they include a count of the number of years the household has owned a home since 1988 as their explanatory variable of

interest. The approach used in this study attempts to control for selection bias into homeownership by estimating a random effects model that includes a household specific constant term. Turner and Luea also separate the sample into two income classes to see whether the association between homeownership and wealth growth differs by income. Low- and moderate-income (LMI) households were those who had incomes below 120 percent of area median income in all three periods when wealth was observed. The results indicate that each year of homeownership is associated with nearly \$14,000 in additional wealth, perhaps not surprisingly quite similar to the amount found by Di, Belsky and Liu using the same survey over a nearly identical period (although with a somewhat different sample). When controls are included for LMI status, Turner and Luea find that these households have somewhat lower wealth accumulation of between \$6,000 and \$10,000 per year. But they note that since the average wealth holding of LMI households in 2001 was about \$89,000 this annual rate of increase accounts for a fairly sizeable share of total wealth.

In an unpublished dissertation, Mamgain (2011) extends the work of Turner and Luea by employing a two-stage model to add stronger controls for selection into homeownership. Like most of the other studies, Mamgain also uses the PSID, but his period of observation is from 1999 through 2007. Despite the different time period examined, when he replicates Turner and Luea his analysis yields similar results regarding the magnitude of the association between homeownership and wealth (although by ending the study period in 2007 it does not include the sharp loss of both housing and financial wealth that followed 2007). When Mamgain adds additional controls to his model to capture the intention to move, the respondent's health status, their ownership of other real estate and an estimate of current LTV he finds a somewhat lower impact of additional years of owning, but the estimate is still significant and positive. Importantly, when he employs his two-stage approach to include both a selection term and an instrumental measure of current tenure his estimate of the impact of each additional year on owning does not change. He also estimates separate models by income level and finds that there is no difference in the impact of owning across income classes—all are positive and significant. In short, like other studies he does not find a significant impact of selection bias on his findings and he also finds that low-income owners are also likely to benefit from owning homes.³

³ He does differ from previous studies in how he estimates the contribution of owning to wealth gains, by focusing on impacts at much lower household wealth levels. He finds that assuming wealth of about \$2,500 for the lowest income group (at or below 150 percent of the poverty level) owning a home only adds a few hundred dollars a year to the household's bottom line. But with total wealth set a level well below the median among owners in this income class this result seems implausible.

None of the studies estimating statistical models to assess the contribution of homeownership to wealth accumulation analyzed whether there were differences in this experience by race and ethnicity. As discussed above, there are significant racial and ethnic differences in residential location, size of home, and characteristics of financing used, all of which could contribute to differences in wealth outcomes. Shapiro, Meschede, and Osoro (2013) use the PSID from 1984 through 2009 specifically to examine the factors associated with more rapid growth in wealth among whites over this period compared to blacks. Tracking the same set of households over this period they find that gains in median wealth among whites exceeded those among blacks by \$152,000. Based on the results of a multivariate analysis they found that the single largest driver of this divergence in wealth was the additional time whites spend as homeowners, which they estimate accounted for 27 percent of the additional white gains. The next most significant factors were differences in income (20 percent), unemployment spells (9 percent), lower shares with a college education (5 percent), and differences in inheritance and financial support from family (5 percent). They also find that years of homeownership exerted a stronger influence on gains in wealth for blacks than it did for whites. While the authors do not attempt to control for any selection bias to control for who becomes a homeowner, none of the previous studies that have taken these steps have found these controls to change their findings.

Conclusions Drawn from the Previous Literature

Studies presenting simulations of the financial returns to renting and owning make a convincing case that in many markets over many periods of time and under a variety of assumptions renting ought to support greater wealth accumulation than owning. However, as virtually all of the panel studies document, in practice owning has consistently been found to be associated with greater increases in wealth even after controlling for differences in household income, education, marital status, starting wealth, inheritances, and other factors. Importantly, these same studies also consistently find that owning has a positive effect on wealth accumulation among both lower-income households and minorities, although the gains are smaller than for higher-income households and whites generally. Housing wealth among lower-income and minority households also often accounts a substantial share of total wealth for these groups. On the other hand, renters in these same demographic groups are consistently found to accrue little to no wealth over time.

How can we reconcile the findings from simulation studies that renting should often be more financially advantageous than owning with the findings from the analysis of panel surveys that unambiguously find owning to be more favorable? One explanation may be that behavioral issues play

a key role. Efforts to save for a downpayment lead to a large jump in wealth that is then further supported by at least modest appreciation and some pay down of principal over time. Renters may have the opportunity to accrue savings and invest them in higher yielding opportunities but lack strong incentives and effective mechanisms for carrying through on this opportunity. There is also likely some degree of selection bias at work in who becomes a homeowner. While studies do control for income, education, marital status and other factors that would contribute in differences in the ability to save, there are likely differences in motivation and personal attributes that are related to both savings practices and whether someone becomes an owner. While controls included in studies to capture this effect have not diluted the association between homeownership and increases in wealth, this may simply reflect the challenge of capturing these difficult to measure factors.

Studies using panel surveys may also make the benefits of homeownership appear more assured than they actually are by not fully capturing the impact of failed attempts at owning on changes in wealth. Studies to date have focused on measuring homeownership as the number of years spent as a homeowner, which does not distinguish between short sustained spells of owning from similar periods of owning that end in foreclosure or other financial distress. So while homeownership *on average* may increase wealth, it is undoubtedly the case that for some share of households owning a home had a negative impact on their balance sheet.

Finally, the studies reviewed here may also not fully reflect changes that have occurred over time in both market conditions and household behavior. Most of the studies cited reflect experiences as owners during the 1980s and 1990s and so do not capture the market dynamics that began in the late 1990s but came to full bloom during the boom years of the 2000s, including the much greater availability of and appetite for high loan-to-value loans, higher cost loans, sharp swings in house prices, and much higher risks of default even before the national foreclosure crisis began. The next section turns to an analysis of data from the 2000s to examine whether findings about homeownership's positive association with wealth accumulation held over this period, particularly for low-income and minority households who were most likely to have used high cost mortgage products.

Experience with Homeownership and Wealth Accumulation through the Boom and Bust

Given the substantial changes in the availability, cost and terms of mortgage financing that began in the 1990s and accelerated through the mid-2000s and the accompanying boom and bust in home prices, there is good reason to believe that the experience of homeowners in accumulating wealth over the last decade has been substantially different from what is documented in much of the existing

literature for earlier periods. In this section of the paper we present information on wealth accumulation through homeownership during the housing market boom and bust of the 2000s.

In the first section, we present findings from the tri-annual Survey of Consumer Finance (SCF) to present a high level picture of the contribution of homeownership to household balance sheets over time. The SCF also provides insights into how a greater tendency both to use high loan-to-value (LTV) loans to purchase homes and to take cash out through refinancing may have reduced wealth associated with homeownership. While the SCF does document the substantial decline in housing wealth following the bust, it also shows that, despite these losses, average homeownership wealth is generally higher than it was in the mid-1990s and continues to represent a substantial portion of household wealth for minorities and lower-income households. The SCF also shows that while the degree of leverage in the housing market showed a marked increase in the years following the Tax Reform Act of 1986, the distribution of LTVs did not change a great deal between the mid 1990s and the housing boom years. However, the crash in housing prices did push LTVs to historic highs.

We then turn to an analysis of the PSID for the period from 1999 to 2009 to examine how homeownership spells contributed to trends in household wealth over this period. While house prices grew substantially for much of this period, it also captures most of the decline in prices as well. Whereas previous studies have focused solely on how each additional year of homeownership contributes to household wealth, we are also interested in assessing how failed attempts at homeownership affect wealth to assess the downside risks of owning as well. We find that on average homeownership's contribution to household wealth over this period was remarkably similar to that found in earlier periods. The results also confirm previous findings that while lower-income households and minorities realized lower wealth gains from owning, on average these gains were positive and significant. The results also show that a failure to sustain homeownership is associated with a substantial loss of wealth for established owners, although those who made a failed transition from owning to renting are no worse off financially than those who remained renters over the whole period. Thus, despite the many ways in which market conditions over this period might have been expected to undermine homeownership's wealth building potential, our analysis of the PSID finds that owning maintained a strong association with improvements in wealth over the decade from 1999 to 2009.

