

Emerging Cohort Trends in Housing Debt and Home Equity

George S. Masnick, Zhu Xiao Di, and Eric S. Belsky

Harvard University

Abstract

Financial and market conditions in the 1990s caused a sharp increase in the housing debt (in constant dollars) of households now approaching or just past normal retirement age. Households now in middle age have also set new records for housing debt and will likely continue to carry high housing debt when they reach old age in 10 or 20 years.

In the future, this housing debt burden is likely to lead to financial and housing adjustments that suggest a qualitative change in behavior when these households reach the later stages of their working life. Many will need to work longer to service housing debt. When facing a life-cycle downturn in annual income, households will be increasingly motivated to tap into their home equity, both by borrowing, for those who stay in their homes, or by downsizing and liquidating some equity, for those who choose to move.

Keywords: Demographics; Homeownership; Mortgages

Introduction

During the 1990s, an important trend—one that has been largely ignored by researchers—emerged in the mortgage borrowing behavior of the nation's homeowners. Homeowners by 2000 had taken on significantly more debt than owner households just 10 years earlier. After adjusting for inflation, the total debt for owner households between 1990 and 2000 increased from \$2.4 trillion to \$4.1 trillion. Average (mean) debt per owner household grew by 45 percent over the decade, from \$40,600 to \$58,700 (in constant 2001 dollars). Median debt grew by a larger amount, from \$13,700 in 1990 to \$33,100 in 2000.

For decades, homeowners appeared to conform to the predictions of the life-cycle theory of consumption in middle age and late middle age only to apparently flagrantly defy the theory in old age. Life-cycle theory predicts that when people are young, they will finance consumption to offset initially lower returns from skills and experience in the labor force and to meet demands for

cash to build families and acquire assets. They pay off debts in middle age as their incomes peak and then tap into their accumulated assets to fund their consumption in old age (Ando and Modigliani 1963). While acknowledging that some individuals have a bequest motive and that evidence points to large quantities of wealth transfers as bequests (Gale and Scholz 1994; Kotlikoff 1988), the theory holds that most of the assets of the average individual will be spent down before death. However, contrary to theory, a series of studies by Venti and Wise (1989, 1990, 2000) have documented that nearly all homeowners have held on to most of the equity accumulated in their homes through their old age and that only a few tap into it before they die. The exceptions are the homeowners who traded down (but still typically lived free of mortgage debt) and those forced by infirmity to move to nursing homes.¹

In the not-so-distant past, the burning of a mortgage that was finally paid off was often an occasion for celebration because out-of-pocket monthly housing costs dropped significantly and households received what amounted to a long-term windfall in their monthly budget. This drop in monthly housing costs was especially important to householders entering late middle age, when incomes typically begin to decline. Today, middle-aged and elderly owners who have paid off their mortgages spend about one-third of what those with a mortgage spend per month on housing, thus saving an average of about \$600 a month (U.S. Bureau of the Census 2003b).

During the late 1980s and 1990s, a growing share of homeowners opted not to strive to pay off their mortgage at mid-life. Instead, many either refinanced their mortgages to take out some of their accumulated home equity, thereby incurring larger outstanding balances, and/or extended the time it takes to retire the loan in order to reduce monthly payments. This unprecedented growth in housing debt among mid-life and older Americans has resulted in a trend that has been largely ignored by researchers (Gist and Figueiredo 2002a, 2002b). According to data from the Survey of Consumer Finances (SCF), whereas only 43 percent of owners aged 55 to 64 did not own their home debt free in 1983 (Avery et al. 1984), fully 64 percent of owners in this age group had not paid off their mortgage in 2004 (Board of Governors of the Federal Reserve System 2004). And it is not only older households that are bulking up on housing debt as never before. Younger homeowners, even more than older ones, increased the amount of mortgage debt they are carrying, placing them on higher cohort trajectories for lifetime mortgage debt than previous generations. There has been an upward shift in mortgage debt payments as a share of

¹ About 3 percent of households headed by a member aged 70 or over live in homes with on- or off-site nursing service. See table 1 in Schafer (1999).

household income for all cohorts, even though the shift has been the greatest for the elderly cohorts.

The growth in mortgage debt and its substitution for consumer debt

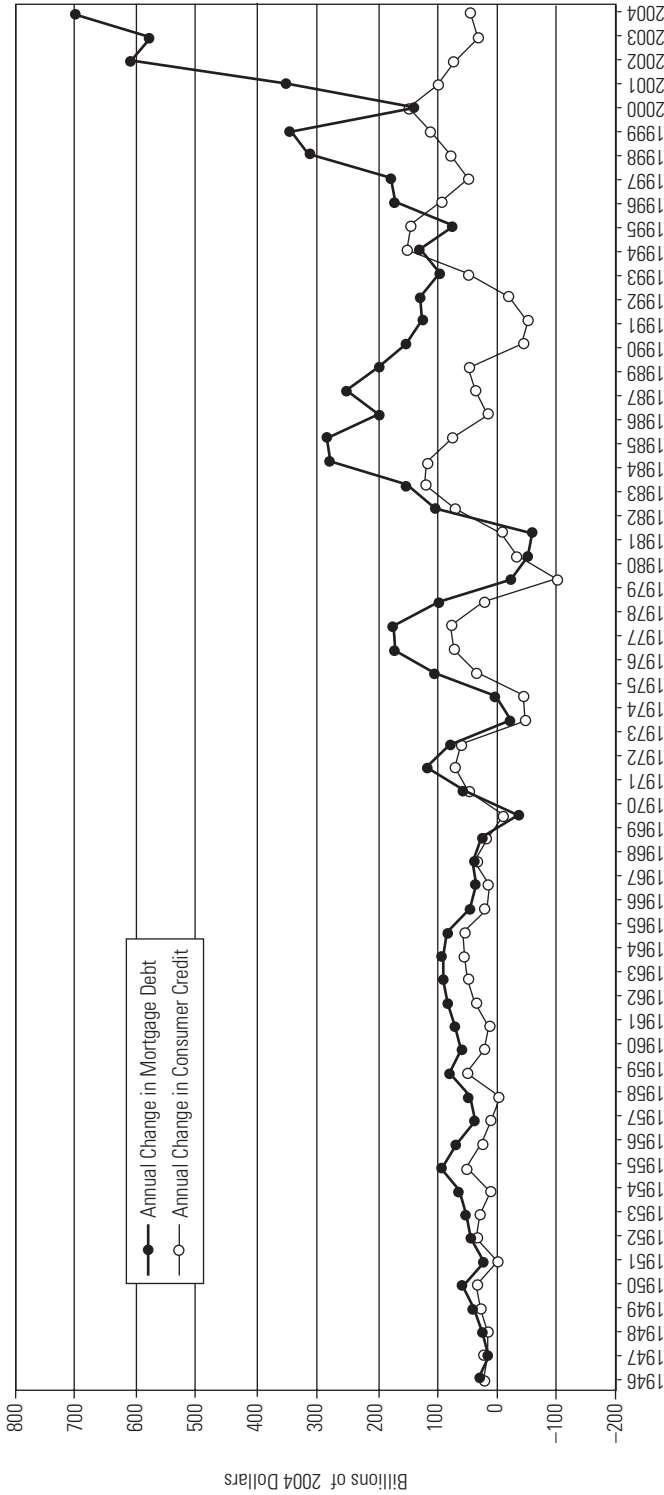
The rapid growth in housing debt that emerged in the late 1980s and 1990s exploded after 2000, as corroborated by the Flow of Funds Data compiled by the Federal Reserve Board (Board of Governors of the Federal Reserve System 2006). In figure 1, housing debt and general consumer debt are plotted for the period 1946 to 2004.² While these data do not allow the detailed demographic decomposition that the SCF data afford, they are released quarterly and go back farther.³ Except for a brief downturn in new mortgage activity during the 2000 recession, net new mortgage debt has been trending sharply upward since the mid-1990s, with the largest increases since 2000. Between 2000 and 2004, cumulative net additions to total mortgage debt were \$2.2 trillion. By way of perspective on the magnitude of this increase, the total U.S. national debt in 2005 was \$7.7 trillion.

Figure 1 also shows the apparent substitution of mortgage debt for general consumer debt that has taken place since the mid-1990s. Before that time, the annual changes in the two sources of debt rose and fell more or less in tandem in response to economic conditions and interest rates. But after the mid-1990s, housing debt soared while new general consumer debt remained relatively flat or even trended slightly downward. Strong house price appreciation, together with the lowest mortgage interest rates in 40 years, motivated homeowners to extract record amounts of equity from their homes. Indeed, cash-out refinancing and second mortgage borrowing have soared since 2000 (Belsky and Prakken 2004). That cash allowed homeowners to either avoid taking on more consumer debt or to pay down the consumer debt they already had on the books. As discussed later, the substitution of mortgage debt for consumer debt has been prompted by changes in the tax law enacted in 1986, lower rates charged on secured debt, extension of mortgage credit to subprime borrowers beginning in the mid-1990s and accelerating rapidly in the first half of the 2000s, and more sustained outreach by home equity lenders. Since 2000 especially, it appears that the trends in mortgage debt and consumer debt have moved in opposite directions.

² Housing debt includes all debt from first mortgages, second mortgages (home equity loans), and home equity lines of credit, while general consumer debt includes most credit market instruments, including personal loans, automobile loans, and credit card debt.

³ For a variety of reasons, Flow of Funds and SCF report slightly different totals for debt and housing value (Antoniewicz 1996).

Figure 1. New Mortgage Debt Has Increased Dramatically



Source: Board of Governors of the Federal Reserve System 2006.

Housing values have increased sharply since 2000. The median sale price of an existing single-family home increased from \$148,170 to \$184,100 between 2000 and 2004—an increase of 25 percent (Joint Center for Housing Studies 2005). While many existing homeowners who have not borrowed against their equity have seen it rise dramatically since 2000, others have entered the housing market very recently and are hoping that the upward trend in values will continue. Still others have borrowed against their rising equity in ever-greater numbers, thus increasing their housing debt and reducing their equity gains. A recent report highlighting the results of the 2004 SCF notes that from 2001 to 2004, “the amount of debt relative to total assets increased markedly, and the largest part of that increase was attributable to debt secured by real estate” (Bucks, Kennickell, and Moore 2006, A1). How these early 2000s trends in debt and value translate into longer-term accumulation of equity will depend in large part on how well the recent gains in housing value hold up and progress for the balance of this decade and beyond. Any fall in house values could leave many recent home buyers with negative equity.

Low mortgage interest rates sparked a surge in refinancing that has resulted in longer average terms as borrowers restarted the amortization clock on new loans. In addition, borrowers were apt to cash out on home equity by replacing their existing mortgages with new mortgages that had higher outstanding balances. According to a series of monthly surveys conducted throughout 2001 and the first half of 2002, about 74 percent of such owners took out mortgages with a longer maturity, while only 17 percent of refinances were of shorter duration. The net effect was that terms lengthened an average of 6 years after refinancing. The surveys also indicated that fully 45 percent of the owners who refinanced took cash out from their home equity, up from 35 percent in 1999 (Brady, Canner, and Maki 2000; Canner, Dynan, and Passmore 2002).

