

# The Success of the U.S. Retirement System

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## Key Findings

- » **The U.S. retirement system has successfully provided adequate retirement resources to generations of Americans.** Studies that examine spending, income, and wealth conclude that households, on average, maintain their standard of living in retirement. By some measures, retirees appear to be better off than other segments of the population: in 2011, a lower percentage of the population aged 65 or older lived in poverty (9 percent) than the percentage aged 18 to 64 (14 percent) or the percentage younger than 18 (22 percent).
- » **To date, successive generations of retirees have been better off than previous generations.** Analysis shows that, on average, more-recent generations of households have higher levels of resources to draw on in retirement than previous generations. Other measures also indicate improvements in retiree well-being. For example, the poverty rate among people aged 65 or older has declined from nearly 30 percent in 1966 to 9 percent in 2011.
- » **The shift in private-sector retirement plans from predominantly defined benefit (DB) plans to predominantly defined contribution (DC) plans is unlikely to reduce retirement preparedness.** The extent to which previous generations of retired households relied on income generated by private-sector DB plans is often exaggerated. Since 1975, the prevalence of income generated by private-sector retirement plans of all types (measured by both the share of retirees with the income and the amount of income) has increased substantially. In fact, because they are better suited to the mobile U.S. workforce, several studies conclude that the shift from DB plans to DC plans in the private sector will increase retirement resources for most households.
- » **The focus of household saving changes over the life cycle.** In 2010, only 14 percent of households younger than 35 reported that retirement was their primary savings goal, compared with nearly half of households aged 50 to 64. Younger households typically are focused on other goals: 32 percent of households younger than 35 reported that saving for education, homes, or other large purchases was their primary saving goal. Because households may choose to save for retirement when older, it is difficult to assess retirement preparedness for households that are not in or near retirement.
- » **Rather than the traditional three-legged stool analogy, a pyramid is a more accurate depiction of the resources Americans rely on in retirement.** The retirement resource pyramid has five components: Social Security; homeownership; employer-sponsored retirement plans (DB and DC); IRAs; and other assets. Households do not rely on each resource equally; the composition of the retirement resource pyramid varies across households.
- » **Social Security benefits provide a broad base of resources for nearly all retirees.** Social Security has evolved into a system that provides substantial retirement resources throughout the income and wealth distribution, and provides the primary retirement resource for workers with low lifetime earnings. For workers born in the 1940s, Social Security is projected to replace 70 percent of average lifetime earnings for the bottom 20 percent of earners and 29 percent of average lifetime earnings for the top 20 percent of earners.

- » **For many households, the homes they live in represent the second most important retirement resource after Social Security.** Older households are more likely to own their homes; more likely to own their homes without mortgage debt; and, if they still have mortgages, are more likely to have small mortgages relative to the value of their homes. Retired households typically access this resource simply by living in their homes and not paying rent.
- » **Employer-sponsored retirement plans and IRAs play a complementary role to Social Security benefits, increasing in importance for households for whom Social Security replaces a smaller share of earnings.** Nevertheless, employer-sponsored plans and IRAs are an important resource for households regardless of income or wealth. In 2010, about 80 percent of near-retiree households had accrued benefits in retirement plans or IRAs. Nearly half of near-retiree households with income less than \$30,000; 71 percent of near-retiree households with income of \$30,000 to \$54,999; and 94 percent of near-retiree households with income of \$55,000 or more had retirement accumulations.

## Introduction

This study examines the empirical evidence on the effectiveness of the U.S. retirement system. The empirical evidence demonstrates that the U.S. retirement system is successful. On average, households are able to maintain their standard of living in retirement. To the extent that there has been a trend in retiree well-being, measures such as income, wealth, and poverty rates show that successive generations of retired households have become better off—not worse off—over time. The U.S. retirement system will face many challenges and—as has always been the case—the future is uncertain. However, changes to private-sector retirement saving—in particular, the growing importance of employer-sponsored defined contribution (DC) retirement plans and individual retirement accounts (IRAs)—do not represent a major challenge for the system. To date, the shift to a more account-based system has not been associated with a reduction in the income of retired households, and there is reason to believe that many households will benefit from this shift.

The U.S. retirement system has five key components. For retirees as a group, Social Security benefits represent the largest component of retirement resources. For some retirees, homeownership represents the second most important resource. By owning rather than renting the house that they live in, these households do not need to generate as much monthly income in retirement. Employer-sponsored retirement plans—including both defined benefit (DB) plans and DC plans—and IRAs provide a supplement to Social Security benefits. In fact, for many households, retirement plans and IRAs are more valuable than either their Social Security benefits or the equity they have in their homes. Although less important on average, retirees also rely on other assets in retirement—assets such as financial holdings outside of retirement plans and IRAs, investment real estate, and business investments. The importance of these five components in providing retirement resources differs from household to household. In their entirety, these five components have allowed recent generations of retirees, on average, to maintain their standard of living in retirement.

The first section of this paper illustrates that saving for retirement is one of many savings goals of U.S. households; moreover, the focus of household saving changes over the life cycle and varies with household income. The second section introduces a new way to think about retirement planning in the United States: the retirement resource pyramid. In the third section, the success of the U.S. retirement system is evaluated using various measures. The sections that follow describe the five key building blocks of the U.S. retirement system, the roles they play, and how those roles have evolved. Estimates of the components of the retirement resource pyramid are provided for households approaching retirement to analyze how the pyramid differs across households nearing retirement. Some insights into what current trends suggest about the future of retirement are explored, including discussions of the likely impact of the shift among private-sector employers from DB retirement plans to DC retirement plans, and the major risks faced by future retirees. A summary of the key results concludes the paper.

## Households' Savings Goals

Households have many savings goals and the goals vary across the life cycle and across income groups. In addition to saving for retirement, households save to fund education expenses, to purchase homes, to pre-fund other large purchases, or to have cash on hand for emergencies or unexpected needs (liquidity). The Survey of Consumer Finances (SCF) asks households their most important motivation for saving.<sup>1</sup> In the 2010 SCF, 35 percent of U.S. households listed saving for liquidity as their most important reason for saving (Figure 1). In fact, regardless of age or income, liquidity is an important motivation for saving for a substantial portion of households. Retirement was the next most common reason, with 30 percent of households listing retirement as the primary reason they save.<sup>2</sup> Another 23 percent of U.S. households listed education, buying homes, or saving for other large purchases as their primary savings goal.