Long-Run Trends in Housing Wealth and Mortgage Debt

The sharp rise in home prices in many parts of the country is reflected in the substantial increase in average real housing equity among homeowners, roughly doubling (a gain of 96 percent) between

1995 and 2007 among all homeowners (Table 1). The gains were nearly as large among African-Americans (88 percent) and even larger among Hispanics (123 percent), although generally lower among households in the bottom two income quartiles where home equity increased by only 56 and 42 percent, respectively. The loss in housing equity between 2007 and 2010 was substantial, erasing 26 percent of home equity on average for all homeowners and taking back much of the gains made since 2001 for most groups. Mirroring their larger gains during the boom, Hispanics suffered the greatest loss of housing wealth, dropping by nearly half. Across income groups the declines were more moderate among those in the bottom half of the income distribution.

But despite these substantial losses, average real home equity in 2010 was still higher on average than in 1995 for all of the groups shown, and in many cases considerably higher. Whites and those in the highest income quartile had the largest gains, with average home equity up by 51 percent and 78 percent respectively. African-Americans and the lowest income quartile also maintained substantial gains of 39 percent and 35 percent, respectively. Hispanics and those in the middle income quartiles made the least progress, with average home equity up by only 12 to 18 percent.

Throughout this period the share of net wealth accounted for by home equity among all homeowners fluctuated between 22 and 29 percent, with much of the movement due to changes in non-housing net wealth. Between 1989 and 1998 home equity's share of average wealth fell from 29 to 22 percent as the stock market boomed while home values languished. Between 1998 and 2007 home equity's share of net wealth rose to 25 percent as the stock market absorbed the dot com bust while housing prices soared. Between 2007 and 2010 losses in housing wealth outpaced losses in other financial assets so housing's share of wealth fell back to 22 percent. Thus, despite the significant growth in housing equity in the first half of the 2000s it never came to account for an outsized portion of household net wealth among all homeowners.

A similar pattern is evident among minorities, although housing's share of wealth is much higher and the fluctuations in its share were more dramatic. Among African-Americans home equity accounted for more than half of net wealth in 1989 but fell to 35 percent by 2001 as housing equity stagnated while non-housing net wealth grew substantially. The growth in housing equity during the boom pushed the share up to 42 percent, and then increased to 44 percent in 2010 as non-housing net wealth fell more sharply than housing equity. Hispanics experienced a similar pattern although the more significant drop in housing equity caused the share of net wealth in housing to fall to 39 percent in 2010. Housing equity also accounts for about half of net wealth among households in the bottom half of the income

| Average Household Wealth Among Homeowners (2010 Dollars) | | | | | | | | | | | | | | | | |
|---|------------------------|----------------|------------------------|-----------------------------|------------------------------|----------------|------------------------|-----------------------------|------------------------------|----------------|------------------------|-----------------------------|-------------------------|----------------|------------------------|-----------------------------|
| Year | All Homeowners | | | | Non-Hispanic Whites | | | | African-Americans | | | | Hispanics | | | |
| | Total Net Wealth | Housing Equity | Non-Housing Net Wealth | Housing Share of Net Wealth | Total Net Wealth | Housing Equity | Non-Housing Net Wealth | Housing Share of Net Wealth | Total Net Wealth | Housing Equity | Non-Housing Net Wealth | Housing Share of Net Wealth | Total Net Wealth | Housing Equity | Non-Housing Net Wealth | Housing Share of Net Wealth |
| 1989 | \$459,788 | \$131,850 | \$327,938 | 29% | \$512,432 | \$140,096 | \$372,337 | 27% | \$149,265 | \$77,237 | \$72,029 | 52% | \$173,494 | \$81,517 | \$91,977 | 47% |
| 1992 | \$410,516 | \$112,547 | \$297,969 | 27% | \$448,152 | \$119,932 | \$328,220 | 27% | \$145,380 | \$64,737 | \$80,644 | 45% | \$184,549 | \$69,051 | \$115,498 | 37% |
| 1995 | \$432,596 | \$105,046 | \$327,550 | 24% | \$471,862 | \$110,368 | \$361,494 | 23% | \$127,391 | \$59,475 | \$67,916 | 47% | \$166,661 | \$70,912 | \$95,749 | 43% |
| 1998 | \$541,652 | \$117,553 | \$424,098 | 22% | \$595,768 | \$123,797 | \$471,971 | 21% | \$158,169 | \$59,785 | \$98,384 | 38% | \$239,917 | \$86,986 | \$152,931 | 36% |
| 2001 | \$687,462 | \$147,806 | \$539,656 | 22% | \$768,843 | \$158,872 | \$609,971 | 21% | \$170,272 | \$59,551 | \$110,721 | 35% | \$227,382 | \$79,134 | \$148,248 | 35% |
| 2004 | \$720,484 | \$185,149 | \$535,336 | 26% | \$814,139 | \$199,688 | \$614,450 | 25% | \$231,315 | \$91,559 | \$139,756 | 40% | \$290,075 | \$114,590 | \$175,484 | 40% |
| 2007 | \$815,808 | \$206,374 | \$609,435 | 25% | \$910,089 | \$219,648 | \$690,441 | 24% | \$268,352 | \$111,945 | \$156,407 | 42% | \$372,005 | \$157,781 | \$214,224 | 42% |
| 2010 | \$707,952 | \$153,300 | \$554,652 | 22% | \$814,455 | \$166,809 | \$647,646 | 20% | \$186,780 | \$82,732 | \$104,048 | 44% | \$214,353 | \$83,912 | \$130,441 | 39% |
| Year | Lowest Income Quartile | | | | Lower Middle Income Quartile | | | | Upper Middle Income Quartile | | | | Highest Income Quartile | | | |
| | Total Net Wealth | Housing Equity | Non-Housing Net Wealth | Housing Share of Net Wealth | Total Net Wealth | Housing Equity | Non-Housing Net Wealth | Housing Share of Net Wealth | Total Net Wealth | Housing Equity | Non-Housing Net Wealth | Housing Share of Net Wealth | Total Net Wealth | Housing Equity | Non-Housing Net Wealth | Housing Share of Net Wealth |
| 1989 | \$122,138 | \$65,968 | \$56,170 | 54% | \$192,750 | \$97,002 | \$95,748 | 50% | \$261,135 | \$108,665 | \$152,471 | 42% | \$940,333 | \$201,461 | \$738,872 | 21% |
| 1992 | \$121,550 | \$74,823 | \$46,726 | 62% | \$176,207 | \$83,486 | \$92,720 | 47% | \$246,716 | \$91,884 | \$154,832 | 37% | \$845,044 | \$167,648 | \$677,396 | 20% |
| 1995 | \$152,556 | \$75,405 | \$77,151 | 49% | \$174,020 | \$89,073 | \$84,947 | 51% | \$226,944 | \$84,073 | \$142,871 | 37% | \$907,646 | \$147,089 | \$760,557 | 16% |
| 1998 | \$156,451 | \$79,406 | \$77,045 | 51% | \$211,795 | \$89,781 | \$122,015 | 42% | \$294,059 | \$96,850 | \$197,208 | 33% | \$1,139,265 | \$170,411 | \$968,854 | 15% |
| 2001 | \$152,502 | \$83,598 | \$68,904 | 55% | \$244,074 | \$102,630 | \$141,444 | 42% | \$350,729 | \$112,348 | \$238,382 | 32% | \$1,515,408 | \$237,711 | \$1,277,698 | 16% |
| 2004 | \$200,967 | \$98,867 | \$102,099 | 49% | \$252,072 | \$122,081 | \$129,991 | 48% | \$390,989 | \$144,187 | \$246,802 | 37% | \$1,561,131 | \$303,269 | \$1,257,862 | 19% |
| 2007 | \$231,140 | \$117,820 | \$113,320 | 51% | \$271,239 | \$126,476 | \$144,763 | 47% | \$375,664 | \$145,294 | \$230,370 | 39% | \$1,821,505 | \$352,287 | \$1,469,219 | 19% |
| 2010 | \$282,248 | \$102,109 | \$180,139 | 36% | \$227,571 | \$99,567 | \$128,004 | 44% | \$307,228 | \$96,753 | \$210,475 | 31% | \$1,571,971 | \$261,577 | \$1,310,393 | 17% |

Source: Joint Center for Housing Studies tabulations of the Survey of Consumer Finances 1989-2010.

distribution with similar fluctuations in this share following the broad trends in housing and stock markets.⁴