The recent growth in mortgage debt-to-income ratios

It is one thing to see an increase in mortgage debt when interest rates fall to historically low levels and quite another to see an increase in the share of income that households allocate to mortgage debt payments for their primary residence. In the former case, declining rates reduce interest costs and allow homeowners to take on more debt without increasing their monthly carrying costs. The latter case reveals a willingness to allocate more of the household budget to mortgage debt payments. Perhaps most significantly, then, despite the recent favorable trends in incomes and interest rates, mortgage borrowers between 1989 and 2004 dramatically increased the share of their income that the mortgage on their primary residence consumed (the top two lines of figure

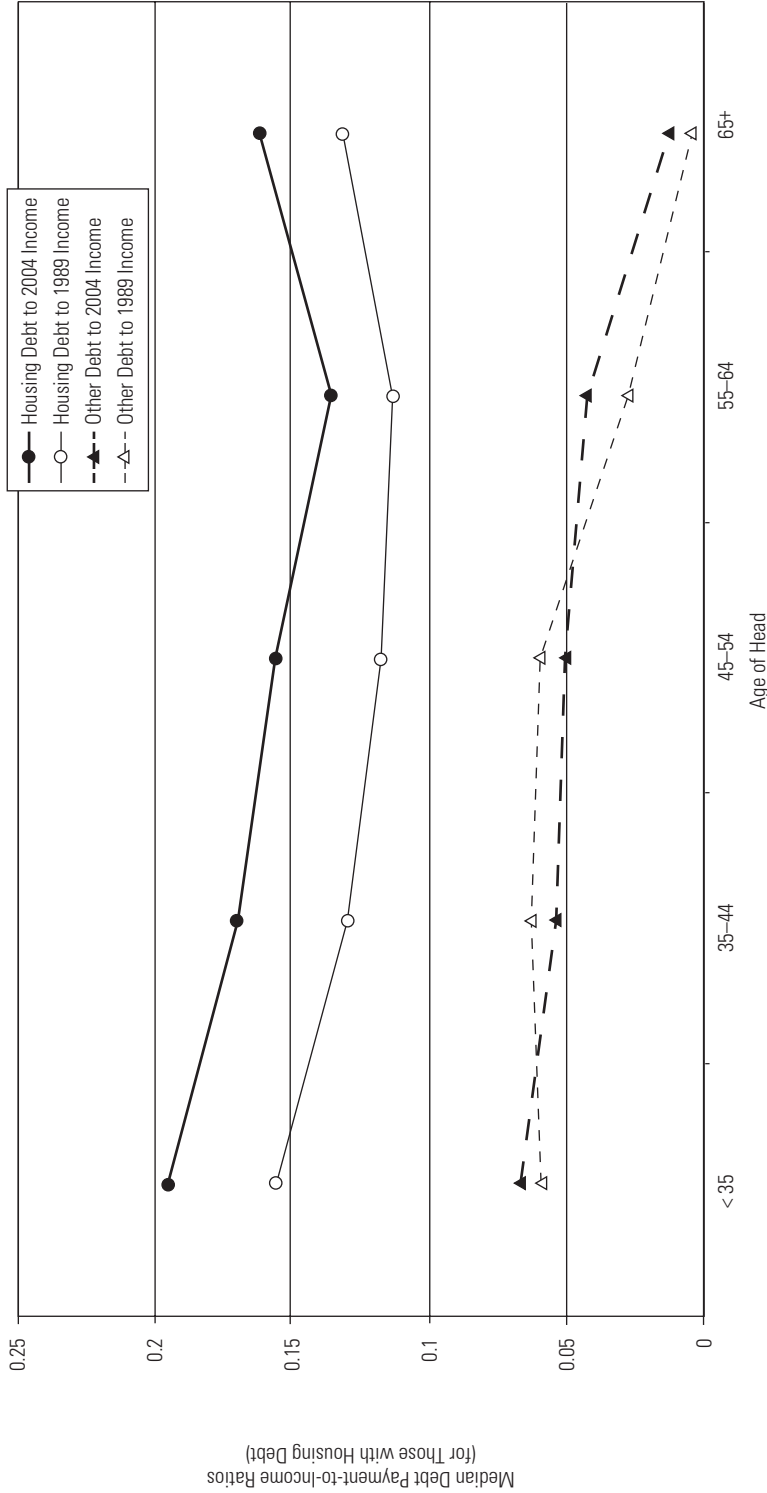
2). This increase has taken place across all age groups and has come at a time when homeowners have also been forced to deal with rising property taxes, insurance fees, maintenance and repair costs, and heat and utility bills.

As also shown in figure 2 (the bottom two lines), the largest fall in other debt-to-income ratios has been for 35- to 44-year-olds and 45- to 54-year-olds, suggesting that these are the age groups where the shift of general consumer debt to mortgage debt has been the greatest. Almost all debt payments for those over 65 are for mortgage debt, but because we have assigned debt for second and third homes to the “other debt” category, the modest increase in nonhousing debt-to-income ratios for the two oldest age groups probably reflects the increase in second home purchases observed in the 1990s (Di, McArdle, and Masnick 2001). In short, then, those near traditional retirement age are carrying more mortgage debt on their primary residences and shelling out more of their income to make mortgage payments, but do not appear to be doing so because they are primarily shifting consumer borrowing to mortgage borrowing. Indeed, if mortgage debt on second homes were added to figure 2, the tendency for older Americans to carry more mortgage debt than before would be even larger.

There are many reasons for the rapidly growing housing debt among those reaching late middle age. First, what was widely perceived by previous generations as an illiquid asset is now increasingly being viewed as relatively liquid. With house values growing, homeowners are more inclined than in the past to tap into their equity by taking out second mortgages and lines of credit or by refinancing their first mortgage. When falling interest rates favor refinancing as the preferred means of cashing out equity, as they did in 1992 and mostly did between 2000 and 2003, the result is often replacing a loan with a shorter remaining term with a new 20-, 25-, or 30-year mortgage (Brady, Canner, and Maki 2000; Canner, Durkin, and Luckett 1998; Canner, Dynan, and Passmore 2002). Middle-aged owners moving from one house to another are doing much the same thing by trading a mortgage that might have had only 5 or 10 years to run for a new mortgage with a longer term. Lower interest rates have meant that for all movers, more money can be borrowed by increasing their monthly payment very little if at all, thus making it easier to either renovate their newly acquired home, buy a more expensive one than they occupied before, or even buy a second home. While for those homeowners where higher mortgage debt has not translated into larger monthly payments, for most of them, it has resulted in a longer payback period.

In addition to refinancing mortgages to capture equity and/or lower monthly payments, homeowners are now using home equity loans and lines of credit to borrow against equity at record levels and fund a variety of household

Figure 2. Housing Debt on Primary Residence versus Other Debt: Payment-to-Income Ratios by Age: 1989 to 2004



Source: Board of Governors of the Federal Reserve System 2004.

Note: Housing debt includes first and second mortgages and home equity lines of credit on primary residences, including cases with income of \$100 or more. Other debt includes payments for second homes.

expenses. The reason is the favorable interest charged on such secured loans, the longer payback period, and the tax advantages of shifting general consumer borrowing into housing debt (Belsky and Prakken 2004). Indeed, in the first few years after the passage of the Tax Reform Act of 1986, which retained the deduction for mortgage interest but eliminated the deduction for other consumer credit, home equity lending increased sharply and has continued to go up.

Together with the change in the tax law in 1986 (the effects of which are generally underappreciated), the following changes in mortgage markets that affect the liquidity of home equity have also contributed to the emerging trend toward higher housing debt in old age:

1. During the past decade and a half, borrowing against home equity has become much easier, and costs have dropped. In addition to declines in interest rates from their record highs in the early 1980s to 40-year lows in the early 2000s, the cost of mortgage originations has been trimmed as a result of the rise of secondary mortgage markets and improvements in information technology.
2. Legal impediments that discouraged lenders from offering home equity products were removed in the late 1980s (Eugeni 1993).
3. The growth in subprime lending has permitted owners who would previously have been denied the opportunity to refinance or borrow against home equity the chance to do so. According to LoanPerformance® (2006, together with unpublished estimates of loans provided to the authors), subprime lending has grown from only a few percent of all originations in the 1990s to about 20 percent by 2005.
4. Specialized lenders have evolved to serve the demand for home equity loans and lines of credit that rely in large part on mass mailings and mass media to alert borrowers to the opportunity to tap their home equity by refinancing.
5. Finally, the recent strong increases in housing values have created large amounts of equity for many owners and at the same time created expectations that equity will continue to build in the future.⁴ It is important to note, however, that the cohort trends for 1989 to 2004 also apply to the 1989–2001 period, which ended before the recent record runup of price appreciation began nationally in 2001.

⁴ For further discussion of the phenomenon of carrying more mortgage debt and senior homeowner behavior in mortgage refinancing, see Lupton and Stafford 2000, Kim-Sung and Hermanson 2003, and Nothaft and Chang 2004.

On the demographic and socioeconomic side, later age at marriage, divorce and remarriage, the rise of the two-earner household, declines in the real earnings of men and the increasing share of total household income contributed by women, shifts in the structure of labor markets, increasing life expectancies and returns to labor supplied by older people, changes in the way retirement is funded, increases in the cost of education and health care, and rising standards of living in general and of housing consumption in particular are all factors that have likely reinforced the trend toward higher mortgage debt late in life.

For many in the baby boom cohort, later ages at marriage and a higher proportion of all marriages that are remarriages for one or both spouses mean that new homeownership debt has been taken on later and later in life. With today's delayed and serial patterns of family formation, home buying takes place at ages when incomes are higher, allowing the assumption of greater housing debt. If most mortgages assumed in mid-life or later are taken at a standard fixed-rate 20-, 25-, or 30-year term, those taken out by older couples and by older singles will still be unpaid as retirement approaches.

Against this background, our article delves more deeply into the age and family type-specific cohort trends and differences in housing debt, house values, and home equity accumulation. Our study extends previous research using SCF data (Aizcorbe, Kennickell, and Moore 2003; Avery et al. 1984; Avery, Elliehausen, and Kennickell 1987; Bucks, Kennickell, and Moore 2006; Di 2001; Kennickell and Shack-Marquez 1992; Kennickell and Starr-McCluer 1994; Kennickell, Starr-McCluer, and Sunden 1997; Kennickell, Starr-McCluer, and Surette 2000). We demonstrate that cohorts about to retire have taken on significantly higher housing debt later in life than the cohorts that preceded them in the age structure and that younger cohorts at mid-life are now on track to have still higher mortgage debt when they reach retirement age in 10 or 20 years. This focus on specific cohort trends in housing debt and home equity accumulation has not been widely discussed in the literature.

Cohort methodology

Our study primarily uses SCF data to track synthetic cohorts over time. We tabulate the data on housing debt, housing value, and home equity by age of householder at two points in time, presenting the data in a way that allows us to track 10-year age cohorts as they move between 1990 and 2000. The use of 10-year age groups to define our cohorts requires us to select data points at 10-year intervals. While it might have been preferable to develop cohort trajectories for a longer time period, say starting in 1980, this is not possible because

of fundamental data limitations.⁵ We use weighted averages of the 1989 and 1992 data to get 1990 estimates and weighted averages of the 1998 and 2001 data to derive the 2000 estimates. This allows us to develop estimates for age groups that line up with other data from the 1990 and 2000 censuses to which we refer.

In addition to age cohorts, we examine differences between married and unmarried owners. Cohort trajectories of median housing debt, median housing value, and median home equity are studied by graphing the trends. By following synthetic age cohorts across data sets over time, we can both examine changes over the life course for specific cohorts as they aged between 1990 and 2000 (slope of the lines) and also look for important differences in trajectories between cohorts (separation of the lines) as well.