Retirement is not the most important reason to save for all households, and it is often not the most important reason to save for any given household in every stage of life. For this reason, it is difficult to assess the adequacy of retirement resources for households other than those near or in retirement.

## Focus of Saving Changes over the Life Cycle

As households approach retirement age, they become more focused on saving for retirement. For example, in 2010, only 14 percent of households with a household head younger than 35 saved primarily for retirement; 32 percent of these households cited education, homes, or large purchases as the primary reason they saved (Figure 1). Those numbers are reversed for older households aged 50 to 64: nearly half of these households reported that retirement was their primary savings goal and only 15 percent reported that saving for education, homes, or large purchases was their primary savings goal.

The household survey data showing that older households are more focused on retirement saving are consistent with economic models of life-cycle consumption, which predict that households rationally delay saving for retirement until later in their working careers when they typically have higher earnings. It is not that younger households do not save, but rather that they typically save for other reasons. Often the first savings priority for a household is to build up a rainy-day fund. In addition, younger, newly formed households often invest in their future in ways that do not result in the accumulation of financial assets or formal retirement savings. Examples include purchasing a home; purchasing consumer durables such as vehicles, appliances, and furniture; funding education; and raising children. These households may choose to focus on saving for retirement when older.

FIGURE 1

**Households' Primary Reasons for Saving Vary by Age***Percentage of U.S. households by age, 2010*

Primary reason for saving	All households	Age of head of household			
		Younger than 35	35 to 49	50 to 64	65 or older
<b>Retirement</b>	<b>30</b>	<b>14</b>	<b>29</b>	<b>48</b>	<b>24</b>
<b>Liquidity (cash on hand, emergencies, unexpected needs)</b>	<b>35</b>	<b>39</b>	<b>35</b>	<b>30</b>	<b>39</b>
<b>Education, home, or large purchases</b>	<b>23</b>	<b>32</b>	<b>27</b>	<b>15</b>	<b>19</b>
Education	8	11	16	4	2
Buy own home	3	9	3	1	(*)
Large purchases	12	12	9	10	17
<b>Other</b>	<b>8</b>	<b>14</b>	<b>6</b>	<b>4</b>	<b>11</b>
Investments	1	2	1	1	1
For the family	6	11	5	3	6
No particular reason	1	1	1	1	4
<b>Cannot or do not save</b>	<b>4</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>7</b>
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

(\*) = less than 0.5 percent

Note: Components may not add to the total because of rounding.

Source: Investment Company Institute tabulations of the 2010 Survey of Consumer Finances

**Focus of Saving Varies with Household Income**

Households at different income levels also have different primary reasons for saving. Having cash on hand in the event of emergency or unexpected need (liquidity) was an important reason to save for all income and age groups (Figure 2). However, regardless of their age, households with lower incomes were more likely to report liquidity as their primary reason for saving. Among households aged 35 to 49 in 2010, 34 percent of households with income less than \$25,000 indicated that liquidity was their primary savings goal, compared with 28 percent of households with income of \$100,000 or more (Figure 2, top panel). A similar pattern by income is seen among households aged 50 to 64 (Figure 2, lower panel).

Saving for education, homes, or large purchases is more important to households with lower incomes than saving for retirement. For example, among households aged 35 to 49 in 2010, 36 percent of households with income less than \$25,000 reported that saving for education, homes, or large purchases was their primary reason for saving, compared with 23 percent of households with income of \$100,000 or more (Figure 2, top panel). At all levels of income, older households were less likely to save primarily for these reasons. Among households aged 50 to 64 in 2010, 26 percent of households with income less than \$25,000 cited saving for education, homes, or large purchases as their primary reason to save, compared with 10 percent of households with income of \$100,000 or more (Figure 2, lower panel).