One of the principal reasons for doubt about homeownership's ability to foster wealth accumulation is the increasing degree of leverage among homeowners (Mian and Sufi, 2011; Li and Yang, 2010). The rise in mortgage borrowing is believed to have its roots in a variety of forces, including as a response to the greater incentive to hold mortgage debt that arose from the 1986 change in tax law that limited the ability to deduct interest payments to mortgages (Maki, 2001; Stango, 1999). Data from the Federal Reserve Flow of Funds show that, in fact, the aggregate LTV of residential real estate was consistently between 30 and 34 percent from the start of the 1970s through 1988. This ratio then steadily declined over the next few years before stabilizing between 40 and 42 percent after 1993. Another factor often cited for greater leverage is the wider availability of mortgage credit that came with changes in the mortgage market in the late 1990s and 2000s (Mian and Sufi, 2011; Li and Yang, 2010). Combined, these forces are thought to have greatly lowered the forced savings aspect of homeownership as owners are more likely than in the past to tap their home equity in many cases to fund consumer expenditures (Brady, Canner, and Make, 2000; Canner, Dynan and Passmore, 2002). The SCF documents the increase in overall LTVs in the wake of the 1986 tax changes, with the average across all homeowners (including both those with and without a mortgage) rising from an average of 29 percent in 1989-92 to 36 percent in 1995-2001 (Table 2). But while there was substantial equity extraction from homes during the 2000s, on average these withdrawals essentially kept pace with the rise in home values so that the average LTV only increased to 38 percent during 2004-2007. The average then shot up to 45 percent in 2010 when house prices crashed.

The upper end of the LTV distribution showed a similar pattern, with a jump at both the 75th and 90th percentiles between the 1989-92 and 1995-2001 periods but with essentially no change in 2004-2007. Specifically, among all owners the 75th percentile LTV went from 56 to 66 percent while the 90th percentile increased from 77 to 85 percent. So despite the widespread perception that LTVs of 95 percent or higher were common, in fact the share of all owners with LTVs above this level accounted for a very small share. The trends among minority homeowners were similar although they had somewhat

⁴ One anomaly in Table 2 is the sharp rise in non-housing net wealth among the lowest income quartile in 2010, which is not evident in any other demographic group or in the overall distribution. This spike appears to reflect an increase in 2010 in the number of high wealth households reporting zero or negative income pushing them into the lowest income quartile. When median wealth is considered instead of mean wealth, there is a drop in non-housing wealth among this quartile that is similar to that for other groups. Thus, the sharp drop in mean housing equity as a share of wealth in this quartile does not reflect the experience for the median low-income household.

| Table 2 | | | | | | | | | | | | |
|--|-------------------------------|-----------------|-----------------|-------------------------------------|-----------------|-----------------|-------------------------------------|-----------------|-----------------|--------------------------------|-----------------|-----------------|
| Loan-to-Value Ratios by Race/Ethnicity and Income | | | | | | | | | | | | |
| | All Homeowners | | | Non-Hispanic Whites | | | African-Americans | | | Hispanics | | |
| Year | Average LTV | 75th Percentile | 90th Percentile | Average LTV | 75th Percentile | 90th Percentile | Average LTV | 75th Percentile | 90th Percentile | Average LTV | 75th Percentile | 90th Percentile |
| 1989 | 27% | 51% | 75% | 27% | 50% | 74% | 22% | 33% | 77% | 39% | 67% | 83% |
| 1992 | 31% | 60% | 80% | 31% | 60% | 80% | 28% | 55% | 78% | 36% | 68% | 81% |
| 1995 | 34% | 65% | 86% | 34% | 64% | 84% | 32% | 63% | 87% | 44% | 73% | 90% |
| 1998 | 37% | 68% | 86% | 37% | 67% | 85% | 38% | 77% | 91% | 36% | 68% | 90% |
| 2001 | 36% | 67% | 83% | 34% | 65% | 82% | 47% | 76% | 91% | 42% | 74% | 89% |
| 2004 | 38% | 68% | 84% | 37% | 67% | 84% | 42% | 72% | 90% | 41% | 67% | 86% |
| 2007 | 37% | 66% | 85% | 36% | 64% | 83% | 47% | 80% | 92% | 44% | 74% | 89% |
| 2010 | 45% | 78% | 98% | 44% | 77% | 98% | 46% | 80% | 100% | 53% | 84% | 100% |
| | Lowest Income Quartile | | | Lower Middle Income Quartile | | | Upper Middle Income Quartile | | | Highest Income Quartile | | |
| Year | Average LTV | 75th Percentile | 90th Percentile | Average LTV | 75th Percentile | 90th Percentile | Average LTV | 75th Percentile | 90th Percentile | Average LTV | 75th Percentile | 90th Percentile |
| 1989 | 11% | 2% | 37% | 22% | 37% | 73% | 31% | 56% | 83% | 36% | 61% | 76% |
| 1992 | 11% | 11% | 44% | 22% | 42% | 77% | 37% | 67% | 83% | 42% | 69% | 83% |
| 1995 | 14% | 11% | 63% | 25% | 46% | 79% | 42% | 74% | 90% | 44% | 72% | 86% |
| 1998 | 17% | 18% | 70% | 29% | 60% | 83% | 44% | 75% | 91% | 46% | 71% | 86% |
| 2001 | 19% | 23% | 76% | 32% | 68% | 88% | 41% | 73% | 85% | 41% | 66% | 80% |
| 2004 | 20% | 39% | 69% | 36% | 68% | 88% | 44% | 74% | 87% | 44% | 68% | 83% |
| 2007 | 17% | 23% | 67% | 32% | 60% | 86% | 47% | 75% | 89% | 43% | 68% | 83% |
| 2010 | 25% | 46% | 82% | 41% | 76% | 98% | 54% | 85% | 103% | 50% | 78% | 98% |

Source: Joint Center for Housing Studies tabulations of the Survey of Consumer Finances 1989-2010.

higher LTVs overall. Still, for both African-Americans and Hispanics average LTVs did not exceed 50 percent and the 90th percentile LTVs peaked at about 90 percent.

The fact that LTVs at the upper end of the distribution did not increase in 2004-2007 does seem to be at odds with other indications that high LTV loans were becoming more common, such as the finding by Avery et al. (2010) that piggy back loans were used in conjunction with nearly a million home purchase loans in both 2005 and 2006 accounting for nearly a quarter of all purchase loans. One explanation for the discrepancy may be that while high LTV loans were accounting for an increasing share of purchase loans, these borrowers still only accounted for a small minority of all homeowners. Another factor may be that sharply rising home prices during this period quickly masked very high LTVs by the time the 2007 SCF was conducted. And since home values are based on owners' estimates, LTVs may also be understated by overly optimistic views of home prices in 2007. Still, even if the SCF underestimates LTVs there should have been some rise evident at the upper end of the distribution if these loans had become much more prevalent.

In fact, the fall in house prices did push upper end LTVs in the 2010 SCF to very high levels, reaching 98 percent for whites and 100 percent for both African-Americans and Hispanics. The loss of housing equity and resulting spike in LTVs was highest for the upper middle income quartile, where the 90th percentile LTV reached 103 percent in 2010. Thus, the very high LTVs that are now evident are more a result of the fall in house prices than of a high preponderance of mortgages with little or no equity prior to the bust.⁵

Overall, the findings from the SCF point to the continued importance of housing equity as a source of household wealth even after the sharp fall in values from 2007 to 2010. Despite these losses, average housing equity remains well above levels from the mid-1990s. For minority and low-income households housing equity also continues to account for a substantial share of net wealth, as losses in non-housing wealth were also significant in the wake of the Great Recession.

The SCF also documents the substantial rise in mortgage debt during the mid-1990s as households adjusted to the incentives created by the 1986 Tax Reform Act to consolidate debt in mortgages in order to take advantage of the opportunity of the ability to deduct these interest

⁵ Of note, the SCF estimates of the number of homeowners with negative equity are lower than the widely cited estimates from CoreLogic, which estimated that there were 10.8 million underwater homeowners as of mid-2010 compared to 7.2 million from the SCF. This might suggest that respondents to the SCF overestimate their home values, although an assessment of the 2001 SCF by Bucks and Pence (2006) concluded that the estimates were fairly consistent with other benchmarks, with only a slight upward bias. While it is possible that owner estimates are subject to greater upward bias during the downturn, the difference between the SCF estimate and those from CoreLogic may well represent challenges in the later data as well.

payments. However, there is little evidence that borrowing rose after 1995 with an increased availability of mortgage credit as both average LTVs and those at the upper end of the distribution were little changed through the boom.