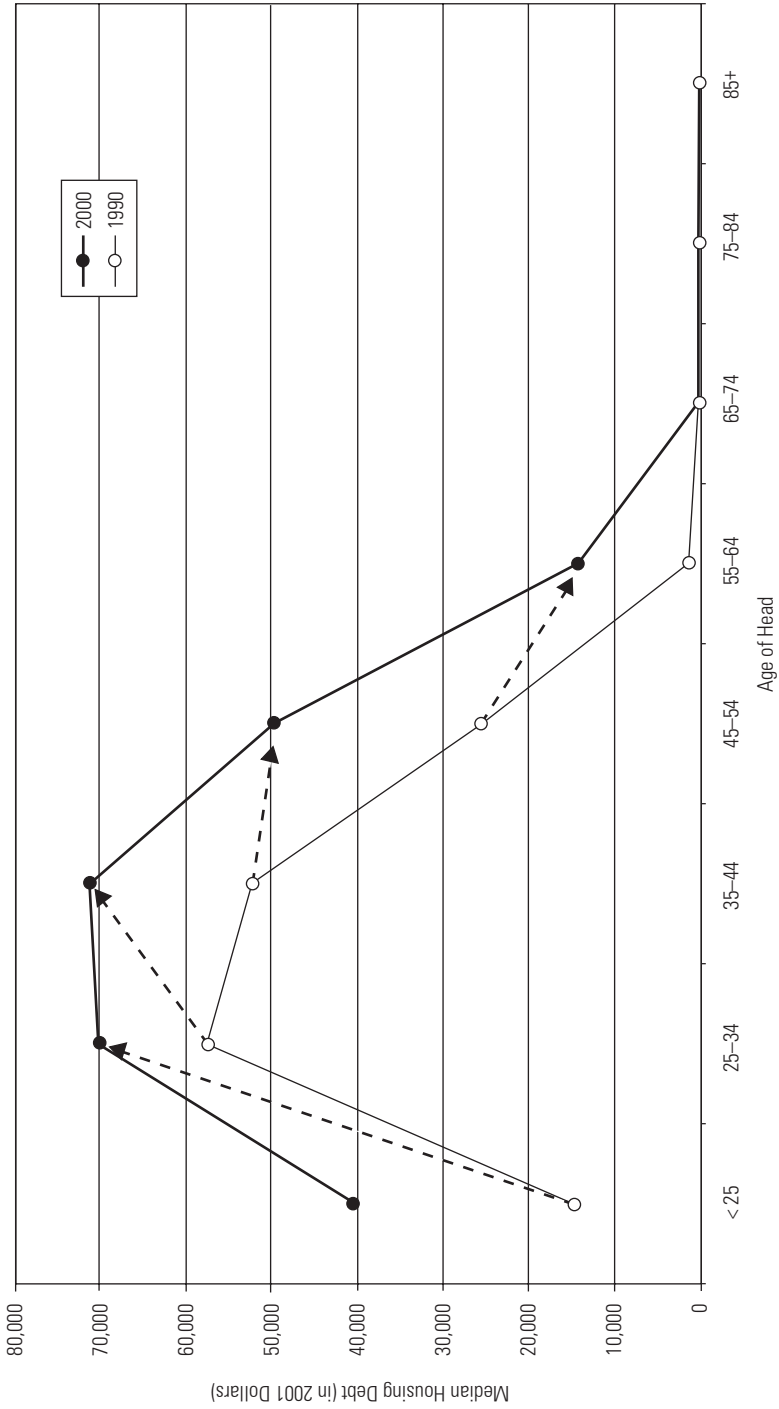
This methodology can be illustrated by examining the trends between 1990 and 2000 in median housing debt by age of owner. Between 1990 and 2000, median housing-secured debt moved significantly upward across all age groups of owner households except the very oldest, where the majority were debt free (figure 3). Some of the largest relative increases in median housing debt over the 1990s took place among middle-aged owners, with total debt for 55- to 64-year-olds becoming significant and for 45- to 54-year-olds doubling to almost \$50,000. While it appears from the cross-sectional data for either 1990 or 2000 in figure 3 that total household debt peaks and then declines sharply after age 35 to 44, when cohorts are followed over time (dotted lines with arrows), it is not until age 45 to 54 that debt begins to decline, and this decline is much more gradual than the period data imply. Translating the cross-sectional period data for two points in time into cohort trends as illustrated in figure 3 is the core of our methodology. The data on which the figures are based are contained in table A.1. We now examine these cohort trends in greater detail.

Cohort trends and differences in housing debt

Using a standardized graphical format, we represent each cohort by a separate line that begins with a circle (median value at age x in 1990) and ends with a diamond (median value when the cohort is age $x+10$ in 2000). The lines in

⁵ The first generation of SCF surveys was begun in 1946 and discontinued in 1970. The modern era of the SCF began in 1983 with surveys undertaken every three years. However, both the 1983 and the 1986 surveys were evolving efforts, and it was not until 1989 that a more or less standard methodology and survey were developed. Because of the irregular survey dates and methodologies, it is impossible to estimate 1980 data that would allow us to get a longer view of cohort trends in the variables we measure. For additional information about the history of the SCF, see Avery, Elliehausen, and Canner 1984.

Figure 3. Median Total Housing-Secured Debt on Primary Residences for All Owner Households by Age of Head



Source: Board of Governors of the Federal Reserve System 2004.

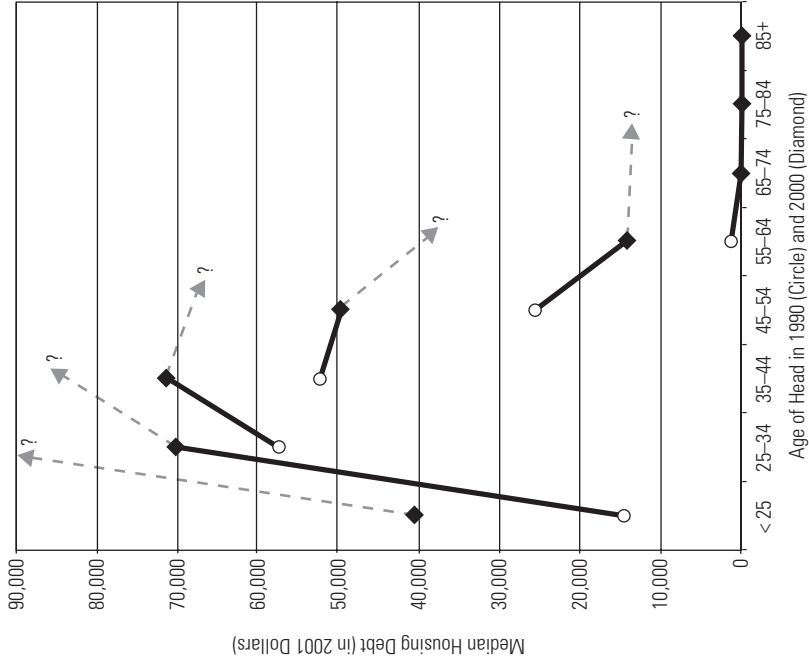
figures 4 and 5, when followed from left to right, represent changes in median household debt for an age cohort over the 10-year period from 1990 to 2000. Upward slanting lines represent increases in cohort median debt, while downward slanting lines represent declines. A value of zero means that a majority of owners in a cohort have no housing debt. Separation between the lines indicates cohort differences. When the lines are compared from right to left, that is, from the oldest cohorts to the youngest, the separation identifies whether younger cohorts have higher trajectories (on track to be above the older cohorts), lower trajectories (on track to be below the older cohorts), or are following similar paths (with the segments forming a more or less continuous line). All three patterns can be identified in the figures below.

In 1990, median housing debt for 45- to 54-year-olds was just over \$25,000 in 2001 dollars. In 2000, the next cohort that moved into the 45–54 age group (the oldest half of the baby boom generation) carried a median housing debt of about \$50,000. Extrapolation of these cohort trajectories forward 10 years suggests that the next group that will be 45 to 54 years old in 2010 (the youngest of the baby boomers) may well have a median housing debt of about \$70,000 based on debt levels for this group in 2000 when they were 35 to 44 and the likely changes in debt as they age (figure 5).⁶ Such an extrapolation is admittedly a crude measure, but it does provide an indication of what will likely take place if the cohort stays on its current higher path. What actually occurs, of course, will be primarily influenced by both interest rates and the rate of house price appreciation during the next decade. But since the trends we observe are for the 1989–1992 period to the 1998–2001 period, it is not merely the sharp increase in house values since 2001 that is chiefly responsible for the escalating debt and debt-to-income ratios we observe.

These impressive patterns of cohort increases in housing debt have been taking place across the board—among owners with the least debt as well as those with the most. Figures 6 and 7 present cohort trends in housing debt for the values that determine the 25th and 75th percentiles of the distribution of housing debt. At both lower and higher debt cutoffs compared with the median, relative housing debt has been increasing. Owners who are in the 55–64 age group and at the lower boundary of the top debt quartile more than doubled their housing debt to over \$70,000 in 2000—compared with less than \$30,000 in 1990 (figure 7). The top quartile of owners shows especially large

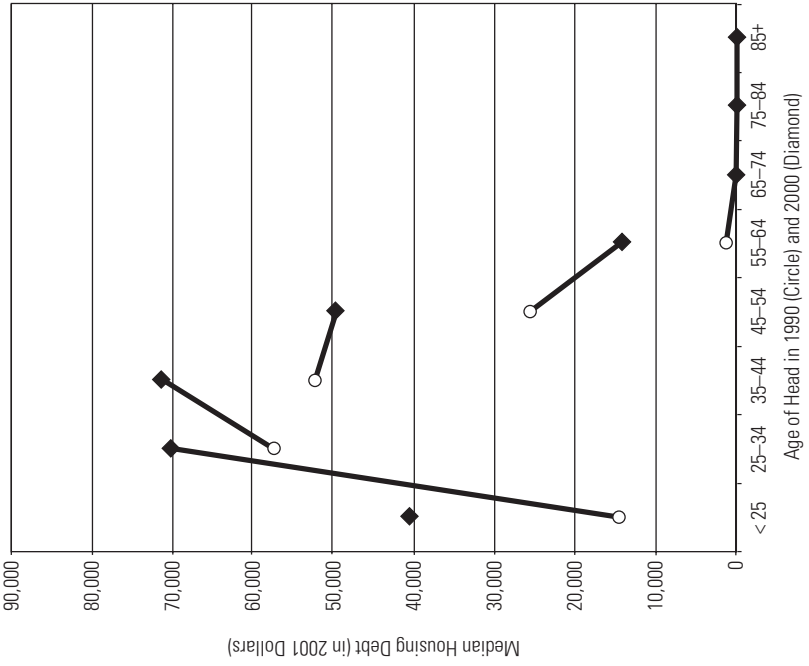
⁶ For purposes of illustration, we have assumed that the projected trajectories parallel the trajectories of the cohorts that immediately preceded them in the age structure. It is possible—indeed likely—that younger cohorts will pay off less of their mortgage debt than is indicated by such an assumption for reasons discussed in the article. This will cause the trajectories to diverge slightly.

Figure 5. Cohort Trends in Median Housing Debt for All Owners: 1990 to 2000 and Projected 2010



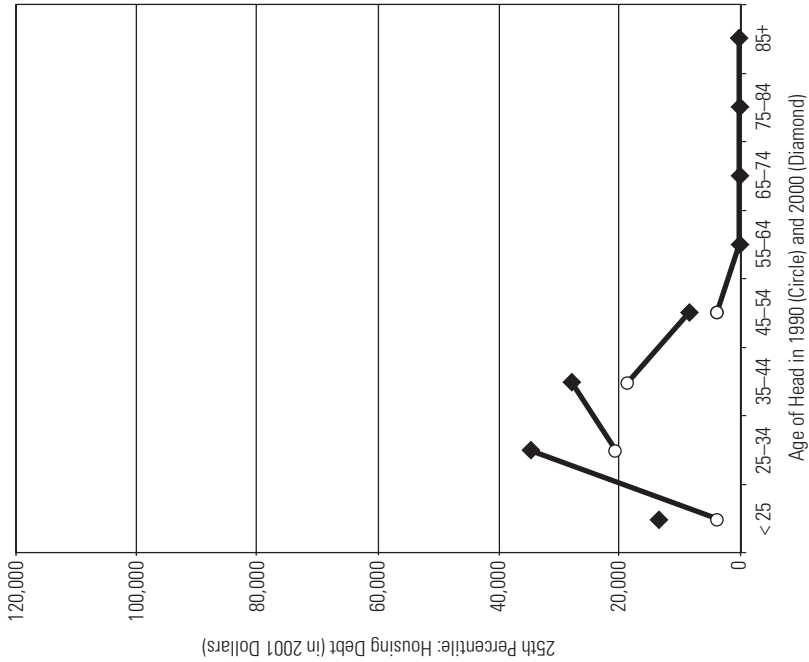
Source: Board of Governors of the Federal Reserve System 2004.