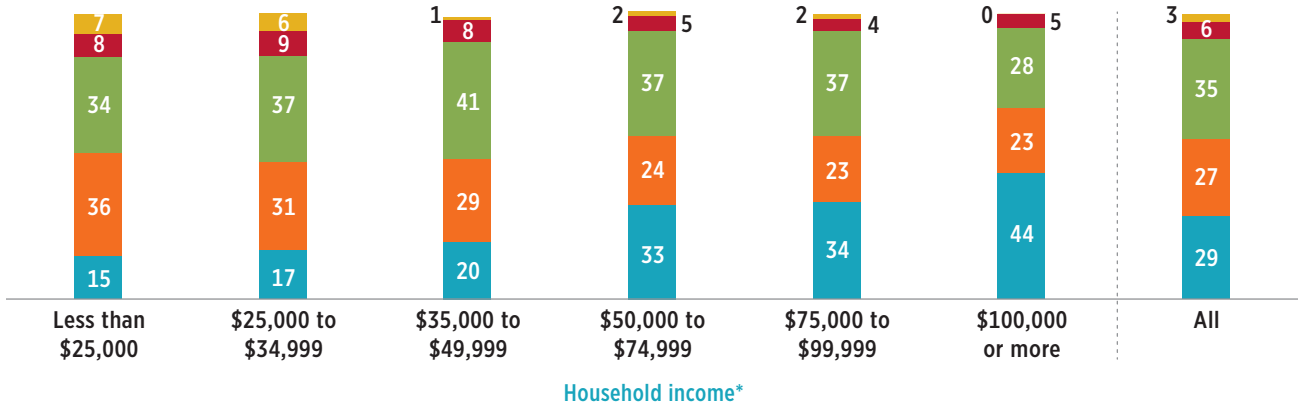
FIGURE 2

## Households' Primary Reasons for Saving Vary with Household Income

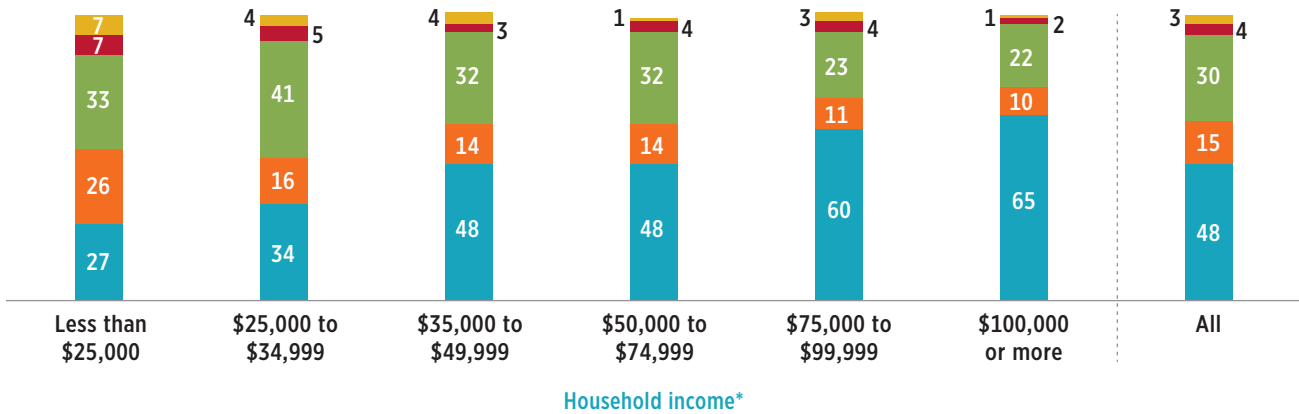
### Primary reason for saving

- Cannot or do not save
- Other (investments, for the family, no particular reason)
- Liquidity (cash on hand, emergencies, unexpected needs)
- Education, home, or large purchases
- Retirement

Percentage of households with household head aged 35 to 49 by household income,\* 2010



Percentage of households with household head aged 50 to 64 by household income,\* 2010



\*Total is household income before taxes in 2009.

Note: Components may not add to 100 percent because of rounding.

Source: Investment Company Institute tabulations of the 2010 Survey of Consumer Finances

In contrast to other reasons to save, the focus on saving for retirement increases with household income. For example, among households aged 35 to 49 in 2010, 15 percent of households with income less than \$25,000 said retirement was their primary reason for saving, compared with 44 percent of households with income of \$100,000 or more (Figure 2, top panel). Among households aged 50 to 64 in 2010, 27 percent of households with income less than \$25,000 indicated retirement was their primary reason for saving, compared with 65 percent of households with income of \$100,000 or more (Figure 2, lower panel).

One reason lower-income households may be less focused on saving for retirement is that, with limited resources, they prioritize saving for liquidity. Another reason is that the Social Security benefit formula is highly progressive and results in benefits that replace a much higher percentage of earnings for workers with lower lifetime income.<sup>3</sup> The result is that—at any given age—lower-income households tend to be less focused on saving to supplement Social Security in retirement.

### **Using Focus on Retirement Savings to Understand Statistics on Retirement Plan Coverage**

Understanding differences between households in their motivation for saving can provide insight into statistics on employer-sponsored retirement plan coverage. Using Current Population Survey (CPS) data for 2011,<sup>4</sup> Brady and Bogdan (2012a) find that 50 percent of private-sector wage and salary workers were employed by firms that sponsored retirement plans (including both DB and DC plans). However, access to retirement plans is not random. Workers who are part of groups who tend to be more focused on saving for retirement also are much more likely to work for employers that offer plans. For example, limiting the analysis to full-time, full-year workers aged 30 to 64, access to retirement plans increases to 60 percent. If the analysis is narrowed further to the groups of workers most likely to be focused on saving for retirement—workers aged 30 or older with at least moderate levels of earnings and all but the lowest-earning workers aged 45 or older—then 69 percent work for employers that sponsor plans. In addition, some in this group without access to plans at their own employers have access to plans through their spouses' employers. Taking into account access through spouses, 74 percent of workers who are likely to be focused on saving for retirement have access to employer-provided retirement plans, and 93 percent participate in the plans offered.

Looking at the percentage of all workers who have access to retirement plans at their employers at any single point in time understates the share of the population who will reach retirement with work-related retirement benefits. Many young workers, low-wage workers, or part-time workers are more concerned with saving for a rainy day, to purchase homes, or to fund education than they are with saving for retirement. However, young workers do not remain young throughout their working careers, and many low-wage and part-time workers do not remain low-wage and part-time throughout their careers. Many workers who do not have access to employer-sponsored retirement plans today will have access to a plan—either through their own employers or their spouses' employers—prior to retirement.

## The U.S. Retirement System: A Retirement Resource Pyramid

Households rely on many types of resources in retirement and the role each type plays has changed over time and varies across households. The traditional analogy is that retirement resources are like a three-legged stool. This analogy implies that everyone should have resources divided equally among Social Security, employer-sponsored pension plans, and private savings. This is not currently, nor has it ever been, an accurate picture of Americans' retirement resources. A pyramid is a better representation of retirement resources.

The retirement resource pyramid has five basic components, which draw from government programs, deferral of compensation until retirement, and other savings. The five components of the retirement resource pyramid are Social Security; homeownership; employer-sponsored retirement plans (both private-sector employer and government employer plans, as well as both DB and DC plans); IRAs (including rollovers); and other assets.

At the base of the retirement resource pyramid is Social Security (Figure 3). Social Security covers households across all levels of earnings; however, it replaces the largest portion of average lifetime earnings for households with low lifetime earnings.

A resource available to the vast majority of retired households is the home in which they live (Figure 3). Homeownership increases with age and is high across all income groups among near-retiree households. Households who own homes often have no or low mortgage debt by the time they reach retirement age. Households do not have to sell their homes to benefit from them in retirement; they simply have to live in them. Homeownership is like having an annuity that provides rent, as the home provides a place to live that otherwise would have to be rented.<sup>5</sup>

The next two layers of the retirement resource pyramid consist of accumulations in employer-sponsored retirement plans (both private-sector employer and government employer plans, as well as both DB and DC plans) and IRAs (both contributory and those resulting from rollovers from employer-sponsored plans) (Figure 3). In 2010, the SCF data show that accrued benefits and asset accumulations in employer-sponsored retirement plans and IRAs constituted a resource for about 80 percent of near-retiree households. Near-retiree households across all income groups have these retirement benefits, but employer-sponsored retirement plans and IRAs typically provide a larger share of resources for higher-income households.