While the SCF provides an indication of broad market trends over time, the average figures presented here may mask how gains and losses in housing investments were distributed across households, including those who failed to sustain homeownership during this turbulent period. The analysis of the PSID presented in the next section examines how differences in homeownership trajectories over this period affected wealth accumulation for individual households.

Insights from the PSID 1999-2009

Our focus in analyzing the PSID is to assess how homeownership contributed to gains or losses in household wealth through the housing market boom and bust of the last decade. We examine changes in household wealth from 1999 to 2009, the latest year for which complete PSID survey data was available. Of course, since the period of observation is only through 2009 we do not capture the full extent of the housing market downturn. In fact, much of the decline in nominal home prices had occurred by then, with the CoreLogic home price index hitting a low in March 2009 some 30 percent below the 2006 peak. Prices fluctuated over the next two years, reaching a new low in March 2011 that was 5 percent below the 2009 level. But while much of the loss in home values had occurred by 2009 a large share of foreclosures had yet to occur. Still, the period studied does capture the elevated levels of default and foreclosures among subprime mortgages during the years leading up to the broader housing market meltdown and the first national wave of foreclosures from 2007 into 2009. Thus, the results provide some indication of the sustainability of homeownership through the years when more subprime and exotic mortgage products became widespread as well as the initial stage of the national housing crisis.

The sample is constructed by starting with all household heads in 1999. The starting year was selected because it was the first year the survey included detailed questions on household wealth after additional Hispanic households were added to the survey panel in 1997 to account for the surge in immigration that occurred since the original PSID panel was constructed in the 1960s. Our sample includes all household heads or spouses in 1999 that were still heads or a spouse in 2009, although we

drop households who were missing from more than two intervening surveys.⁶ We include both owners and renters at the start of our period of observation to observe how changes in wealth varied with different tenure trajectories over the period. The sample is limited to those under age 55 in 1999 to avoid including households entering into retirement years when wealth is less likely to accumulate and more likely to be tapped for living expenses.

Table 3 presents summary statistics for the PSID sample included in the analysis. There were a total of 4,143 households in the sample. The sample includes a fairly large number of African-Americans but a smaller number of Hispanics. Household income in each survey year is adjusted to constant 2011 dollars and then averaged across all surveys in order to categorize households by longer-term income. Four income categories are defined that roughly correspond to income quartiles for the entire sample with cutoffs selected at the nearest \$10,000 increment. The exclusion of older households from the sample reduced the share of lowest quartile households more than other income categories.

For much of our analysis we focus on estimates of net total wealth, which is the value of all assets (including savings, pensions, financial investments, businesses, farms, and real estate including the primary residence) less all outstanding debt.⁷ While in some respects our main concern could be with home equity, we focus more broadly on total net wealth both because home equity can be tapped for other investments and because owning a home may contribute to decreases or increases in other wealth if, for example, differences in monthly housing costs affect savings rates. Of note, home values are self-reported by respondents, which have been found in other surveys to overestimate values by between 3 and 6 percent (Bucks and Pence, 2006). This tendency to overstate home values should be kept in mind in evaluating our findings since it will contribute to some inflation in homeowner net wealth. However, given that housing equity is only a portion of total net wealth and the significant magnitude of differences in other forms of wealth across demographic groups a modest overstatement of home values is unlikely to explain much of the total differences in wealth observed.

Table 4 presents levels and changes in net wealth over the decade for key demographic groups. Overall, compared to African-Americans and Hispanics, median wealth among whites was nearly 10 times and 5 times higher, respectively, in 1999. The lowest income quartile households also had very little wealth that amounted to only a fraction of that held by higher income households. Virtually all

⁶ Respondents who drop out of the survey are more likely to be lower-income and minorities and so we opted to keep some respondents with missing survey years in order to not exclude a disproportionate share of these households.

⁷ For convenience, net wealth is sometimes referred to in the text as “wealth.” In this paper we do not focus at all on wealth measures, which is the value of all assets without regard to debt levels.

Table 3
PSID Sample Characteristics

| Race/Ethnicity | Unweighted | Weighted | Weighted Share |
|---|------------|----------|----------------|
| White | 2,366 | 62,918 | 73% |
| African-American | 1,343 | 11,676 | 14% |
| Hispanic | 296 | 7,706 | 9% |
| Other | 114 | 2,908 | 3% |
| Missing | 24 | 425 | 0% |
| Total | 4,143 | 85,633 | 100% |
| Age | | | |
| Under 25 | 416 | 6,966 | 8% |
| 25-34 | 1,143 | 23,652 | 28% |
| 35-44 | 1,470 | 27,993 | 33% |
| 45-54 | 1,112 | 26,984 | 32% |
| Missing | 2 | 38 | 0% |
| Total | 4,143 | 85,633 | 100% |
| Average Income 1999-2009 (2011 Dollars) | | | |
| <\$40,000 | 1,021 | 17,438 | 20% |
| \$40-69,999 | 1,071 | 21,914 | 26% |
| \$70-109,999 | 1,065 | 22,754 | 27% |
| \$110,000 and up | 986 | 23,527 | 27% |
| Missing | 0 | 0 | 0% |
| Total | 4,143 | 85,633 | 100% |
| Education | | | |
| Less than High School | 743 | 12,754 | 15% |
| High School | 1,254 | 23,338 | 27% |
| Some College | 987 | 21,018 | 25% |
| College or more | 964 | 25,086 | 29% |
| Missing | 195 | 3,437 | 4% |
| Total | 4,143 | 85,633 | 100% |
| Region | | | |
| Northeast | 586 | 15,703 | 18% |
| Midwest | 1,037 | 22,883 | 27% |
| South | 1,702 | 26,345 | 31% |
| West | 799 | 20,194 | 24% |
| Territories | 17 | 489 | 1% |
| Missing | 2 | 18 | 0% |
| Total | 4,143 | 85,633 | 100% |
| Beginning Tenure | | | |
| Own | 2,295 | 49,454 | 58% |
| Rent | 1,848 | 36,179 | 42% |
| Total | 4,143 | 85,633 | 100% |

Source: JCHS calculations based on 1999-2009 PSID.

Notes:

- Characteristics are as of 1999 with the exception of race/ethnicity and income.
- Race/ethnicity is based on 2009 survey response to take advantage of higher response rate to this survey question.
- Income is average of household income over the entire period in 2011 dollars.
- Hispanics may be of any race. Whites, African-Americans exclude Hispanics.
- Rent includes those reported to pay no cash rent or live in 'other' tenure situation.

Table 4
Net Wealth by Demographic Characteristics
(2011 Dollars)

| Race/Ethnicity | Median Net Wealth | | | Mean Net Wealth | | |
|--|--------------------------|---------|---------|------------------------|---------|---------|
| | 1999 | 2009 | Change | 1999 | 2009 | Change |
| White | 66,200 | 144,500 | 78,300 | 245,800 | 571,400 | 325,600 |
| African-American | 6,800 | 17,400 | 10,600 | 47,900 | 130,900 | 83,000 |
| Hispanic | 14,900 | 30,900 | 16,000 | 64,900 | 139,900 | 75,000 |
| Total | 43,200 | 101,700 | 58,500 | 201,900 | 467,400 | 265,500 |
| Age | | | | | | |
| Under 25 | 3,800 | 23,400 | 19,600 | 16,300 | 87,000 | 70,700 |
| 25-34 | 15,100 | 60,600 | 45,500 | 71,600 | 300,500 | 228,900 |
| 35-44 | 54,700 | 103,800 | 49,100 | 207,000 | 380,000 | 173,000 |
| 45-54 | 134,300 | 182,400 | 48,100 | 357,900 | 798,900 | 441,000 |
| Total | 43,200 | 101,700 | 58,500 | 201,700 | 466,200 | 264,500 |
| Average Income 1999-2009 (2011 Dollars) | | | | | | |
| <\$40,000 | 3,000 | 3,700 | 700 | 26,800 | 57,300 | 30,500 |
| \$40-69,999 | 19,200 | 41,900 | 22,700 | 63,000 | 428,100 | 365,100 |
| \$70-109,999 | 59,400 | 130,000 | 70,600 | 176,200 | 313,100 | 136,900 |
| \$110,000 and up | 200,000 | 418,300 | 218,300 | 484,700 | 952,200 | 467,500 |
| Total | 43,200 | 101,700 | 58,500 | 201,600 | 466,000 | 264,400 |

Source: JCHS calculations based on 1999-2009 PSID.

groups experienced an increase in real net wealth over the decade, in part reflecting the fact that we are tracking a consistent set of households and so capturing the tendency for wealth to accumulate with age.⁸ Gains in wealth are much larger for whites and high income households, while the lowest quartile households are the only group to show essentially no gains in wealth. As a result, differences in wealth by race-ethnicity and income grew wider over the decade. Table 3 also shows changes in mean wealth. Given the skewed distribution of wealth, mean values are much higher than medians and show larger gains, but the relative experience across demographic groups in wealth gains over the decade are similar.