Figure 4. Cohort Trends in Median Housing Debt for All Owners: 1990 to 2000



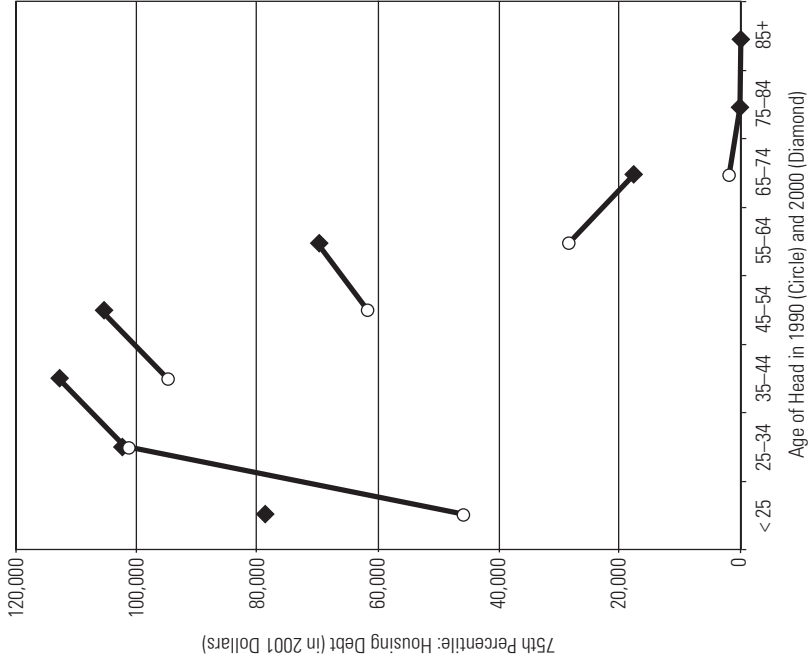
Source: Board of Governors of the Federal Reserve System 2004.

Figure 6. Cohort Trends in Bottom-Quartile Housing Debt for All Owners: 1990 to 2000



Source: Board of Governors of the Federal Reserve System 2004.

Figure 7. Cohort Trends in Top-Quartile Housing Debt for All Owners: 1990 to 2000



Source: Board of Governors of the Federal Reserve System 2004.

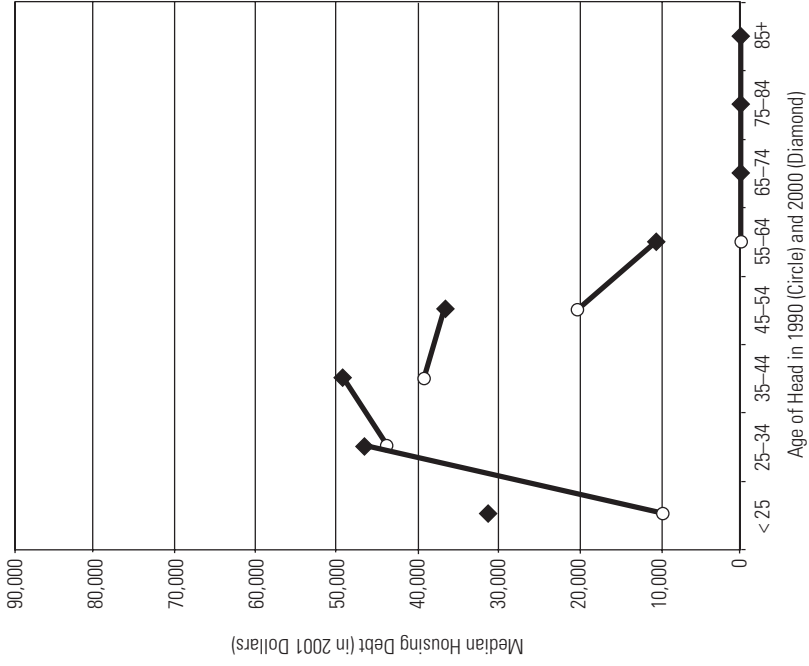
increases in housing debt for the two baby boom cohorts (those aged 35 to 44 and 45 to 54 in 2000), as well as for the younger cohort (aged 25 to 34 in 2000) that followed baby boomers into the housing market. Looking ahead 10 years, it is likely that the oldest baby boomers at the lower boundary of the top quartile will have housing debt well in excess of \$100,000 (when they are aged 55 to 64 in 2010) and about to retire. The youngest boomers in this quartile are on track to have a housing debt of over \$120,000 when they are between 45 and 54 in 2010. These are unprecedented debt levels for cohorts approaching typical retirement age. Also, as one moves from the 25th percentile to the median to the 75th percentile, the age at which housing debt turns sharply downward is later and later: after ages 35 to 44 for the 25th, 45 to 54 for the 50th, and 55 to 64 for the 75th. Therefore, as the debt level increases within cohorts, it also expands into later years before beginning to decline.

To conclude this description of recent cohort trends in housing debt, we observe that married couples have been the primary driving force behind the overall trends in increasing housing debt for middle-aged baby boomers. Figures 8 and 9 contrast the trends in median housing debt for married couples with those of unmarrieds. While the latter have experienced increases in housing debt, these are nowhere near as large as they are for married couples. This is as we might expect, both because married couples are more likely to be multiple-earner households and have higher incomes to purchase more expensive housing and because households consisting of married couples are more likely to also contain children, requiring larger houses and therefore a larger housing investment. Moreover, married couples with children in college have relied more and more on home equity loans to fund the rapidly growing costs of higher education.

The large housing debt for older married baby boomer households aged 45 to 54 in 2000 is especially noteworthy when compared with the median housing debt for the immediately older cohort at the same age 10 years earlier (\$62,000 versus \$26,700). What is also noteworthy is the fact that the younger married baby boomers (aged 35 to 44 in 2000) are already on an even higher median housing debt trajectory: \$79,900 compared with the \$57,300 the older boomers had accumulated when they were aged 35 to 44 in 1990. The baby bust generation of married owners (aged 25 to 34 in 2000) is on a still higher housing debt trajectory, with over \$81,000 in median mortgage debt by ages 25 to 34.

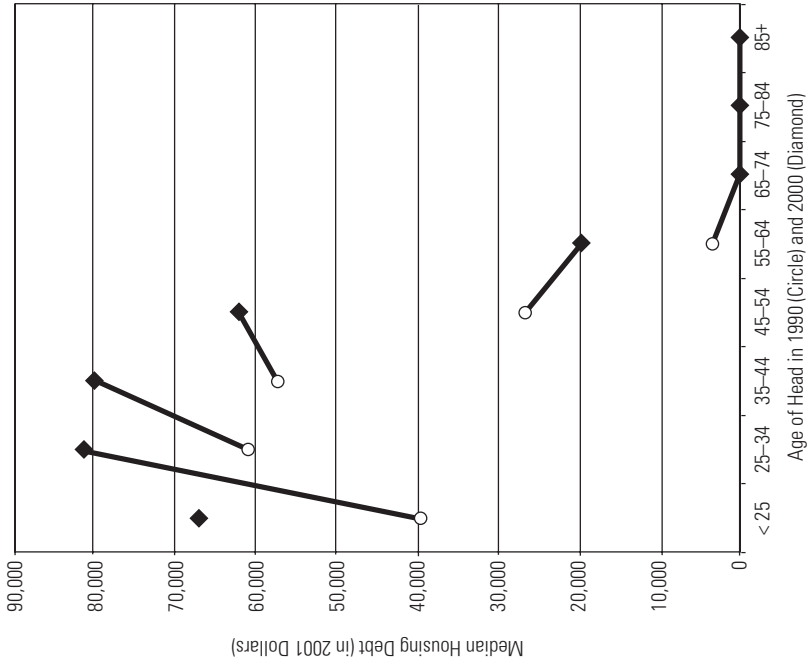
As cohorts are followed over the life course, the share with housing debt peaks at age 35 to 44 and then begins to turn downward as some owners manage to pay off their debts. Compared with those that preceded them in the age structure, the mid-life and elderly cohorts are on trajectories that have a

Figure 9. Cohort Trends in Median Housing Debt for Unmarried Owners: 1990 to 2000



Source: Board of Governors of the Federal Reserve System 2004.

Figure 8. Cohort Trends in Median Housing Debt for Married Owners: 1990 to 2000



Source: Board of Governors of the Federal Reserve System 2004.

significantly higher share with housing debt. Among 55- to 64-year-olds, 59.7 percent had housing debt in 2000, compared with 48.4 percent in the same age group in 1990. Among 65- to 74-year-olds, the respective totals are 36.5 percent and 26.5 percent. All age groups of total owners had a higher share with outstanding housing debt in 2000 than the same age group in 1990 (see table 1).

The shares with housing debt for both married and unmarried owners follow broadly similar patterns over the life course, with unmarrieds about 10 to 20 percentage points lower on average through middle age and about 5 to 10 percentage points lower for the elderly cohort. The lower unmarried shares with housing debt could reflect parental help with home purchases for young adults, property settlements for the divorced in middle age, and more reluctance on the part of widows to take on additional housing debt in old age.

Cohort trends and differences in housing value

The cohort housing debt trends that we have just described are less likely to raise red flags if increasing housing debt is matched by equally large or larger increases in the value of the homes being purchased. In that case, it could be argued that highly leveraged mortgage debt is simply a good investment, especially if the values hold up in the future and if the housing investment that the debt secures remains relatively liquid. However, if the higher debt levels being assumed by baby boomers and their successors are not being matched by equal or greater trends in the value of the homes being purchased, then the soundness of the housing investment depends on future increases in value, and there might be greater reason for concern.

SCF data confirm that the values of owner housing have indeed increased between 1990 and 2000 for all cohorts (figure 10). Every successively younger cohort of owners is on a higher value trajectory than the one that preceded it in the age structure. Younger cohorts have both purchased more expensive housing than the older generation and seen their housing rise in value fairly dramatically over the 1990s. This trend reflects the higher initial value of the housing asset for recent first-time buyers, cohort upward mobility in the housing market (trading up), and the strong appreciation in housing values (inflation) during the 1990s. The value increases for married couples are larger than for unmarrieds (figures 11 and 12), and this trend is consistent with the fact that cohorts of younger married owners showed the largest increases in household income over the 1990s. In addition, a higher percentage of younger married cohorts purchase newer housing, which has more amenities and a higher value than older housing (Masnick 2002).

Table 1. Share of Owners with Housing Debt by Age

	1990 Total Number of Owners	1990 Share with Housing Debt (%)	2000 Total Number of Owners	2000 Share with Housing Debt (%)	2000 Share with Housing Debt (%)	Share Increase (%)	Share Rate of Increase (%)
All Owners	60,042,665	61.6	70,718,885	65.7	65.7	4.1	6.7
< 25	680,890	75.1	807,414	81.2	81.2	6.0	8.0
25-34	9,217,578	87.9	8,725,753	88.9	88.9	1.0	1.1
35-44	13,481,960	87.1	16,067,110	87.7	87.7	0.6	0.7
45-54	11,092,878	78.0	16,043,603	78.6	78.6	0.7	0.9
55-64	10,152,590	48.4	11,354,255	59.7	59.7	11.3	23.4
65-74	9,254,901	26.5	9,418,935	36.5	36.5	10.0	37.7
75-84	5,226,986	11.1	6,715,335	13.5	13.5	2.4	21.7
85+	934,882	2.0	1,586,480	12.7	12.7	10.6	527.3
Married Owners	41,100,934	67.3	45,708,374	71.2	71.2	3.9	5.8
< 25	363,230	85.8	258,535	95.4	95.4	9.6	11.2
25-34	7,127,171	89.5	5,740,041	92.3	92.3	2.8	3.1
35-44	10,208,054	89.2	11,382,126	91.9	91.9	2.6	3.0
45-54	8,261,830	80.8	10,950,734	81.6	81.6	0.8	1.0
55-64	6,971,430	50.3	7,319,477	63.8	63.8	13.6	27.0
65-74	5,403,158	27.1	5,996,324	38.4	38.4	11.3	41.6
75-84	2,442,103	9.9	3,541,734	15.6	15.6	5.7	57.7
85+	333,958	0.9	519,403	18.5	18.5	17.6	1,911.5
Unmarried Owners	18,941,731	48.3	25,010,511	55.5	55.5	7.1	14.8
< 25	327,660	62.2	548,879	74.4	74.4	12.2	19.6
25-34	2,090,407	79.7	2,985,713	81.9	81.9	2.2	2.7
35-44	3,273,906	79.0	4,684,985	77.7	77.7	-1.3	-1.6
45-54	2,831,048	71.6	5,092,869	72.2	72.2	0.6	0.9
55-64	3,181,160	40.8	4,034,778	52.2	52.2	11.4	27.9
65-74	3,851,743	25.5	3,422,611	33.3	33.3	7.8	30.7
75-84	2,784,882	13.2	3,173,600	11.2	11.2	-2.0	-15.3
85+	600,925	4.1	1,067,076	9.2	9.2	5.2	127.7

Source: Board of Governors of the Federal Reserve System 2004.