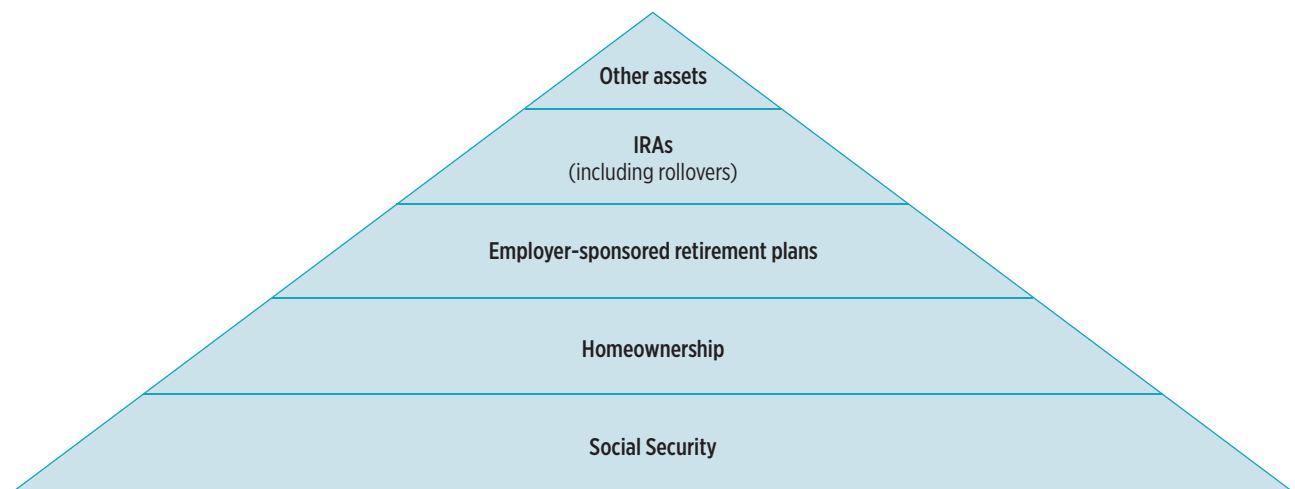
Finally, at the top of the retirement resource pyramid are other assets that a household may own (Figure 3). These assets can be financial assets—including bank deposits and stocks, bonds, and mutual funds owned outside of employer-sponsored retirement plans and IRAs; and nonfinancial assets—including business equity, nonresidential property, second homes, vehicles, and consumer durables (long-lived goods such as household appliances and furniture). Assets in this category tend to be owned more frequently by higher-income households.

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FIGURE 3

### Retirement Resource Pyramid

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Source: Investment Company Institute

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## Evidence of the Success of the U.S. Retirement System

Generations of retirees have benefitted from the resources provided to them by the U.S. retirement system, and the empirical evidence demonstrates that, on average, retirement outcomes have improved over time. The amount of assets earmarked for use during retirement has increased over time and successive generations of households have reached retirement with higher levels of wealth, on average, than prior generations. Furthermore, poverty rates for people aged 65 or older have fallen over time. In addition, expenditure and income data generally indicate that households are able to maintain their standard of living when they retire. Finally, research finds that retirees, on average, maintain sufficient wealth to generate as much income as they could when first retired.

### Assets Earmarked for Retirement over Time

The amount of assets earmarked for retirement has grown, even when adjusted for inflation and growth in the number of U.S. households.

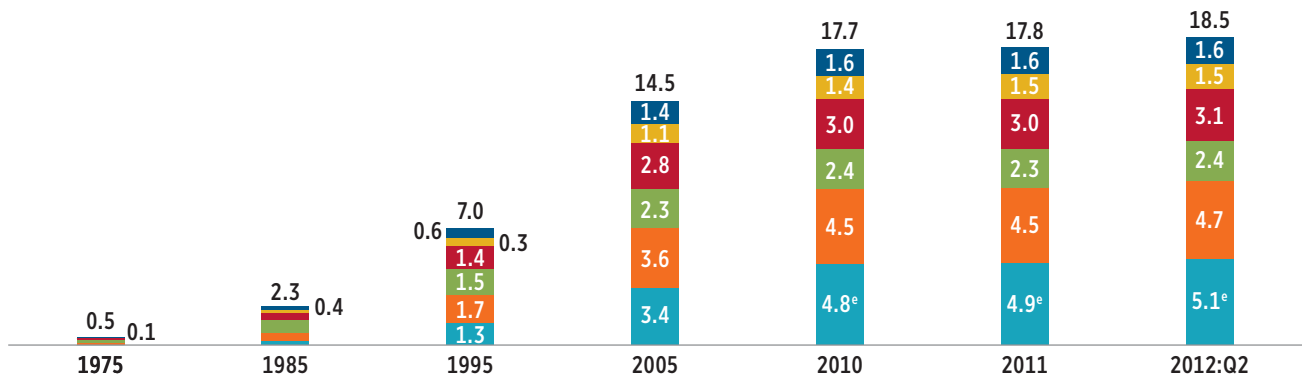
Assets earmarked for retirement include IRAs, DC plans, private-sector DB plans, state and local government pension plans, federal pension plans, and annuities. In mid-2012, total retirement assets stood at \$18.5 trillion (Figure 4, top panel) and accounted for 36 percent of U.S. households' financial assets.<sup>6</sup> DC plans and IRAs accounted for \$9.8 trillion, or more than half, of total retirement assets. Fueled in significant part by rollovers from employer-sponsored retirement plans (both DB and DC; both private-sector employer and government employer plans), IRAs represented more than one-quarter of the total U.S. retirement assets in mid-2012, compared with about 10 percent in 1985. DC plans, which include 401(k) plans, 403(b) plans, and 457 plans, also have risen in share over the past two decades, largely the result of private-sector adoption of 401(k) plans. Despite the decline in private-sector DB plans, such plans had assets of \$2.4 trillion in mid-2012, and they continue to pay benefits to retirees.<sup>7</sup> Federal, state, and local government plans had \$4.6 trillion in mid-2012, predominantly in DB plans.<sup>8</sup>