⁸ For example, among all households in our panel median net wealth increased from \$43,200 to \$101,700 over the decade. But if all households surveyed in 1999 and 2009 are considered, net wealth actually declined from \$79,000 to \$65,200. In general, trends in wealth from the overall PSID sample are consistent with findings from other surveys.

Tenure Transitions

A key focus of our analysis is to document the frequency of movements into and out of homeownership both to assess how well households sustained homeownership over this turbulent period and how these changes in tenure were associated with changes in net household wealth. We begin by dividing the sample into those that were owners and renters in 1999. We then categorize households by their tenure at the end of the period, taking into account whether there were any intervening changes in tenure.⁹ The result is the following six categories of tenure transitions:

- *Always own;*
- *Own with interruption,* which includes those who owned in both 1999 and 2009 but had one or more spell as a renter in the middle of the study period;
- *Owner to renter,* which includes those who started as an owner but ended the period as a renter;
- *Rent to own sustained,* which includes those who began as renters but ended as owners;
- *Rent to own not sustained,* which includes those who began as renters, transitioned to owning at some point but ended the period renters; and
- *Always rent.*

Table 5 presents the distribution of households by the tenure transitions over the observation period. One striking aspect of the distribution is that a fairly significant share of households—roughly two-thirds—did not change tenure over the 10 year period of observation. There are also not sharp differences by race-ethnicity or income in these shares, with the second income quartile being slightly less likely to not change tenure (57 percent) and the highest income quartile being less likely to change (76 percent).

Another interesting aspect of the tenure transitions is that despite the upheavals in the housing market over this period a large majority of households (91 percent) that started out as owners were still owners at the end of the period. It is true that the homeownership survival rates were somewhat lower among African-Americans (83 percent) and the lowest income quartile (77 percent), but even among these groups a large majority of 1999 owners also owned a home in 2009.

⁹ During the period covered by our study the PSID was conducted every two years in odd-numbered years. We observe tenure in the year of the survey, so a total of six times from 1999 through 2009. Since we do not observe tenure in even numbered years we may miss some brief switches in tenure, but we assume that periods of owning of less than two years are few in number and so unlikely to substantially bias our estimates.

Table 5
Distribution of Tenure Transitions 1999-2009

| Tenure Change 1999 to 2009 | Race/Ethnicity | | | | Average Income 1999-2009 | | | |
|--|----------------|-------|------------------|----------|--------------------------|-------------------|--------------------|------------------|
| | Total | White | African-American | Hispanic | Under \$40,000 | \$40,000 - 69,999 | \$70,000 - 109,999 | \$110,000 and up |
| Start as Owner | | | | | | | | |
| Always Own | 58% | 64% | 35% | 48% | 27% | 49% | 66% | 81% |
| Own with Interruption | 49% | 55% | 26% | 40% | 17% | 37% | 57% | 74% |
| Owner to Renter | 4% | 4% | 3% | 5% | 3% | 4% | 5% | 4% |
| Start as Renter | | | | | | | | |
| Rent to Own Sustained | 5% | 5% | 6% | 3% | 6% | 7% | 4% | 3% |
| Rent to Own Not Sustained | 42% | 36% | 65% | 52% | 73% | 51% | 34% | 19% |
| Always Rent | 21% | 21% | 19% | 22% | 16% | 25% | 26% | 15% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Key Subtotals | | | | | | | | |
| Share with Stable Tenure | 65% | 66% | 64% | 64% | 67% | 57% | 62% | 76% |
| Share Owned at Some Point, But Rent in 2009 | 10% | 9% | 14% | 9% | 14% | 15% | 8% | 4% |
| Share of Starting Owners Still Owning | 91% | 92% | 83% | 93% | 77% | 85% | 93% | 97% |
| Share of "Rent to Own" groups that own in 2009 | 81% | 83% | 70% | 79% | 69% | 77% | 88% | 91% |

Source: JCHS calculations based on 1999-2009 PSID.

Note: Categories based on starting and ending tenure. Categories may include multiple transitions. For example, 'rent to own sustained' includes households that transitioned in owning more than once over the observation period.

A lower share of renters that transitioned to owning over the period still owned at the end of the period, but even this share was quite high at 81 percent. Again, the rates were somewhat lower for African-Americans (71 percent) and the lowest-income quartile (69 percent), but even for these groups a large majority of those moving into owning were still owners in 2009. Of note, these rates appear to be higher than those reported in previous studies such as Reid (2004) and Haurin and Rosenthal (2004) where only about half of lower-income and minority homeowners were found to still be owners five years after purchasing a home. One difference is that these other studies only considered first time homebuyers, while we do not screen our sample for tenure prior to 1999. Another important difference is that we allow for transitions back into owning for those who have an intervening period as renters. Finally, renters who first bought a home in 2005 or later were observed for fewer than five years in our sample so the mingling of different periods of observation may elevate our estimates. Still, of those that bought in 2001 and 2003, a substantial 77 and 82 percent, respectively, owned a home in 2009.

Overall, 10 percent of all households that owned at some point over the study period were renters in 2009, with the share slightly higher at 14 to 15 percent among African-Americans and households in the bottom half of the income distribution. We do not investigate the factors contributing to these returns to renting and so do not know what share of these transitions were due to financial hardship rather than more voluntary returns to renting. But even absent the costs of a default or foreclosure, the high transaction costs of buying and selling homes means that these owners are less likely to realize financial benefits from owning. But the overall share of households experiencing a transition out of homeownership as of 2009 was a fairly small share of the overall sample.

Tenure Transitions and Changes in Net Wealth

There were large differences in wealth across household by these different tenure trajectories, including both differences in starting wealth and how much was gained over the decade (Table 6). The starting wealth levels in 1999 were strongly indicative of households' future tenure. The wealthiest households in 1999 were those most likely to consistently own over the period, while those who rented the entire time had the lowest wealth. Among owners, those who no longer owned by 2009 had the least wealth in 1999. Renters in 1999 overall had much lower wealth than owners, but those who later became owners and sustained it through 2009 had the highest starting wealth, roughly twice that of those who bought but did not sustain ownership.

Table 6
Net Wealth by Tenure Transition Categories
(2011 Dollars)

| | Median Net Wealth | | | Mean Net Wealth | | |
|---------------------------|-------------------|----------------|---------------|-----------------|----------------|----------------|
| | 1999 | 2009 | Change | 1999 | 2009 | Change |
| Start as Owner | | | | | | |
| Always Own | 139,700 | 238,000 | 98,300 | 353,000 | 755,600 | 402,600 |
| Own with Interruption | 81,000 | 145,900 | 64,900 | 190,000 | 468,100 | 278,100 |
| Owner to Renter | 52,700 | 9,200 | -43,500 | 159,800 | 142,000 | -17,800 |
| Start as Renter | | | | | | |
| Rent to Own Sustained | 8,100 | 94,400 | 86,300 | 38,200 | 298,100 | 259,900 |
| Rent to Own Not Sustained | 3,800 | 4,200 | 400 | 18,300 | 50,800 | 32,500 |
| Always Rent | 1,500 | 1,100 | -400 | 32,500 | 50,500 | 18,000 |
| Total | 43,200 | 101,700 | 58,500 | 201,600 | 466,000 | 264,400 |

| | Median Home Equity | | | Mean Home Equity | | |
|---------------------------|--------------------|---------------|---------------|------------------|----------------|---------------|
| | 1999 | 2009 | Change | 1999 | 2009 | Change |
| Start as Owner | | | | | | |
| Always Own | 64,800 | 108,000 | 43,200 | 97,700 | 170,200 | 72,500 |
| Own with Interruption | 37,800 | 62,900 | 25,100 | 59,300 | 106,200 | 46,900 |
| Owner to Renter | 33,800 | 0 | -33,800 | 71,800 | 0 | -71,800 |
| Start as Renter | | | | | | |
| Rent to Own Sustained | 0 | 50,300 | 50,300 | 0 | 89,500 | 89,500 |
| Rent to Own Not Sustained | 0 | 0 | 0 | 0 | 0 | 0 |
| Always Rent | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 10,800 | 47,200 | 36,400 | 53,800 | 105,600 | 51,800 |