Note: Unmarrieds include never married, widowed, and divorced.

Figure 10. Cohort Trends in Median Housing Value for All Owners: 1990 to 2000

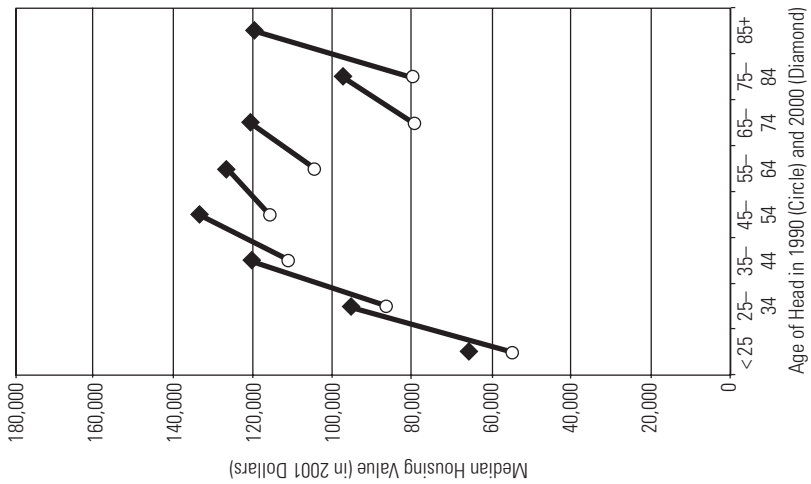


Figure 11. Cohort Trends in Median Housing Value for Married Owners: 1990 to 2000

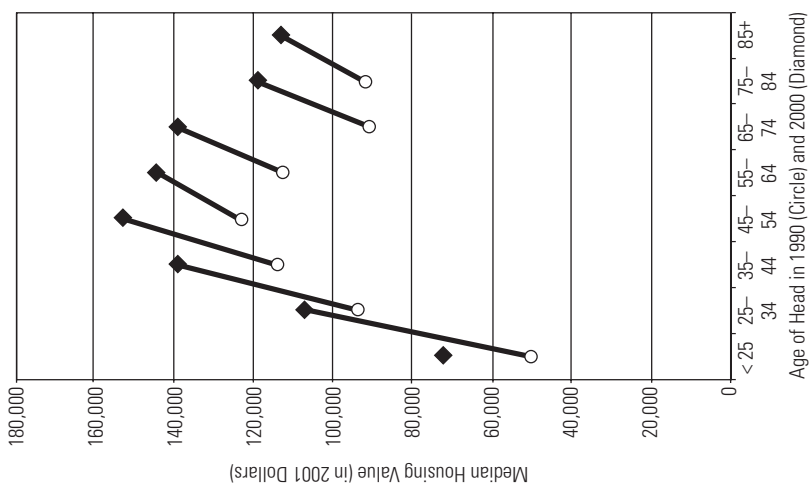
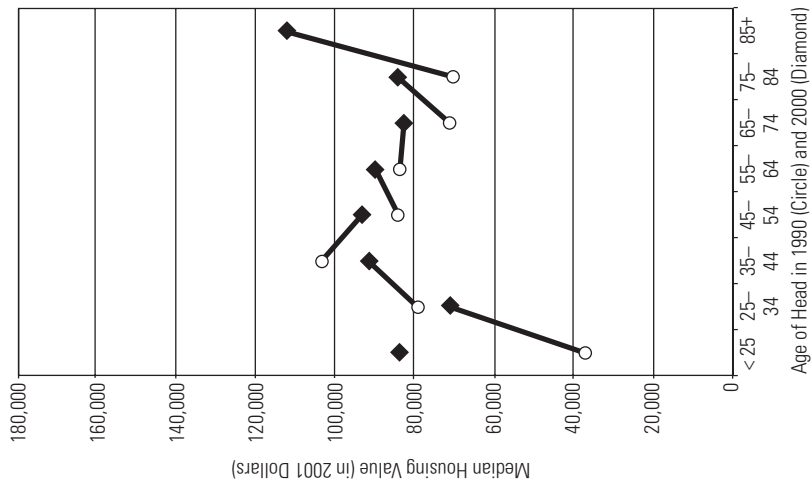


Figure 12. Cohort Trends in Median Housing Value for Unmarried Owners: 1990 to 2000



Source: Board of Governors of the Federal Reserve System 2004.

There can be little argument that two-earner married baby boomers dominated housing markets in the 1990s. The youngest (and largest) segments of the baby boom generation reached their late 30s and early 40s during the 1990s. At that time, married couples from this youngest baby boom cohort were the primary purchasers of new homes, and their consumption patterns, more than those of any other group, set the prices for housing. According to the 2000 census, 35- to 44-year-olds accounted for almost 16 million owner households in 2000, with fully 75 percent of them having moved into the unit they currently occupied sometime during the previous decade (U.S. Bureau of the Census 2000a). Some 43 percent of the 16 million became first-time owners during the 1990s, and over 11 million (71 percent of all owners in this cohort) were married-couple households at the end of the decade (U.S. Bureau of the Census 2000b). The influence of married couples on housing prices extended across the board to affect both starter and trade-up housing.

Over the first decade of the 21st century, younger baby boomers will pass into the 45–54 age group and be at a point in their lives when their incomes are peaking. Median household income for married owners in this cohort had reached \$60,400 in 1999, while median household income for the oldest married baby boomer owners (ages 45 to 54 in 1999) was \$65,000 (U.S. Bureau of the Census 2000b). Over the next decade, we expect the youngest boomers to do as well or better by further increasing household income as they reach ages 45 to 54 and continue to exert pressure on housing prices for everyone, especially in the trade-up market. Therefore, we fully expect that the high trajectories of housing debt and housing value presently being carried by both married boomers and their younger successors to be extrapolated forward throughout the next decade.

A large share of the increase in housing value for younger married cohorts reflects the upward mobility in the market that typically accompanies growing incomes and families. House value appreciation for both movers and nonmovers played an important role in increasing housing values over the decade for younger cohorts as well. Low mortgage interest rates have made purchasing higher-valued homes and carrying larger amounts of housing debt more affordable for both first-time and trade-up buyers. A home purchase is a highly leveraged investment, and with the low interest rates and low down payments offered by today's lenders, high-priced homes have never been more attainable. A household that could afford a \$1,200 monthly mortgage payment could borrow only \$160,000 when interest rates were 8.25 percent, but when they dropped to 5.75 percent, such a household could afford to borrow \$205,000.

The significant increase in housing values for the older married cohorts depicted in figure 11 reflects mostly the effects of housing inflation, since relatively few elderly homeowners are trading up. Census data indicate that only 30 percent of 65- to 74-year-olds and 20 percent of those aged 75 and older changed residences between 1990 and 2000, and much of this relocation likely reflected downsizing rather than moving up in the housing market (U.S. Bureau of the Census 2000b). For the unmarried elderly cohort in figure 12, the increase in median home value between 1990 and 2000 could also reflect the effects of mortality—that is, converting the relatively high-valued homes owned by married couples into the unmarried owner category at the second point in time.

Housing values for younger and middle-aged unmarried owners have not fared as well as they have for marrieds (figure 12). Approximately 30 percent (4.7 million) of the younger baby boom owners in 2000 were not married. According to the 2000 census, an additional 8 million households with heads aged 35 to 44 were renters (U.S. Bureau of the Census 2000a). These unmarried owners and prospective owners are often competing in largely the same housing markets as the married owners, who generally have greater financial and familial resources to help them purchase their first home or move up. Because of the dominant role of married baby boomers in setting housing prices, housing has become less and less affordable for many unmarried adults. The bar has been significantly raised for unmarried households on both the amount of housing debt they must incur and the debt burdens (mortgage debt as a percentage of household income) that result.

For the broad middle-aged groups of unmarried owners represented in figure 12, the lack of appreciation in house values may reflect the fact that unmarried heads, with typically one income, are constrained to occupy a lower-valued housing stock because it is what they can afford. In 2002, the median income of unmarried household heads was approximately half that of households headed by married couples (U.S. Bureau of the Census 2003a). It is likely that middle-aged unmarried households contain a higher proportion of recently divorced individuals who have experienced a downturn in disposable income because of the breakup of two-earner marriages. In general, we would expect the middle-aged unmarried category to represent a churning of the population in and out because of high divorce and remarriage rates, but falling remarriage rates over the past decade may mean that divorced individuals will stay divorced longer.

Compared with the housing occupied by married couples, the housing stock occupied by unmarrieds is more likely to include older units, smaller units (as measured by the number of bedrooms), and houses in poorer neigh-

borhoods (as suggested by differences in household income) and to consist of more affordable mobile homes, condominiums, and town houses (see table 2). While the differences are probably not large enough to account entirely for the lower housing values of middle-aged unmarried cohorts, they are definitely a factor. Without either remarriage or upward mobility in the housing market, unmarried owners appear set to achieve far less home equity growth than their married counterparts.

Cohort trends and differences in home equity

While many owners have benefited from housing appreciation, have the increases in value, on average, kept pace with or exceeded the increases in housing debt? In other words, has home equity, like house value, been increasing for most groups? Figure 13 demonstrates that growing housing values translated into ever-higher trajectories of home equity for older cohorts only. The dramatic increase in housing debt for baby boomers and younger cohorts that have recently entered the housing market has placed them on ever-lower cohort trajectories in equity accumulation as a share of value despite the higher-value housing they occupy. It is not that younger cohorts are not achieving equity growth; it is just that they are beginning to lose ground relative to the gains experienced by the cohorts that preceded them.

There are strong differences between patterns of equity growth for married and unmarried owners (figures 14 and 15). The lesser increases in values we observed for unmarried owners, combined with their growing housing debt, resulted in much less of a net increase in home equity over the 1990s than it did for married owners. Only the older unmarried owners, with their low housing debt, influx of newly widowed owners, and relative residential stability were able to sit on a housing asset that gained significant equity. Among married owners, the largest increases in home equity also occurred for the oldest cohorts—those with the least housing debt.