FIGURE 4

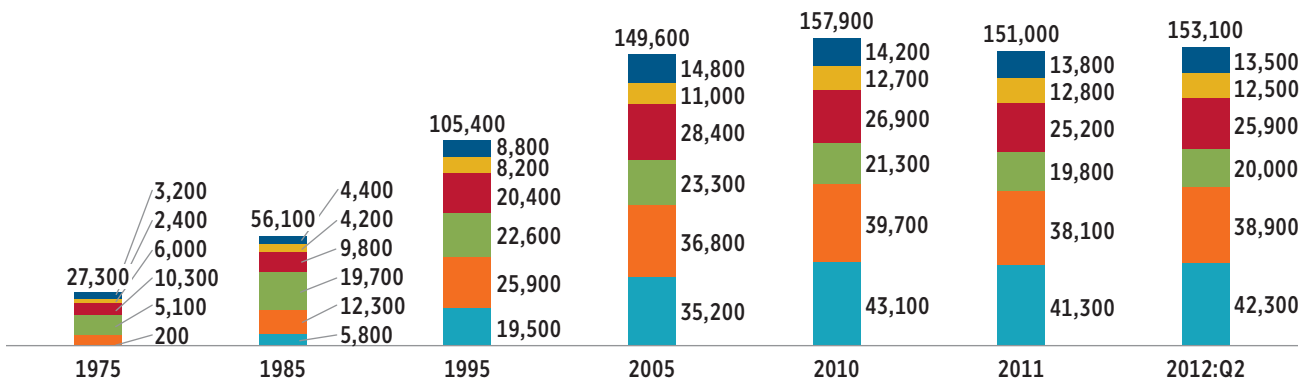
## Retirement Assets Have Grown over Time

- Annuities<sup>1</sup>
- Federal pension plans<sup>2</sup>
- State and local government pension plans
- Private DB plans
- DC plans<sup>3</sup>
- IRAs

U.S. total retirement market assets, trillions of (nominal) dollars, end-of-period, selected dates



Average retirement assets per U.S. household, constant 2012 dollars, rounded to nearest \$100, end-of-period, selected dates



<sup>1</sup> Annuities include all fixed and variable annuity reserves at life insurance companies less annuities held by IRAs, 403(b) plans, 457 plans, and private pension funds. Some of these annuity reserves represent assets of individuals not specifically for retirement; however, information to separate out such reserves is not available. Because annuities held in IRAs, 457 plans, and 403(b) plans are netted from the flow of funds accounts annuities (life insurance pension fund reserves) figure and reported in their respective categories by ICI, ICI reports a lower annuities total than the flow of funds accounts (see U.S. Federal Reserve Board 2012a).

<sup>2</sup> Federal pension plans include U.S. Treasury security holdings of the civil service retirement and disability fund, the military retirement fund, the judicial retirement funds, the Railroad Retirement Board, and the foreign service retirement and disability fund. These plans also include securities held in the National Railroad Retirement Investment Trust and Federal Employees Retirement System (FERS) Thrift Savings Plan (TSP). Although the TSP is similar to a 401(k) plan, assets held by the TSP are included in federal government retirement assets and are not included in the DC plan total. At year-end 2011, the TSP held \$298 billion in net assets. For more details regarding the TSP, see Clifton Larson Allen LLP 2012.

<sup>3</sup> This category includes 403(b) plans, 457 plans, and private employer-sponsored DC plans (including 401(k) plans).

<sup>e</sup> Data are estimated.

Note: Components may not add to the total because of rounding.

Sources: Investment Company Institute; U.S. Federal Reserve Board; National Association of Government Defined Contribution Administrators; American Council of Life Insurers; Internal Revenue Service, Statistics of Income Division; U.S. Department of Commerce, U.S. Census Bureau; U.S. Department of Labor, Bureau of Labor Statistics; and U.S. Department of Labor, Employee Benefit Security Administration

Even when adjusted for both inflation and growth in the number of U.S. households, assets specifically earmarked for retirement have increased significantly over time. As of June 30, 2012, the average amount of retirement assets per U.S. household, adjusted for inflation, was 2.7 times higher than in 1985, and 5.6 times higher than in 1975 (Figure 4, lower panel). In constant 2012 dollars, average retirement assets per U.S. household were approximately \$153,100 in mid-2012, compared with about \$56,100 in 1985 and about \$27,300 in 1975.

### **Wealth and Retirement Accumulations of Successive Generations**

Data show that more recent cohorts of retirees tend to enter retirement wealthier than previous cohorts. Haveman et al. (2007) use data from two surveys—the New Beneficiary Survey (NBS) and the Health and Retirement Study (HRS)—to construct a comprehensive measure of wealth that includes the present value of Social Security benefits and DB pensions.<sup>9</sup> The authors find that new retirees in the mid-1990s had higher levels of wealth than new retirees in the early-1980s. Compared with new retirees in the early 1980s, wealth for new retirees in the mid-1990s was 60 percent higher for married couples and about 35 percent higher for single men and women. A more recent study suggests that this trend has continued. Using HRS data, Gustman, Steinmeier, and Tabatabai (2009) construct a similarly comprehensive measure of wealth and compare three groups of households approaching retirement: those aged 51 to 56 in 1992; those aged 51 to 56 in 1998; and those aged 51 to 56 in 2004. The authors find that each successive cohort approaching retirement was wealthier, with the 2004 cohort 7 percent wealthier than the 1998 cohort and 12 percent wealthier than the 1992 cohort.