| | Median Non-Housing Wealth | | | Mean Non-Housing Wealth | | |
|---------------------------|---------------------------|---------------|---------------|-------------------------|----------------|----------------|
| | 1999 | 2009 | Change | 1999 | 2009 | Change |
| Start as Owner | | | | | | |
| Always Own | 55,400 | 97,500 | 42,100 | 255,300 | 585,400 | 330,100 |
| Own with Interruption | 26,300 | 45,600 | 19,300 | 130,700 | 361,900 | 231,200 |
| Owner to Renter | 16,200 | 9,200 | -7,000 | 88,000 | 142,000 | 54,000 |
| Start as Renter | | | | | | |
| Rent to Own Sustained | 8,100 | 26,600 | 18,500 | 38,200 | 208,600 | 170,400 |
| Rent to Own Not Sustained | 3,800 | 4,200 | 400 | 18,300 | 50,800 | 32,500 |
| Always Rent | 1,500 | 1,100 | -400 | 32,500 | 50,500 | 18,000 |
| Total | 18,900 | 31,500 | 12,600 | 147,800 | 360,500 | 212,700 |

Source: JCHS calculations based on 1999-2009 PSID.

The largest gains in wealth are experienced by both those who own the whole period and those that transition into owning and sustain it, for whom median wealth increased by \$98,300 and \$86,300 respectively. In keeping with the expectation that movements out of homeownership would reduce the financial gains from owning, owners who experienced a period as renters in the middle of the study period had lower gains in median wealth although a still substantial \$65,000. Meanwhile, those who started out as owners in 1999 but were renters by 2009 experienced a substantial decline in median wealth from \$52,700 to \$9,200. While not all of these losses may be attributable to the movement out of homeownership, this result is certainly consistent with the substantial costs associated with a failed homeownership experience.¹⁰

Those who made the transition from renting to owning but did not sustain it saw essentially no change in wealth – beginning and ending the period with roughly \$4,000 in wealth. Those who rented the entire period also experienced little change in wealth, with the median declining from \$1,500 to \$1,100. Considering that renters that sustain ownership experienced substantial increases in wealth, while both those that failed to sustain owning and those who remain renters on net experienced no change in wealth, from a financial perspective the movement into homeownership could be characterized as “nothing ventured, nothing gained.” Of course, this only considers changes in wealth and does not consider the consequences of losing a home to foreclosure for the psychological and physical well-being of these individuals or the ongoing financial costs of a damaged credit history.¹¹

When we look specifically at wealth in home equity, we find that it represents a substantial share of wealth gains for the median household in all groups who owned in 2009. For those who owned for the entire observation period, the median gain in home equity was \$43,200 against median gain in non-housing wealth of \$42,100. Home equity gains were even more important for those who transitioned from renting to owning and sustained it. The median increase in home equity for this group

¹⁰ The 2009 PSID asks a retrospective question about whether any members of the household experienced a foreclosure on a previously owned home during the 2001-2008 period. There were 99 respondents in our panel that reported a foreclosure during this period, about half of which were owners in 1999 and half renters. Among this group median net wealth fell from \$14,900 to \$1,300 over the period. The moderate starting wealth reflects the mix of owners and renters at the start of the period. The very low ending wealth suggests that foreclosures may lead to more significant declines in wealth than the figures for all those who return to renting suggests.

¹¹ The reported changes are also for the median household and do not take into account the experience of those who fared worse. Among those who started as renters, bought a home and failed to sustain ownership over the period, those at the bottom 10th percentile of wealth change lost \$55,300 over the period. Even among those who moved from renting to owning and still owned in 2009, the bottom 10th percentile saw a fall in net wealth of \$43,100. In short, while the “typical” renter who failed to sustain owning ended the period where they began, some clearly suffered substantial losses. And even among those that sustained ownership, not all experienced gains over the period.

was \$50,300 compared to median gains in non-housing wealth of \$19,300. Those who owned at both the beginning and end of the period but experienced some period as a renter in the middle also had a majority of their wealth gains in home equity, with a median gain of \$25,100 compared to a median gain of \$19,300 in non-housing wealth. The reverse is true for owners who became renters by the end of the period, with losses in home equity accounting for a large share of the declines in net wealth among this group. The median loss of home equity was \$33,800 while the median loss of other wealth was \$7,000.

Timing of Home Purchase and Changes in Wealth

Given the dramatic rise and fall in home prices in many markets between 1999 and 2009 it would be expected that the timing of entry into homeownership would have a substantial impact of changes in net wealth. Table 7 presents estimates of net household wealth from each wave of the PSID over the study period for households that were first observed to have made the transition into homeownership in each survey year. For example, the top row of the table shows the median net wealth among households in each survey year for those who first bought a home in 2001, while the next row shows the same information for those who first bought in 2003, and so on. The year the household was first observed to own is shown in bold. Similar to the findings of Haurin, Hendershott, and Wachter , we find that increases substantially in the first year of observed homeownership. Much of this initial gain likely reflects efforts to accumulate a downpayment to support the move into owning, but will also include some gains in home values in the initial year or two of owning. Wealth gains are also found generally to be larger in the years following home purchase than in the years preceding it.

In fact, the boost from rapidly rising home prices after purchase during the boom is evident in the wealth trends shown. Those who bought in 2003 and 2005 experienced much bigger gains in wealth immediately following home purchase than those who bought in earlier or later years. The median jump in wealth in the first year of owning for these groups was \$57,700 and \$68,100. In comparison, those who bought in 2001 and 2007 had wealth gains in the first year of owning of \$33,700 and \$37,900. Those who were first observed to own in 2009 would have bought since last surveyed in 2007 and so would have been most likely to experience a substantial decline in home values immediately after buying. In fact, these buyers did experience a much smaller increase in net wealth, but they still gained \$17,600. The more modest gains no doubt include actual losses in wealth from the decline in home values, but not enough to overcome whatever increased savings occurred as part of the move into owning. While much smaller than the wealth gains observed for homebuyers in any other period, the gain was still substantially larger than the wealth gains observed for renters between any two periods.

Aside from those who first owned as of 2009, all other cohorts did experience a substantial drop in net wealth between 2007 and 2009, with larger percentage declines the later in the period the household purchased a home. Those who bought in 2001 saw net wealth drop 21 percent while those who bought in 2007 experienced a decline of 32 percent. Since the top panel of Table 7 includes both households that continued to own for the remainder of the period as well as those who moved back into renting, these trends include declines not just in home equity but also from the impact of defaults and foreclosures. In fact, between 77 and 86 percent of each cohort owned a home as of 2009 with other households transitioning back to renting.

As shown in the middle panel of Table 7, those who sustained owning through 2009 generally had higher wealth levels at the end of the period and suffered lower losses of wealth. The bottom panel shows those who failed to sustain owning. The same pattern of a big jump in wealth in the year of first owning is observed, but over the next few years all of these gains are lost as households transition back to renting. By 2009 the medians for all of the cohorts were roughly back to the same wealth levels as in 1999. Thus, the move to homeownership provided a temporary boost to wealth, although the move back to renting did not result in losses in wealth beyond the starting point for the typical household.