However, the steadily expanding housing debt for the younger married cohorts has slowed the growth in their home equity, despite the fact that their overall housing values have increased the most. Successively younger married-couple cohorts, while taking on more and more housing debt, were able to achieve only approximately the same home equity growth trajectories as the cohorts that preceded them, despite living in higher-valued homes at each stage of the life course. This is not to suggest that the growth in home equity among younger married cohorts over the 1990s was insignificant or insubstantial. It simply underscores the fact that the housing and mortgage market conditions of the 1990s, with declining interest rates, low down payments, and substan-

Table 2. Housing Characteristics of Married and Unmarried Baby Boom Owners: 2000

	Age and Marital Status of Head			
	35–44 Married	35–44 Unmarried	45–54 Married	45–54 Unmarried
Households	13,908,509	9,899,919	12,635,663	8,698,312
Owners	11,161,158	4,626,398	10,979,351	4,997,783
Percentage of Owners	80	47	87	57
Household Income (in Thousands)				
< \$20	5.9%	26.9%	5.1%	26.1%
\$20–39	16.1%	32.5%	12.6%	29.3%
\$40–59	23.3%	20.1%	19.7%	21.0%
\$60–79	21.1%	9.7%	19.8%	11.0%
\$80–99	13.2%	4.4%	14.9%	5.3%
\$100+	20.5%	6.3%	27.9%	7.3%
All	100.0%	100.0%	100.0%	100.0%
Age of Housing Unit				
0–10 years	25.8%	15.2%	18.4%	12.6%
11–20 years	17.9%	16.1%	19.2%	15.9%
21–30 years	15.7%	18.0%	20.6%	19.4%
31–40 years	11.4%	13.5%	11.6%	13.3%
41–50 years	11.1%	13.1%	11.1%	13.6%
51–60 years	5.8%	8.1%	5.8%	8.5%
61+ years	12.4%	16.1%	13.2%	16.7%
All	100.0%	100.0%	100.0%	100.0%
Structure Type				
Unknown	3.5%	1.9%	4.0%	2.3%
Mobile home or trailer	5.8%	7.7%	4.8%	7.2%
Boat, tent, van, other	0.0%	0.1%	0.1%	0.2%
Single-family house, detached	75.4%	44.6%	79.2%	49.7%
Single-family house, attached	4.1%	6.9%	3.6%	7.2%
Two-family building	2.6%	6.3%	2.0%	5.5%
Three- to four-family building	2.2%	7.6%	1.6%	6.5%
Five- to nine-family building	1.8%	7.5%	1.4%	6.2%
10+ family building	4.5%	17.2%	3.2%	15.3%
All	100.0%	100.0%	100.0%	100.0%
Number of Bedrooms				
0	1.2%	4.3%	0.8%	3.6%
1	5.0%	18.6%	3.6%	17.4%
2	15.8%	33.5%	14.9%	32.6%
3+	78.0%	43.6%	80.8%	46.5%
All	100.0%	100.0%	100.0%	100.0%

Source: U.S. Bureau of the Census 2000b.

Note: Totals may not equal 100 percent because of rounding.

Figure 13. Cohort Trends in Median Home Equity for All Owners: 1990 to 2000

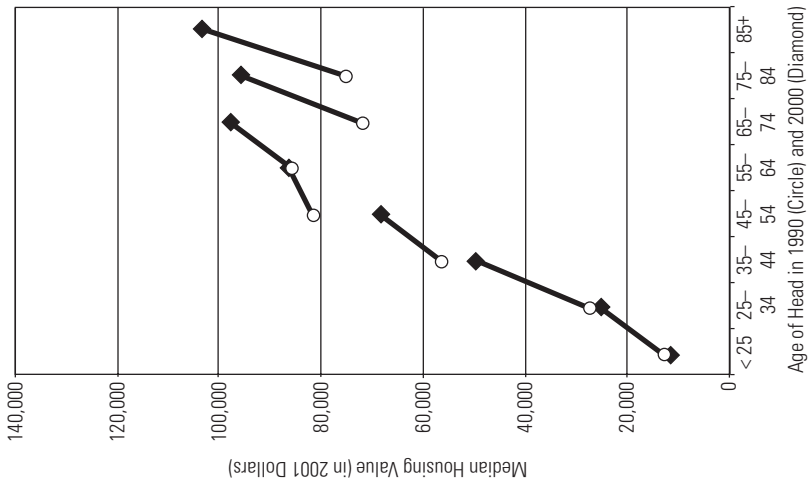


Figure 14. Cohort Trends in Median Home Equity for Married Owners: 1990 to 2000

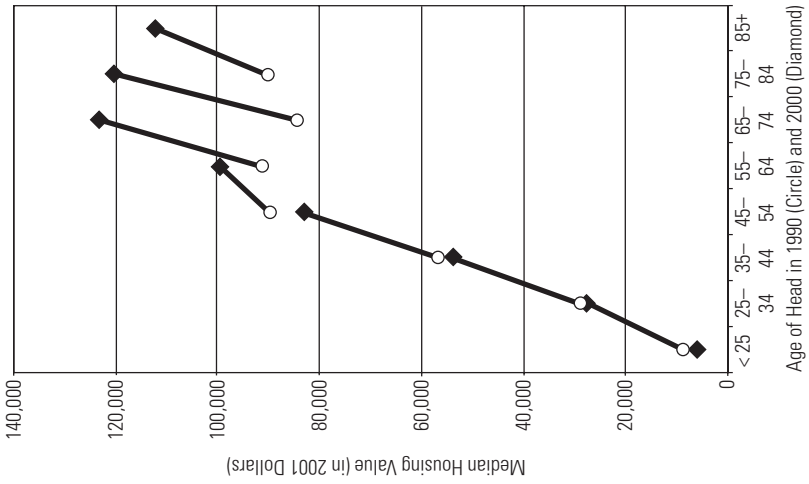
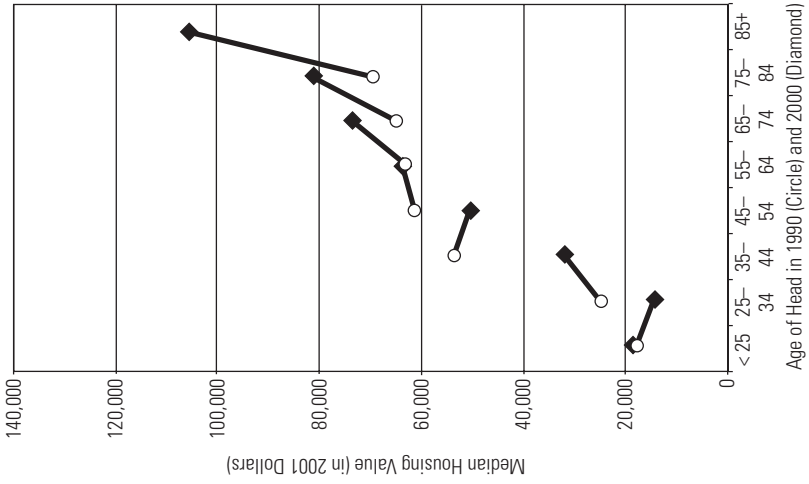


Figure 15. Cohort Trends in Median Home Equity for Unmarried Owners: 1990 to 2000



Source: Board of Governors of the Federal Reserve System 2004.

tial inflation in prices, especially toward the end of the decade, meant that younger cohorts took on relatively more debt to achieve only the same equity gains as the lower-debt cohorts that preceded them. Given both the high housing inflation and the large increase in homeownership that has taken place since 2000, this pattern of running harder to keep up has likely continued for new homeowners.

If the cohort differences in housing values that we observe in figure 11 are sustained well into the future, these younger cohorts would gain additional equity eventually if housing values continue to appreciate and as mortgages are paid off in the long run. Such gains have likely already occurred in the first half of this new decade for married owners who were already in the market in the 1990s, but equity gains could be short-lived if there is a significant correction to the recent torrid pace of housing inflation in many markets. (For a discussion on concerns over a housing bubble, see McCarthy and Peach 2004 and Joint Center for Housing Studies 2005, 2006.)

For younger unmarried owners, unlike married owners, the housing market conditions of the 1990s have resulted in successively younger cohorts falling farther and farther behind the ones that preceded them in home equity accumulation. For at least two cohorts of unmarried owners, there was a net loss of home equity between 1990 and 2000 (the equity trajectories in figure 15 moved downward). It is important to note again that the unmarried owners are likely to have a large amount of turnover and that the downward trend in equity could reflect the fact that recent arrivals into unmarried status have assumed higher debt rather than the fact that unmarried owners continued to lose ground. Differences between married and unmarried owners on these measures appear strong enough to deserve further research.

Implications

The foregoing analysis suggests that the following predictions will likely come to pass over the next decade.

Homeowners will spend a greater share of their incomes on housing

Growing mortgage obligations at a time in life when incomes normally decline may force difficult spending trade-offs in the future. In the past, the early age at which households became relatively free of debt provided a cushion to absorb the consequences of falling income later in life. Typically, cohort household income starts to trend downward when people are in their late 50s as households begin to experience the loss of one wage earner through retirement or downsizing, mortality, or poor health or when divorce is less and less

likely to be followed by remarriage.⁷ In addition, loss of employment through the disappearance of “old economy” jobs more typically held by the older generation also becomes a factor in the downturn in household income after 55. In such cases of declining income, high housing debt in old age could divert money away from spending on other necessities such as food, heat and utilities, or health care. More broadly, high housing debt late in life will perhaps mean that baby boomers will spend less on a wide variety of goods and services as their incomes fall than they would have otherwise.

There is likely to be a continuing shift from consumer debt to mortgage debt

As long as mortgage interest rates remain low and lenders continue to aggressively market home equity loans, households with a great deal of home equity should continue to tap that equity for needed cash. The shifting of consumer debt to mortgage debt has costs and benefits. On the benefits side, it usually results in lower monthly payments and interest rates. On the down side, however, it may result in longer-term mortgages that ultimately involve more interest. Also, the shift allows lenders to attach an individual’s home in the event of default. Whereas before, creditors could not touch the home of a person who missed a credit card or other payment, now people who miss a debt payment are missing a mortgage payment and putting their home at risk in increasing numbers. Despite this trend, there has not yet been a large upturn in the rate of mortgage loan delinquencies and defaults (Mortgage Bankers Association 2006). Instead, delinquency and default patterns reflect the underlying strength of the economy, loan terms, and borrowers’ credit scores.

On balance, therefore, this shifting of debt onto the home has almost certainly been a net plus. It does mean, however, that looking at people’s mortgage payments and equating them with housing costs is becoming an antiquated way of viewing the world. In fact, some portion of mortgage payments is being used to finance college educations, health care, vehicle purchases, vacations, and other short-term nonhousing consumption.

High housing expenses for the elderly will reinforce the trend toward greater labor force participation in old age

High housing debt as cohorts approach traditional retirement age could have several other repercussions. Having people continue to participate in the

⁷ According to data from the Current Population Surveys (CPSs) for 1985, 1995, and 2005, for the cohort born between 1935 and 1944, median household income (in 2005 dollars) was \$56,630 when heads were ages 40 to 49, \$56,411 when they were 50 to 59, and \$39,264 at 60 to 69. Older cohorts followed similar patterns (Bureau of Labor Statistics 2006a).

labor force into their late 60s and early 70s to service mortgage debt would be one likely consequence. Although later intended retirement age is likely more a cause than an effect of the willingness to hold mortgage debt later in life, having an active mortgage may nevertheless also motivate some to remain in the workforce after they would otherwise have chosen to retire. Indeed, since the mid-1980s, we have already seen a trend toward increasing participation in the labor force for both elderly women and elderly men. Participation rates for 65- to 69-year-olds, which averaged 13.5 percent for women and 22.6 percent for men in 1985, rose to 25.0 percent and 34.4 percent, respectively, in May 2006 (Bureau of Labor Statistics 2006b). The added pressure of higher mortgage payments late in life should reinforce this upward trend in labor force participation in the future.

Public opinion polls now indicate that most baby boomers plan to work well beyond the age when they are eligible for Social Security (Quinn 2000). For married couples approaching retirement, the continued employment of one spouse, or the part-time employment of both, would probably be enough to meet mortgage payments in most cases, even for those whose mortgage debt is the highest (U.S. Bureau of the Census 2003b).

Other demographic and economic factors reinforce higher labor force participation later in life. Because of delayed marriage and the fact that a high percentage of all baby boomer marriages are remarriages for one or both spouses, the age differences between spouses for future retirement age cohorts will be greater than for retirees in the 1970s and 1980s, who were more likely to have married when both partners were in their early to mid-20s (Masnick 1996). Research has shown that the older spouse will tend to work longer if the younger spouse is still in the labor force (Han and Moen 1999). The rising age of eligibility for Social Security, the shift toward office and sales jobs, and the trend toward generally more active and healthy lifestyles for tomorrow's elderly are also all part of the synergy that should produce higher rates of labor force participation by the elderly population in the future.