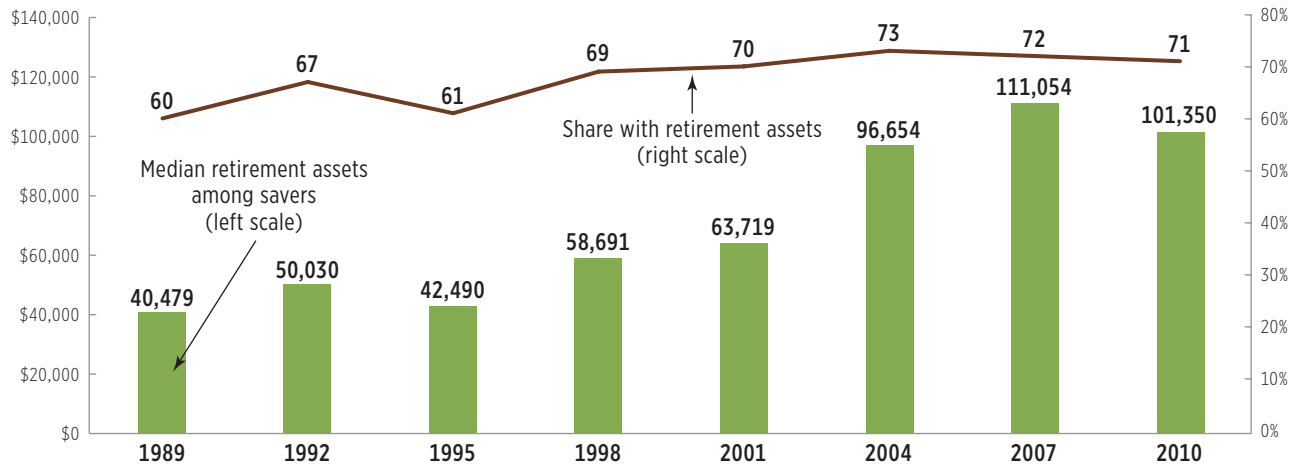
The global financial crisis of 2008 and the great recession (December 2007 through June 2009) negatively impacted the wealth of households across the board.<sup>10</sup> Coming after the bear market and recession earlier in the decade, the financial crisis and great recession represented the second time household balance sheets had taken a substantial hit in less than 10 years. Nevertheless, over the past decade, wealth and financial assets held up better for older households than younger households. Bricker et al. (2012) report that between 2001 and 2010 average net worth fell for most age groups, but it fell less for households aged 55 to 64 than younger age groups and actually rose for households aged 65 or older.

Further, although retirement assets fell between 2007 and 2010, assets in retirement accounts fell less than other assets and grew as a portion of household financial asset holdings. Looking over a longer period and focusing on near-retiree households, the SCF data show their retirement assets have increased substantially, despite the recent drop in value. For example, since 2001, about seven in 10 near-retiree households had DC plan assets, IRAs, or both (Figure 5). In addition, the median amount of retirement assets was \$101,350 in 2010, compared with \$63,719 in 2001 (in 2010 dollars).

FIGURE 5

### Real Median Balance and Percentage of Near-Retiree Households with Retirement Assets

*Near-retiree households, assets expressed in constant 2010 dollars, 1989–2010*



Note: Retirement assets include assets in IRAs and DC plan accounts. Near-retiree households are households with a working head aged 55 to 64, excluding the top and bottom 1 percent of the income distribution.

Source: Investment Company Institute tabulations of the 1989–2010 Survey of Consumer Finances

#### Near-Retiree Households Analyzed in This Paper

To provide insight into what Americans have accumulated to prepare for retirement, this paper uses the Survey of Consumer Finances (SCF) to analyze households headed by a working individual aged 55 to 64, which are identified as near-retiree households. In the SCF, a head of household is the male in a mixed-sex couple or the older person in a same-sex couple. The SCF collects data on household total income before taxes for the calendar year preceding the survey. For the analysis in this paper, a near-retiree household is defined as a household in the 2010 SCF that is headed by a working individual aged 55 to 64, excluding the top and bottom 1 percent of the income distribution.

Note: For a brief description of the SCF, see Figure A.1 in the appendix. For a summary of findings from the 2010 SCF, see Bricker et al. (2012).

## Poverty Among Older Individuals over Time

One way to measure the success of the U.S. retirement system is to consider poverty rates among the elderly. The poverty rate among individuals aged 65 or older has declined substantially since 1966 (Figure 6). In 1966, nearly 30 percent of people aged 65 or older had income below the poverty line. In 2011, the poverty rate for this group stood at 9 percent. Even during the great recession, the poverty rates among the elderly declined slightly. In fact, poverty rates for people aged 65 or older are lower than poverty rates for both the working-age population and children. In 2011, only 9 percent of people aged 65 or older had income below the poverty line, compared with 14 percent of people aged 18 to 64, and 22 percent of people younger than 18.<sup>11</sup>

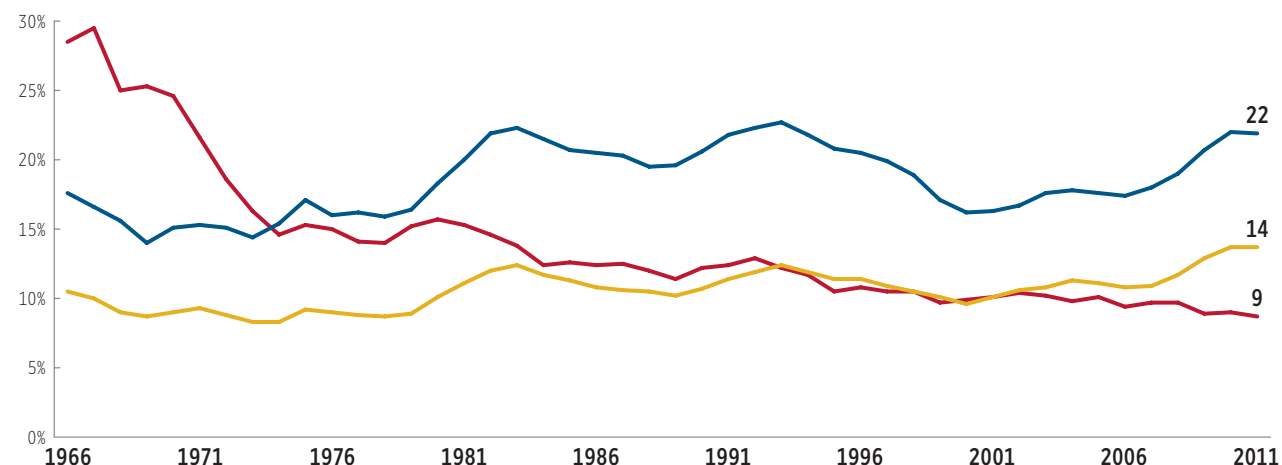
FIGURE 6

### Poverty Rates Among People Aged 65 or Older Have Fallen over Time

*Poverty rates by age, percentage of individuals in age group, 1966–2011*

#### Individual's age

- Younger than 18
- 18 to 64
- 65 or older



Source: U.S. Census Bureau, Current Population Survey: 1967 to 2012 Annual Social and Economic Supplements

## Changes in Households' Standard of Living at Retirement

It is difficult to measure retiree well-being directly. One approach to determine if households can maintain their standard of living in retirement is to compare a household's actual wealth to a prediction of optimal wealth accumulation. Another approach is to analyze factors that impact standard of living—such as consumption and income. The data illustrate that the U.S. retirement system provides most households with sufficient resources to maintain their standard of living in retirement.