Table 7
Trends in Median Wealth Among Renters Transitioning to Owning
 (2011 dollars)

| First Year Reporting | Wealth by Year | | | | | | Share Sustaining Owning |
|----------------------|----------------|---------------|---------------|---------------|---------------|---------------|-------------------------|
| | 1999 | 2001 | 2003 | 2005 | 2007 | 2009 | |
| Owning a Home | | | | | | | |
| 2001 | 10,800 | 44,500 | 53,800 | 83,500 | 93,300 | 73,400 | 77% |
| 2003 | 9,500 | 9,500 | 67,200 | 88,700 | 108,700 | 81,800 | 82% |
| 2005 | 3,800 | 7,100 | 17,100 | 85,200 | 113,400 | 82,400 | 77% |
| 2007 | 4,100 | 4,100 | 3,700 | 6,600 | 44,500 | 30,400 | 86% |
| 2009 | 2,800 | 5,100 | 2,900 | 4,400 | 8,700 | 26,300 | 100% |
| All | 7,000 | 15,900 | 32,300 | 62,700 | 87,500 | 67,600 | 81% |

Households that Sustain Owning

| First Year Reporting | Wealth by Year | | | | | |
|----------------------|----------------|---------------|---------------|---------------|---------------|---------------|
| | 1999 | 2001 | 2003 | 2005 | 2007 | 2009 |
| Owning a Home | | | | | | |
| 2001 | 13,500 | 52,100 | 67,200 | 107,700 | 139,900 | 128,900 |
| 2003 | 9,500 | 9,500 | 61,700 | 97,900 | 135,600 | 100,700 |
| 2005 | 5,700 | 7,100 | 15,900 | 93,300 | 130,200 | 120,600 |
| 2007 | 5,400 | 4,400 | 2,200 | 7,500 | 46,900 | 40,900 |
| 2009 | 2,800 | 5,100 | 2,900 | 4,400 | 8,700 | 26,300 |
| All | 8,100 | 16,500 | 37,900 | 70,300 | 106,300 | 94,400 |

Households that Fail to Sustain Owning

| First Year Reporting | Wealth by Year | | | | | |
|----------------------|----------------|---------------|---------------|---------------|---------------|--------|
| | 1999 | 2001 | 2003 | 2005 | 2007 | 2009 |
| Owning a Home | | | | | | |
| 2001 | 4,600 | 23,800 | 15,100 | 20,400 | 7,300 | 4,200 |
| 2003 | 7,400 | 8,600 | 67,200 | 53,000 | 20,800 | 7,900 |
| 2005 | 2,000 | 6,500 | 18,300 | 55,300 | 58,000 | 1,000 |
| 2007 | 2,200 | 0 | 12,200 | 3,100 | 21,800 | 11,500 |
| All | 3,800 | 11,400 | 21,600 | 27,400 | 19,600 | 4,200 |

Source: JCHS calculations based on 1999-2009 PSID.

Regression Analysis of Changes in Wealth

The tabulations of changes in wealth provide some indication of how different tenure histories contributed to changes in net household wealth, but since a variety of factors contribute to these changes and may also be correlated with homeownership, the tabulations do not isolate the association of homeownership and wealth. A regression analysis of changes in wealth is useful to estimate the association between homeownership and wealth while controlling for these other factors and also provides an opportunity to examine if these associations differ by race/ethnicity or income.

We use a regression model to predict wealth in 2009 as a function of starting wealth, a range of demographic characteristics, geographic location, and the respondents' experience as a homeowner over the observation period. Given the highly skewed distribution of wealth it is necessary to transform wealth into a more linear measure to reduce the influence of extreme values on the estimated coefficients. Past studies of homeownership and wealth using the PSID have used a logarithmic transformation of wealth, but this approach presents challenges in that wealth that is negative or zero are not defined as a logarithm. Di, Belsky and Liu (2007) address this by setting all negative and zero values of wealth to 1, which truncates the independent variable and removes the possibility that failed homeownership could lead to negative wealth positions. Turner and Luea exclude these observations from their model but include a selection measure for those with positive wealth to account for this bias. Following Pence (2006) we estimate a median regression model that employs an inverse hyperbolic sine transformation of wealth that allows for both negative and zero values and reduces the influence of extreme values of wealth on the results.¹²

Of note, unlike previous studies, we do not attempt to account for selection bias in who becomes an owner. In contrast, Di, Belsky and Liu (2007) employ a measure for previous savings behavior to capture some intrinsic differences between renters and those who became owners, Turner and Luea (2010) employ a random effects model, while Mamgain (2011) use an instrumental variable approach. However, none of these studies found a significant impact from these controls on their findings. Given the difficulty of finding an effective control for these selection issues, our approach is to simply assess the association between owning and changes in wealth, while recognizing that the association does not prove a causal link. But our analysis will still help identify whether owning is associated with gains in wealth even in the midst of significant volatility in housing prices and the proliferation of high risk lending.

¹² We do drop the ten largest and ten lowest values of wealth from the sample to remove the influence of these outliers on the results. The sample in the regression model also excludes 22 cases for which race/ethnicity was not known.

In the base model, wealth in 2009 is assumed to be a function of starting wealth, average income over the period, education level, age, changes in marital status, whether children are in the household, education level, and geographic region in 1999. We also include an indicator for whether the household received inheritance or financial gifts at any time during the study period. Our main variable of interest is the number of years spent as a homeowner during the period from 1999 to 2009. Since we only observe tenure every other year we assume that every survey response is equal to two years of owning. This will overstate the years of owning in the first year owning is observed since it is unlikely that the purchase always take place immediately following the previous survey, but this assumption is conservative by assuming the maximum number of years a respondent could have owned. To assess whether the association between homeownership and wealth changes differ by race/ethnicity and income, we then estimate models that first include variables interacting this measure with dummy variables for African-Americans, Hispanics, and then add interaction variables for each of the income quartiles (with the \$70,000-109,999 income band the left out category for comparison). A final model then interacts the years owned with dummy variables indicating whether the respondent fell into the own to rent, rent to own sustained, rent to own not sustained, or own with interruption categories to see what effect these different trajectories have on wealth accumulation.

In general the models fit the data well and results are consistent with expectations. In the base model ending wealth has a positive and statistically significant relationship with wealth in 1999, being in the highest income quartile, living in regions other than the Midwest (the left out category), receiving gifts or inheritance, and getting married during the observation period (Table 8). Negative and statistically significant relationships are found with being in the two lower income quartiles, being African-American or of 'other' race, having less than a college degree or higher in education (the left out category), being younger than 45-54 in 1999 (the left out category), and getting divorced or having children. There is also a significant and positive association between changes in wealth and each additional year spent as a homeowner. When evaluated at the sample median wealth of \$69,200, each year of owning is found to increase wealth by \$9,473. This result is very close to the findings of both Di, Belsky, and Liu (2007) and Turner and Luea (2009) reviewed above.

Table 8
Median Regression Model Results
Marginal Effects of Independent Variables

| Variable | Model 1 | Model 2 | Model 3 | Model 4 |
|---|----------------|----------------|----------------|----------------|
| Constant | 91,600 | 79,300 | 84,000 | 82,100 |
| Wealth 1999 | 2.3 | 2.3 | 2.4 | 2.5 |
| Income Quartile 1 | -43,900 | -44,800 | -57,300 | -58,100 |
| Income Quartile 2 | -23,500 | -22,900 | -38,100 | -33,700 |
| Income Quartile 4 | 38,300 | 38,800 | 91,100 | 79,900 |
| African-American | -20,800 | -6,000 | 1,300 | -700 |
| Hispanic | -5,600 | -2,100 | -1,500 | 4,000 |
| Asian | 15,200 | 73,800 | 35,600 | 6,200 |
| Other Race | -27,900 | -38,600 | -26,100 | -25,200 |
| Northeast | 14,600 | 16,700 | 15,300 | 12,300 |
| South | 10,400 | 11,000 | 10,000 | 10,300 |
| West | 17,000 | 18,100 | 19,000 | 17,300 |
| Other Region | 50,100 | 59,000 | 42,900 | 49,300 |
| Less than High School | -29,800 | -28,500 | -27,400 | -21,900 |
| High School | -23,800 | -21,900 | -21,200 | -18,200 |
| Some College | -20,900 | -20,700 | -21,200 | -18,900 |
| Missing Education | -9,900 | -10,400 | -7,800 | -4,800 |
| Age under 25 | -11,700 | -6,600 | -4,400 | -7,700 |
| Age 25-34 | -7,000 | -6,700 | -6,200 | -4,800 |
| Age 35-44 | -7,700 | -6,800 | -4,400 | -3,100 |
| Always Married | -5,700 | -5,600 | -3,800 | -6,600 |
| Got Married | 14,600 | 14,700 | 13,500 | 3,900 |
| Got Divorced | -27,800 | -28,700 | -28,000 | -13,000 |
| Has Children | -10,800 | -11,500 | -12,500 | -10,800 |
| Receive Inheritance or Gift | 7,500 | 5,700 | 6,400 | 7,800 |
| Years Owned | 9,500 | 10,500 | 10,000 | 9,300 |
| Years Owned * African-American | | -2,100 | -3,100 | -2,900 |
| Years Owned * Hispanic | | -100 | -500 | -1,500 |
| Years Owned * Asian | | -5,500 | -2,300 | -500 |
| Years Owned * Other Race | | 2,500 | 1,400 | 700 |
| Years Owned * Income Quartile 1 | | | 1,900 | 2,900 |
| Years Owned * Income Quartile 2 | | | 1,700 | 1,500 |
| Years Owned * Income Quartile 4 | | | -4,800 | -3,700 |
| Years Owned * Own with interruption | | | | 1,400 |
| Years Owned * Own to Rent | | | | -13,700 |
| Years Owned * Rent to Own Sustained | | | | 3,600 |
| Years Owned * Rent to Own Not Sustained | | | | -10,500 |
| Number of observations | 4,101 | 4,101 | 4,101 | 4,101 |
| Pseudo R2 | 0.407 | 0.408 | 0.410 | 0.431 |

Source: JCHS calculations based on 1999-2009 PSID.