We could see more housing mobility undertaken late in life in an effort to both downsize and reduce housing costs

Another repercussion of high mortgage debt for people in the retirement age groups could be higher rates of geographic mobility at older ages. In the event that continued employment is not possible, not desirable, or not sufficient to meet household expenses late in life, owners can always downsize to reduce expenses. In fact, for many elderly households that might otherwise be reluctant to move out of their aging and often overly large empty-nest housing—housing that periodically needs repairs and maintenance that owners can

no longer provide—being forced to downsize might not be viewed in a negative light at all. Such housing gets recycled back into the market and generally gets the repairs it needs to maintain its value and integrity (Joint Center for Housing Studies 2003). Moreover, such housing often more closely matches the needs of the new (usually younger) owners in terms of number of rooms, proximity to schools, employment opportunities, and neighborhood amenities such as parks and shopping.

The four keys to successful downsizing late in life are as follows:

1. Enough equity in the current home
2. A buyer for the current home
3. Mortgage interest rates that are affordable for buyers
4. Alternative housing that is more affordable for elderly owners wishing to downsize and that at the same time fulfills their need to maintain their social support networks

For baby boomers approaching retirement over the next two decades, the first two conditions appear to be unequivocally met for a majority of homeowners, especially for owners of single-family homes. Our analysis has shown significant and growing home equity for these future retirement cohorts, particularly for married couples. Projections of future housing demand show that there will be sustained demand for this owner-occupied housing stock from echo boomers and new immigrants for at least the next two decades (Masnick and Di 2003).

Only the third and fourth requirements for successful downsizing are uncertain. Future mortgage interest rates, as well as other aspects of the health of the economy that impact home buying, are difficult to predict. The fourth item, the availability of acceptable, less costly housing alternatives, can also be an obstacle to downsizing. In fully built-out communities, it is often difficult to find nearby but less expensive alternative housing that meets the needs of those wishing to downsize and still remain in their communities. However, for those willing and able to relocate at greater distances, less expensive housing opportunities abound, and modest housing closer to adult children, or in locations where the cost of living is low, can provide just the alternatives to allow for downsizing.

We could see greater use of reverse equity mortgages for cash-strapped households

While reverse equity mortgages are not very popular among elderly homeowners today, their use may increase for the next generation, which has already

developed a different perspective on tapping into home equity, especially in those cases where continued employment or downsizing is not possible or desirable. For those elderly owners who are house rich but cash poor, particularly those with mortgage debt, new reverse mortgages will need to be developed to both pay off existing debt and provide an annuity, without increasing the risk of eviction (Apgar and Di 2005). Our data seem to suggest that unmarried owner households with mortgage debt will be less able to rely on home equity to help fund retirement.

High levels of home equity among older cohorts could also result in large transfers of wealth between the generations over the next two decades

Even though the baby boomers have taken on record levels of housing debt, it might be significant that their parents' generation has attained record levels of home equity and other household wealth that the boomers stand to inherit in the future. Perhaps they are hoping that their parents' financial prudence will somehow save them from their own excesses. A recent estimate by the Social Welfare Research Institute at Boston College suggests that boomers could inherit as much as \$7.2 trillion dollars (Havens and Schervish 2003). Aside from possible direct linkages between accumulated housing wealth that parents use to help their children purchase housing through down payment assistance and the like, boomers might be more sanguine about taking on high levels of housing debt in anticipation of inheritances that could materialize when they are ready to retire. This connection has not yet been studied by economists, but is an extension of the well-known finding that savings rates are lower when parents are wealthier (see Di and Yang 2002 for a summary of the literature on intergenerational wealth transfer).

There are certainly many caveats. For example, there are more siblings among the boomer generation to share the inheritance, parents are living longer and longer and may use up most of their wealth in old age, many parents are divorced and remarried to younger spouses who will inherit before the boomers do, many boomers have parents with little wealth, especially if they are minorities or immigrants, and so on. However, we are not talking about actuarial calculations as the critical factor in borrowing behavior, but rather psychological reasons why boomers might be more comfortable with high housing debt at a time in life when their incomes are expected to decline and they might be called on to support aging parents. Today's aging parents need less care from their children because of Social Security, Medicare, better health, fatter savings accounts, and higher home equity that they can easily draw on for emergencies.

From the perspective of the boomers, a windfall inheritance could help relieve them of their high housing debt and make their own retirement plans all the sweeter. Whether such a scenario plays out is beside the point. Carrying high housing debt into old age is surely based on wishful thinking across a whole range of variables: the continued survival of one's spouse well into old age, sustained high and appreciating housing values, continued attachment to the labor force based on the premise of the continuing robust health of both family members and the economy, continued ease of tapping accumulated home equity at low interest rates, and having ready buyers when they are ready to downsize. These are just some of the bets baby boomers are making. A windfall inheritance might be only the icing on the cake.

Unanswered questions

The new trend of larger numbers of homeowners holding mortgage debt with larger balances and additional years remaining on the term raises several questions. Does the trend constitute a departure from past economic behavior or instead reflect the reversal of the trend toward earlier retirement and continuation of a trend of younger spouses remaining engaged in the workforce after the household head retires? Does it instead suggest a willingness to tap into home equity later in the life cycle than before, even after accounting for small increases in the median retirement age over the 1990s? If so, does it herald future expanded use of reverse mortgage products—mortgages that pay an annuity to the borrower with the loan repayable only after the death of the owner or when the house is sold—which have seen little market acceptance since being introduced in the 1980s? That would suggest greater conformance with life-cycle theory and could have enormous implications for the housing finance industry, the standard of living of older people, and demands on the Social Security system as cash-poor but equity-rich homeowners boost their annual income through liquidating home equity. Or does it reflect a strategy of shifting from consumer loans that may have been used to finance consumption in later life to the use of mortgage debt because the Tax Reform Act of 1986 eliminated the interest deduction on consumer loans? Surely it reflects this in part, but by how much is less clear. Finally, should the differences we have observed between middle-aged married and unmarried owners in home equity accumulation be of any concern? All of these questions call for further research.

Appendix A. Survey of Consumer Finances Data Used to Calculate Figures Showing Cohort Trends

Table A.1.

Measure by Age of Head		All Owners 1990 Estimate in 2001 Dollars			All Owners 2000 Estimate in 2001 Dollars		
Housing Debt	Top 75%	45,836	14,602	3,696	78,791	40,463	13,333
	Bottom 25%	101,373	57,369	20,657	102,292	70,133	34,404
		94,905	52,237	18,512	113,009	71,221	27,738
		61,708	25,508	3,688	105,558	49,661	8,295
		28,371	1,237	0	69,947	14,168	0
		1,848	0	0	17,325	0	0
	0	0	0	0	0	0	
	0	0	0	0	0	0	
Housing Value	Top 75%	92,397	54,696	17,275	101,617	65,670	38,168
	Bottom 25%	155,755	86,160	48,838	152,316	95,508	61,475
		192,219	111,041	68,885	205,015	120,342	75,398
		214,329	115,661	68,885	220,458	133,540	83,693
		181,989	104,359	57,369	213,496	126,578	75,398
		149,317	79,280	48,013	202,906	120,469	71,888
	137,770	79,692	44,218	187,168	97,508	68,074	
	168,824	73,010	40,094	184,425	119,617	69,956	
Home Equity	Top 75%	47,684	12,655	4,694	34,041	11,569	4,059
	Bottom 25%	63,837	27,455	12,853	56,328	25,257	9,207
		114,590	56,428	28,676	93,820	50,033	20,635
		149,354	81,409	38,031	132,275	68,437	33,218
		149,287	85,946	41,942	165,649	86,487	42,210
		137,770	71,872	42,156	173,197	97,811	54,328
	133,646	75,072	44,218	178,688	95,693	65,897	
	168,824	73,010	40,094	184,425	103,562	65,542	

Table A.1. Continued

Measure by Age of Head	Married Owners 1990 Estimate in 2001 Dollars				Married Owners 2000 Estimate in 2001 Dollars			
	Top 75%	Median	Bottom 25%		Top 75%	Median	Bottom 25%	
Housing Debt				Housing Debt				
< 25	54,597	39,649	7,392	< 25	85,457	67,003	36,835	
25-34	103,023	59,942	25,393	25-34	118,950	81,154	37,552	
35-44	99,029	56,362	20,162	35-44	126,275	79,902	38,885	
45-54	64,793	26,745	5,560	45-54	117,372	61,956	15,805	
55-64	32,091	3,300	0	55-64	75,036	19,864	0	
65-74	4,620	0	0	65-74	20,962	0	0	
75-84	0	0	0	75-84	0	0	0	
85+	0	0	0	85+	0	0	0	
Housing Value				Housing Value				
< 25	89,923	50,159	17,275	< 25	112,655	72,590	37,080	
25-34	165,325	94,195	53,673	25-34	167,092	107,685	71,339	
35-44	200,469	114,341	73,010	35-44	231,977	139,844	88,664	
45-54	230,251	123,581	74,330	45-54	257,714	153,835	98,596	
55-64	199,478	113,104	66,823	55-64	244,676	145,354	86,782	
65-74	194,030	90,994	53,458	65-74	233,496	139,912	88,732	
75-84	161,366	91,955	57,583	75-84	224,720	119,617	85,213	
85+	160,869	101,472	53,705	85+	182,611	113,584	86,623	
Home Equity				Home Equity				
< 25	23,743	9,883	4,323	< 25	26,236	7,197	1,637	
25-34	69,381	29,616	13,266	25-34	60,682	28,767	11,266	
35-44	116,239	57,253	29,377	35-44	103,693	54,513	25,198	
45-54	162,504	89,427	44,714	45-54	152,207	83,036	41,062	
55-64	165,424	90,994	47,700	55-64	191,387	99,204	53,897	
65-74	176,297	84,312	47,601	65-74	195,092	122,587	71,770	
75-84	161,366	89,893	55,521	75-84	224,357	119,617	78,977	
85+	160,869	101,472	53,705	85+	182,611	111,770	58,142	

Table A.1. Continued

Measure by Age of Head	Unmarried Owners 1990 Estimate in 2001 Dollars				Unmarried Owners 2000 Estimate in 2001 Dollars			
	Top 75%	Median	Bottom 25%		Top 75%	Median	Bottom 25%	
Housing Debt				Housing Debt				Bottom 25%
< 25	22,736	9,982	0	< 25	72,543	31,475	5,667	
25-34	83,059	43,790	9,454	25-34	74,776	46,575	9,773	
35-44	74,627	39,269	7,293	35-44	84,720	49,322	3,667	
45-54	49,481	20,360	0	45-54	84,779	36,791	0	
55-64	25,508	0	0	55-64	60,207	10,885	0	
65-74	967	0	0	65-74	12,590	0	0	
75-84	0	0	0	75-84	0	0	0	
85+	0	0	0	85+	0	0	0	
Housing Value				Housing Value				Bottom 25%
< 25	161,697	37,041	17,275	< 25	102,567	84,015	25,454	
25-34	129,521	78,950	36,711	25-34	103,348	71,148	41,770	
35-44	165,490	103,287	58,078	35-44	137,670	91,682	52,440	
45-54	153,197	84,312	46,281	45-54	158,850	93,348	55,617	
55-64	148,215	83,883	34,335	55-64	151,003	90,053	57,009	
65-74	105,926	70,948	42,156	65-74	137,080	83,053	56,578	
75-84	110,463	70,452	31,679	75-84	127,567	84,425	55,106	
85+	185,456	70,948	40,605	85+	175,517	112,567	75,797	
Home Equity				Home Equity				Bottom 25%
< 25	142,772	18,100	9,438	< 25	78,348	18,670	4,569	
25-34	50,488	24,980	10,692	25-34	34,642	14,590	6,821	
35-44	111,092	53,755	24,353	35-44	70,207	32,248	16,336	
45-54	123,063	61,576	25,079	45-54	91,387	50,773	23,239	
55-64	127,459	63,837	26,416	55-64	98,387	63,912	28,749	
65-74	103,039	65,189	36,711	65-74	117,646	73,915	40,693	
75-84	105,926	69,627	30,854	75-84	127,567	81,522	49,655	
85+	185,456	70,948	40,605	85+	175,517	105,900	56,988	

Source: Board of Governors of the Federal Reserve 2004.