## Wealth Accumulations at Retirement and Optimal Wealth

Research suggests that most U.S. households nearing retirement have accumulated wealth that is equal to or greater than the optimal amount of wealth they should have accumulated, as predicted by a life-cycle model of consumption. Life-cycle models assume that individuals maximize lifetime well-being (or utility) by optimally choosing consumption (and thus savings) over the course of their lifetime.<sup>12</sup> Using HRS data combined with administrative data on lifetime earnings, Scholz, Seshadri, and Khitatrakun (2006) use a life-cycle model to solve for the optimal amount of wealth for each household and compare that to each household's actual wealth accumulations. They find that, among households aged 51 to 61 in 1992, fewer than 20 percent of households had wealth less than the target amount, and that, among these households, projected shortfalls were small—on average about \$5,000.<sup>13</sup>

## Retiree Consumption

Research on retirees' consumption patterns suggests that retired households generally maintain their lifestyles when they transition into retirement. Hurd and Rohwedder (2008) analyze HRS data and find that, other than those who retired because of poor health, spending declines by only a small amount when a person retires.<sup>14</sup> The small declines can be explained by reductions in food and work-related expenditures. In other research, Hurst (2008) analyzes Consumer Expenditure Survey (CEX) data and also finds that most of the declines in spending near retirement are due to reductions in food and work-related expenditures. When Hurst (2008) uses Universal Product Code (UPC) data tracking specific purchases to examine food expenditures more closely, he concludes that retired households pay lower prices for their grocery bills than younger households. In addition, further analysis of HRS-Consumption and Activities Mail Survey (CAMS) data by Hurd and Rohwedder (2006) finds that retirees eat at home more often.<sup>15</sup> Overall, the data suggest that retired households reduce expenditures by substituting money to purchase goods in the market for time producing goods at home, such as in food preparation or shopping research.

## Retiree Income

Another way to gain insight into retiree well-being is to analyze retirees' income. Analysis of administrative tax data shows that individuals, on average, maintain their inflation-adjusted, net-of-tax income near the time of their first claiming of Social Security benefits. Brady and Pierce (2011) use data on individuals aged 55 to 61 who did not receive Social Security benefits and who filed a tax return in 1999 to examine the transition into retirement.<sup>16</sup> The data allow the authors to follow this group of individuals through 2008 and to measure their employment-related income, which consists of wages, Social Security benefits, and distributions from employer-sponsored plans (both private-sector employer and government employer plans, as well as both DB and DC plans) and IRAs. Because the data include information reported to the IRS through information returns (such as Form W-2, Form 1099-SSA, and Form 1099-R), employment-related income can be measured even if individuals do not file a tax return in future years. To allow sufficient data for comparison, the study focuses on those individuals who first received Social Security retirement benefits at some point between 2000 and 2005 and compares the employment-related income of each individual in later years to the individual's employment-related income in the year prior to first claiming Social Security benefits.

The study finds that employment-related income, net of taxes and adjusted for inflation, remains fairly stable, on average, in the year individuals first claim Social Security benefits, and for three years thereafter (Figure 7). In the first year Social Security benefits were claimed, the median individual had inflation-adjusted after-tax employment-related income that was 107 percent of their real net employment-related income in the prior year. By the third year after claiming Social Security benefits, the median individual had real net employment-related income of 100 percent of their real net employment-related income in the year prior to claiming Social Security benefits.

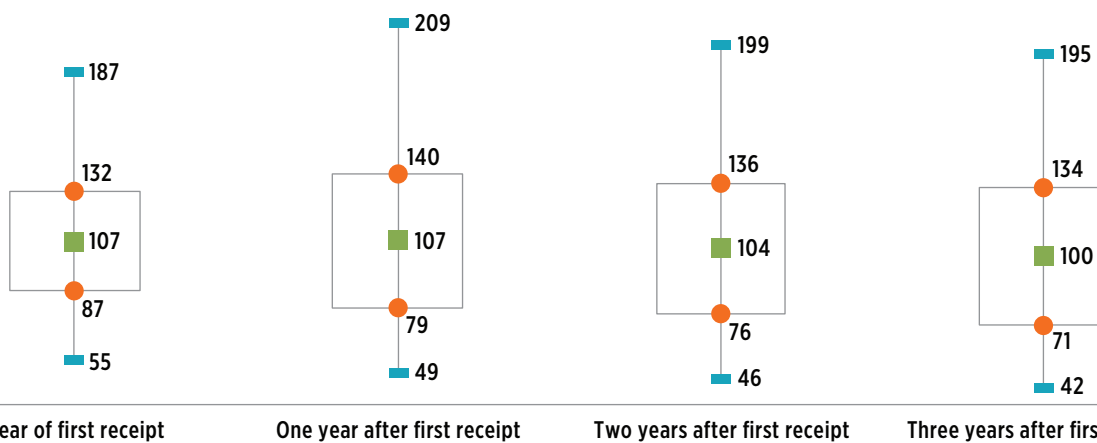
FIGURE 7

### Employment-Related Income Before and After Claiming Social Security Benefits

*Per capita<sup>1</sup> work-related income,<sup>2</sup> net of taxes and adjusted for inflation, expressed as a percentage of same measure one year prior to first receipt of Social Security retirement benefits; working individuals aged 55 to 61 in 1999 who had no Social Security benefits, filed a tax return, first received benefits between 2000 and 2005, and were alive three years after the year benefits were first received*

#### Percentile of the distribution

- 10 and 90
- 25 and 75
- Median



<sup>1</sup> For married individuals, income is the sum of work-related income from both spouses divided by two.

<sup>2</sup> Employment-related income is defined as the sum of federally taxable wages and tips reported on Form W-2, pension and IRA distributions reported on Form 1099-R, and Social Security benefits reported on Form 1099-SSA; less the sum of IRA contributions reported on Form 5498 and Roth contributions to an employer plan reported on Form W-2; less the sum of federal income taxes (if filing a tax return) and payroll taxes (if working).