Note:

Values statistically significant at 5 percent level shown in bold.

The transformation of wealth was based on a value of theta of 0.0001 based on maximum likelihood estimation.

Marginal effects evaluated at sample median wealth in 2009 of \$69,200.

To be consistent with the transformation of 2009 wealth, an inverse hyperbolic sine transformation was also applied to the 1999 wealth variable so that the marginal effects of this coefficient are not comparable to that shown for other variables.

When interaction terms are added for years owned and the race/ethnicity variables, most of the remaining estimated coefficients are similar to the base model, although neither the African-American variable nor the two youngest age categories are still statistically significant. The results do find that homeownership is associated with lower wealth gains for African-Americans and Asians, but even with these adjustments to the base association owning is still found to be associated with a fairly large increase net wealth for these groups. Specifically, combining the base tenure variable with the interaction term, African-American homeowners are estimated to see increases of wealth of \$8,474 compared with \$10,542 for white homeowners. The coefficient on the variable interacting Hispanics with years owned is not statistically significant, but is close to zero in any event.

Model 3 then adds interaction terms for income quartiles. Including these variables reduces the significance of the remaining age variables but other coefficients remain similar. This model finds that the two lowest income quartiles actually had modestly higher increases in wealth from each year of homeownership while the highest income quartile had much lower returns. This result may be an indication that households owning higher valued homes had more to lose in the downturn. When the interaction terms with income are added, the interaction term for African-Americans shows somewhat lower gains for owners. Each additional year of owning for an African-American is now estimated to add \$7,006 to wealth, compared to \$9,994 for whites.

Finally, Model 4 adds interaction terms for the different categories of tenure transitions over the period. Consistent with the findings from the tabulations, households that fail to sustain homeownership do not realize any financial benefits from owning. Those who start as renters and return to renting by 2009 are found to lose about \$1,142 for each year of owning. Those who start as owners but end as renters are found to lose \$4,416 per year of owning. Renters who make a successful transition to owning are actually found to gain even more from owning—\$12,935 for each year compared to \$9,321 for those who owned the whole period. Surprisingly, owners who experienced a period of renting also gained more from each year of owning than the average owner (\$10,686).

The coefficients on the other interaction terms for race/ethnicity and income are similar in this model. African-Americans are still found to benefit from each year of homeownership, but at a lower rate than whites (\$6,457). The coefficient on Hispanic owners also suggests that the gains to Hispanics are less than for whites and slightly higher than for African-Americans, but these differences are not statistically significant. Households in the lowest-income quartile are found to have slightly higher gains (\$12,239) while those in the highest income quartile have lower gains (\$5,668).

Overall, the results of the regression models are highly consistent with the findings from the previous literature examining the association between homeownership and wealth gains—despite the differences in market conditions that prevailed during the 2000s. Overall, owning a home is consistently found to be associated with increases of roughly \$9,000-\$10,000 in net wealth for each year a home is owned. Also consistent with earlier studies, African-Americans are found to benefit less from owning a home, but each year of owning is still associated with gains in net wealth of between \$6,000 and \$8,000, which is substantial considering the generally low levels of wealth among African-Americans generally. In contrast to earlier studies, however, we find that lower-income households actually had slightly higher gains from owning compared to households in the third income quartile, while the highest income households had much lower gains. This difference may well reflect the fact that higher income households owned higher valued homes and so suffered greater absolute losses in wealth when house prices dropped.

Conclusions

Even after the tremendous decline in housing prices and the rising wave of foreclosures that began in 2007, homeownership continues to be a significant source of household wealth, and remains particularly important for lower-income and minority households. As has become painfully clear, owning a home is not without risk. But even during a time of excessive risk taking in the mortgage market and extreme volatility in house prices, large shares of owners successfully sustained homeownership and created substantial wealth in the process (at least through 2009). While African-American and lower-income households were somewhat less likely to sustain homeownership, these groups also experienced sizeable gains in net wealth on average that was associated with owning, while renters saw few gains. Owners who failed to sustain homeownership did suffer substantial loss in wealth, but much of the wealth was associated with the move into homeownership, so these households essentially fell back to their initial wealth levels. At least in terms of household wealth, failed attempts at owning do not appear to leave the typical household worse off than when they started.

Our analysis highlights two primary mechanisms by which owning appears to generate wealth over a decade long period. Most obviously, owners can accrue substantial wealth through appreciation in home prices, as evidenced by the outsized gains realized among those who first became owners in the 2003 and 2005 PSID waves as home prices took off. But fluctuations in home prices are a two-edged sword and a significant share of these gains were subsequently lost when the bottom fell out of the market. The other mechanism by which owning is associated with increases in wealth is through the

large increase in savings that occurs when households make the move to owning. This is evidenced among those first buying between 2007 and 2009 who, despite the troubled housing market, had gains in net worth of \$18,000, more than tripling the amount they held before buying a home. Over a longer period of time the paydown of principal will further add to these gains, although the period studied was too short to capture these gains. But this forced savings aspect is arguably an important way that owning leads to wealth creation over the long run since it is at work in all market conditions. While studies simulating the financial returns to owning and renting find that renting is often more likely to be beneficial, in practice renters rarely accumulate any wealth. In no small part this seems traceable to the difficulties households face in trying to save absent either a clear goal or an automatic savings mechanism.

Of course, our examination of the PSID does not attempt to account for selection bias in who becomes a homeowner. As a result, our results cannot attribute a causal link between owning a home and wealth increases, just that there is an association. Our analysis does control for a range of household attributes that are associated both with the ability to save, including starting wealth, age, educational status, income, and marital status. Still, there may still be differences between owners and renters in personality and motivation that are unmeasured by available data and that make important contributions to the differences between these groups. But if homeownership itself were a drain on finances – or even neutral – we would not expect to find such a strong association between owning and wealth gains while controlling for other household characteristics. While it may still be the case, as suggested by the simulation studies, that under the right conditions renters would come out ahead of owners, in practice we do not observe these outcomes. And while owners could potentially fare better financially if they were to rent, there is still strong evidence that owning is financially beneficial given the strong positive association with wealth gains.

It is also important to bear in mind that the desire to own a home is not solely—or even primarily—motivated by financial goals. Homeownership’s appeal lies strongly in associations with having control over one’s living situation, the desire to put down roots in a community, and the sense of efficacy and success that is associated with owning (Reid, 2013; Drew and Herbert, 2012). If the only reason to support homeownership were to foster wealth, than other means for encouraging savings in a more safe and secure way would be best. But the fact that homeownership is strongly preferred for a host of other reasons by most individuals as they age provides further support for policies to promote homeownership out of equity concerns to help individuals and families achieve this important goal. The social benefits of homeownership lend further credence to the value of supports for homeownership

(Rohe and Lindstrom, 2013). But these efforts need to be cognizant of the very real risks involved and take steps to ensure that when households take the plunge to buy a home they are likely to be able to sustain homeownership and thus realize the financial benefits it offers.

Still, it is inevitable that some owners will not succeed. A key challenge for policymakers is to assess what degree of risk of failure is appropriate. From a wealth perspective, the opportunity to realize fairly substantial gains if owning is maintained against the risk of essentially falling back to starting wealth levels if it is not suggests that there is reason to err on the side of fostering attempts at owning. But the calculation also needs to factor in the non-financial costs of failure for these families and individuals as well as impacts on the surrounding community. To avoid tilting the playing field too sharply towards homeownership and enticing those with low odds of success toward this goal, it is important that housing policies are more tenure neutral, providing supports for renters and owners alike to find affordable, good quality housing. The fact that homeownership will not be appropriate or desirable for all low-income households also argues for a broader range of policies to promote savings and wealth accumulation among those of limited means.

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