Note: Values define the upper boundary of the bottom quartile and the lower boundary of the top quartile.

Authors

George S. Masnick is a Research Affiliate at the Joint Center for Housing Studies at Harvard University. Zhu Xiao Di is a Senior Research Analyst at the Joint Center for Housing Studies at Harvard University. Eric Belsky is Executive Director of the Joint Center for Housing Studies at Harvard University.

The authors would like to acknowledge the assistance of Ruby Henry in preparing the 2000 Census Public Use Microdata Sample data for this article and the many helpful suggestions by the editor and two anonymous reviewers. An earlier version of this article was presented at the 2005 annual meeting of the Population Association of America.

References

Aizcorbe, Ana M., Arthur B. Kennickell, and Kevin B. Moore. 2003. Recent Changes in U.S. Family Finances: Evidence from the 1998 and 2001 Survey of Consumer Finances. *Federal Reserve Bulletin* 89:1–32.

Ando, Albert, and Franco Modigliani. 1963. The Life-Cycle Hypothesis of Saving: Aggregate Implications and Tests. *American Economic Review* 53:55–84.

Antoniewicz, Rochelle L. 1996. *A Comparison of the Household Sector from the Flow of Funds Accounts and the Survey of Consumer Finances*. Econ Papers: Finance and Economics Discussion Series No. 96–26. Federal Reserve Board of Governors. October. World Wide Web page <<http://econpapers.repec.org/paper/fipfedgfe/96-26.html>> (accessed July 29, 2006).

Apgar, William C., and Zhu Xiao Di. 2005. Housing Wealth and Retirement Savings: Enhancing Financial Security for Older Americans. Working Paper W05–8. Harvard University, Joint Center for Housing Studies.

Avery, Robert B., Gregory E. Elliehausen, and Glenn B. Canner. 1984. Survey of Consumer Finances, 1983. *Federal Reserve Bulletin* 70:679–92.

Avery, Robert B., Gregory E. Elliehausen, Glenn B. Canner, and Thomas A. Gustafson. 1984. Survey of Consumer Finances, 1983: A Second Report. *Federal Reserve Bulletin* 70:857–68.

Avery, Robert B., Gregory E. Elliehausen, and Arthur B. Kennickell. 1987. Changes in Consumer Installment Debt: Evidence from the 1983 and 1986 Surveys of Consumer Finances. *Federal Reserve Bulletin* 73:761–78.

Belsky, Eric, and Joel Prakken. 2004. Housing Wealth Effects: Housing's Impact on Wealth Accumulation, Wealth Distribution, and Consumer Spending. Working Paper W04–13. Harvard University, Joint Center for Housing Studies.

Board of Governors of the Federal Reserve System. 2004. Survey of Consumer Finances Public Use Data Sets. World Wide Web page <<http://www.federalreserve.gov/pubs/oss/oss2/scfindex.html>> (accessed July 27, 2006).

Board of Governors of the Federal Reserve System. 2006. Flow of Funds Accounts of the United States. Release date June 8, 2006. Table D.3. Debt Outstanding by Sector. World Wide Web page <<http://www.federalreserve.gov/releases/Z1/current>> (accessed July 27).

- Brady, Peter J., Glenn B. Canner, and Dean M. Maki. 2000. The Effects of Recent Mortgage Refinancing. *Federal Reserve Bulletin* 86:441–50.
- Bucks, Brian K., Arthur B. Kennickell, and Kevin B. Moore. 2006. Recent Changes in U.S. Family Finances: Evidence from the 2001 and 2004 Survey of Consumer Finances. *Federal Reserve Bulletin* 92:A1–A38.
- Bureau of Labor Statistics. 2006a. *Joint Center Tabulations of Current Population Survey Microdata of March Supplements for 1985, 1995, and 2005*. World Wide Web page <http://www.bls.census.gov/cps_ftp.html#cpsmarch> (accessed July 27).
- Bureau of Labor Statistics. 2006b. *Table A–13: Employment Status of the Civilian Noninstitutional Population by Age, Sex, and Race*. World Wide Web page <<http://www.bls.gov/web/empstat.supptoc.htm>> (accessed July 6).
- Canner, Glenn B., Thomas A. Durkin, and Charles A. Luckett. 1998. Recent Developments in Home Equity Lending. *Federal Reserve Bulletin* 84:242–51.
- Canner, Glenn B., Karen Dynan, and Wayne Passmore. 2002. Mortgage Refinancing in 2001 and Early 2002. *Federal Reserve Bulletin* 88:469–81.
- Di, Zhu Xiao. 2001. The Role of Housing as a Component of Household Wealth. Working Paper W01–6. Harvard University, Joint Center for Housing Studies.
- Di, Zhu Xiao, Nancy McArdle, and George S. Masnick. 2001. Second Homes: What, How Many, Where, and Who. Research Note N01–2. Harvard University, Joint Center for Housing Studies.
- Di, Zhu Xiao, and Yi Yang. 2002. *Intergenerational Wealth Transfer and Its Impact on Housing*. Working paper W02-2. Harvard University, Joint Center for Housing Studies.
- Eugeni, Francesca. 1993. Consumer Debt and Home Equity Borrowing. *Economic Perspectives* (Federal Reserve Bank of Chicago), March, pp. 2–13.
- Gale, William G., and John Karl Scholz. 1994. Intergenerational Transfers and the Accumulation of Wealth. *Journal of Economic Perspectives* 8(4):145–60.
- Gist, John, and Carlos Figueiredo. 2002a. Deeper in Debt: Trends among Midlife and Older Americans. *AARP Public Policy Institute Data Digest* (April). World Wide Web page <<http://www.aarp.org/research/credit-debt/debt/aresearch-import-339-DD70.html>> (accessed May 20, 2006).
- Gist, John, and Carlos Figueiredo. 2002b. Deeper in Debt Redux: Housing and Nonhousing Debt Burdens. *AARP Public Policy Institute Data Digest* (August). World Wide Web page <<http://www.aarp.org/research/credit-debt/debt/aresearch-import-341-DD75.html>> (accessed May 20, 2006).
- Han, Shin-Kap, and Phyllis Moen. 1999. Clocking Out: Temporal Patterns of Retirement. *American Journal of Sociology* 105:191–236.
- Havens, John J., and Paul G. Schervish. 2003. Why the \$41 Trillion Wealth Transfer Estimate Is Still Valid: A Review of Challenges and Questions. *Journal of Gift Planning* 7:11–15, 47–50.

Joint Center for Housing Studies. 2003. *Measuring the Benefits of Home Remodeling*. Cambridge, MA: Harvard University.

Joint Center for Housing Studies. 2005. *The State of the Nation's Housing 2005*. Cambridge, MA: Harvard University.

Joint Center for Housing Studies. 2006. *The State of the Nation's Housing 2006*. Cambridge, MA: Harvard University.

Kennickell, Arthur, and Janice Shack-Marquez. 1992. Changes in Family Finances from 1983 to 1989: Evidence from the Survey of Consumer Finances. *Federal Reserve Bulletin* 78:1–18.

Kennickell, Arthur B., and Martha Starr-McCluer. 1994. Changes in Family Finances from 1989 to 1992: Evidence from the Survey of Consumer Finances. *Federal Reserve Bulletin* 80:861–82.

Kennickell, Arthur B., Martha Starr-McCluer, and Annika E. Sunden. 1997. Family Finances in the U.S.: Recent Evidence from the Survey of Consumer Finances. *Federal Reserve Bulletin* 83:1–24.

Kennickell, Arthur B., Martha Starr-McCluer, and Brian J. Surette. 2000. Recent Changes in U.S. Family Finances: Results from the 1998 Survey of Consumer Finances. *Federal Reserve Bulletin* 86:1–29.

Kim-Sung, Kellie K., and Sharon Hermanson. 2003. Experience of Older Refinance Mortgage Loan Borrowers: Broker- and Lender-Originated Loans. *AARP Public Policy Institute Data Digest* (January). World Wide Web page <http://www.aarp.org/research/credit-debt/mortgages/experiences_of_older_refinance_mortgage_loan_borro.html> (accessed May 20, 2006).

Kotlikoff, Laurence J. 1988. Intergenerational Transfers and Savings. *Journal of Economic Perspectives* 2(2):41–58.

LoanPerformance®. 2006. *The MarketPulse: December 2005 Data*. World Wide Web page <http://www.loanperformance.com/market_pulse/default.aspx> (accessed July 29).

Lupton, Joseph, and Frank Stafford. 2000. Five Years Older: Much Richer or Deeper in Debt? Working paper. University of Michigan, Institute for Social Research. Presented at the Allied Social Science Meetings, Boston. January 7–9.

Masnick, George S. 1996. The Consequences of Delayed Marriage and Remarriage on the Age Differences between Brides and Grooms. Research Note N96–5. Harvard University, Joint Center for Housing Studies.

Masnick, George S. 2002. The New Demographics of Housing. *Housing Policy Debate* 13(2):275–321.

Masnick, George S., and Zhu Xiao Di. 2003. Projections of U.S. Households by Race/Hispanic Origin, Age, Family Type, and Tenure to 2020: A Sensitivity Analysis. U.S. Department of Housing and Urban Development, Office of Policy Development and Research. *Issue Papers on Demographic Trends Important to Housing*, February, pp. 79–123.

McCarthy, Jonathan, and Richard W. Peach. 2004. Are Home Prices the Next Bubble? *Federal Reserve Bank of New York Current Issues in Economics and Finance* 10(3):1–17.

Mortgage Bankers Association. 2006. *National Delinquency Survey*. Washington, DC.

Nothaft, Frank E., and Yan Chang. 2004. Refinance and the Accumulation of Home Equity Wealth. Conference Paper BABC04–10. Harvard University, Joint Center for Housing Studies.

Quinn, Joseph. 2000. Retirement Trends in the New Century: The End of an Era? *TIAA-CREF Participant* (November):14–15.

Schafer, Robert. 1999. Housing America's Elderly Population. Working Paper W99–4. Harvard University, Joint Center for Housing Studies.

U.S. Bureau of the Census. 2000a. *2000 Census Summary File 3*. World Wide Web page <http://factfinder.census.gov/servlet/DTTable?_bm=y&-ds_name=DEC_2000_SF3_U&-CONTEXT=dt&-mt_name=DEC_2000_SF3_U_HCT007&-redoLog=false&-_caller=geoselect&-geo_id=01000US&-format=&-_lang=en> (accessed July 27, 2006).

U.S. Bureau of the Census. 2000b. *Joint Center Tabulations of 1 Percent Public Use Micro-data Sample (PUMS) Files*. World Wide Web page <<http://www.census.gov/Press-Release/www/2003/PUMS.html>> (accessed July 27, 2006).

U.S. Bureau of the Census. 2003a. *Income in the United States: 2002*. Current Population Reports, P60–221, August. Washington, DC.

U.S. Bureau of the Census. 2003b. *Housing Costs of Homeowners: 2000*. Census 2000 Brief C2KBR–27, September. Washington, DC.

Venti, Steven F., and David A. Wise. 1989. Aging, Moving, and Housing Wealth. In *The Economics of Aging*, ed. David A. Wise, 9–48. Chicago: University of Chicago Press.

Venti, Steven F., and David A. Wise. 1990. But They Don't Want to Reduce Housing Equity. In *Issues in the Economics of Aging*, ed. David A. Wise, 13–29. Chicago: University of Chicago Press.

Venti, Steven F., and David A. Wise. 2000. Aging and Home Equity. Working Paper No. W7882. National Bureau of Economic Research.