Source: Brady and Pierce 2011; analysis of tax return data provided by the Statistics of Income Division of the Internal Revenue Service

## Changes in Household Wealth in Retirement

Households may begin retirement with sufficient resources, but this does not necessarily mean that they are able to maintain those resources through many years of retirement. However, studies that examine households later in retirement find that retirees, on average, maintain sufficient wealth to generate as much income as they could early in retirement.<sup>17</sup> Haveman et al. (2005) analyze NBS data and report that 10 years after retirement, retirees could generate as much annual income from their wealth as they could when first retired. Love, Palumbo, and Smith (2008) use HRS data and show that the income stream that could be generated by wealth actually rose as households moved through retirement. Poterba, Venti, and Wise (2012) use HRS data to study wealth and income at the end of life. They find that, although many households had low financial assets at the end of life, income at the end of life was similar to income when the households were in their fifties and sixties.

## Components of the U.S. Retirement Resource Pyramid

This section examines the components of the U.S. retirement system, or the retirement resource pyramid, and how they have evolved. The resources often relied on by U.S. households in retirement are Social Security benefits; homeownership; work-related retirement accumulations—from both private-sector employer and government employer plans, as well as both DB and DC plans; and IRAs (including contributory and rollover). In addition, households may have other assets.

### Social Security Benefits

For most households, one of the most valuable resources is their Social Security retirement benefits. However, this resource typically is not included in measures of household wealth. Social Security is designed to be progressive; that is, it provides a higher proportion of retirement benefits relative to pre-retirement earnings for workers with low earnings than for workers with high earnings. Thus, it comprises a higher share of lower-earning households' retirement income, and if it were to be counted as an asset, would comprise a higher share of assets in such an augmented balance sheet for those households.

### Social Security Benefit Changes over Time

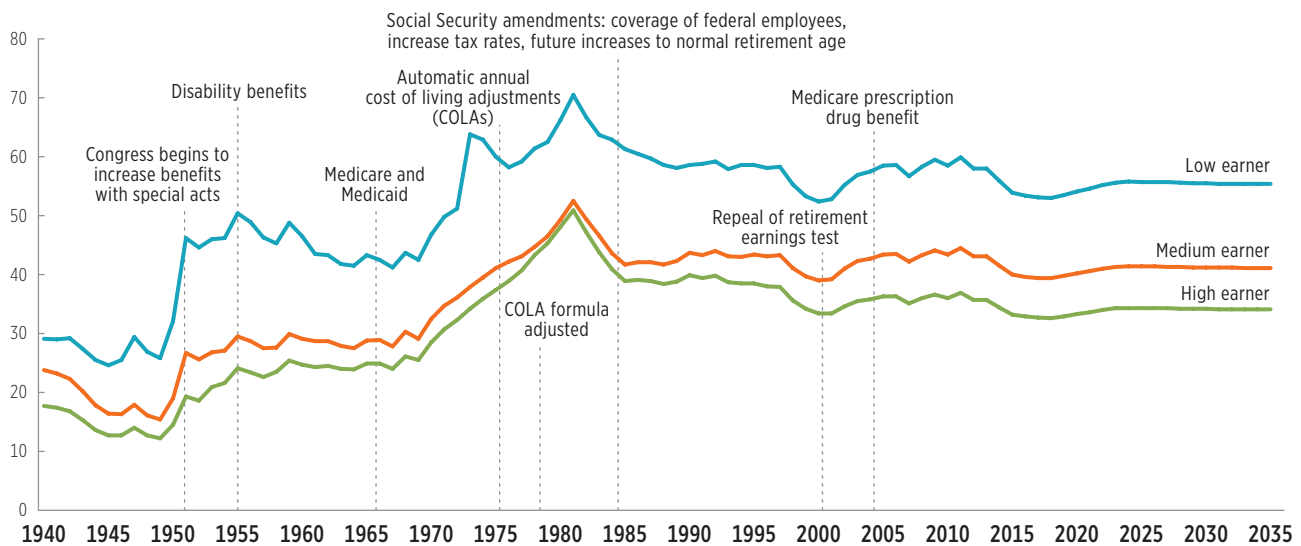
When Social Security was signed into law in 1935, it was intended to replace a modest portion of income. Changes to the system since its inception—in particular, two periods of expansion, first in the 1950s and then again in the 1970s—increased benefits substantially, especially for those with low lifetime earnings.<sup>18</sup> Described as a “cornerstone” for U.S. retirement security at its beginning,<sup>19</sup> Social Security has transformed into a comprehensive government-provided pension for workers with lower lifetime earnings and a strong foundation for retirement security for those with higher lifetime earnings.

One way to see the evolution of the Social Security system is to look at estimates of replacement rates calculated by the Social Security Administration (SSA) for hypothetical workers. Each year the SSA calculates an average wage index (AWI) that roughly corresponds to the average annual earnings for workers covered by the Social Security system.<sup>20</sup> The SSA uses the AWI to create three hypothetical workers. These hypothetical workers are “low earners,” with career average earnings approximately 45 percent of the AWI; “medium earners,” about 100 percent of the AWI; and “high earners,” about 160 percent of AWI.<sup>21</sup> In 1940, according to the SSA estimates, replacement rates at the normal retirement age (NRA), measured as first-year benefits divided by career-average wage-indexed earnings, ranged from 18 percent for a high earner to 29 percent for a low earner (Figure 8). For those retiring currently, Social Security benefits are considerably higher in real terms and are about twice as high when measured as a percentage of average earnings than when Social Security began to pay benefits. Benefits are projected to replace 36 percent of career average earnings for a high earner and 58 percent of career average earnings for a low earner. Under current law, these replacement rates are projected to remain stable into the future.<sup>22</sup>

FIGURE 8

### Social Security Replacement Rates over Time for Representative Workers

*Estimates of replacement rates (first-year benefits relative to average indexed earnings) at normal retirement age; percentage of lifetime earnings; 1940–2035*



Note: Low, medium, and high earner refer to scaled earnings that reflect patterns of work and earnings for hypothetical workers over the course of a career. Projections assume no change in current policy.

Sources: ICI summary of legislative changes and Social Security Administration, Office of the Chief Actuary

## Social Security Replacement Rates by Household Lifetime Earnings

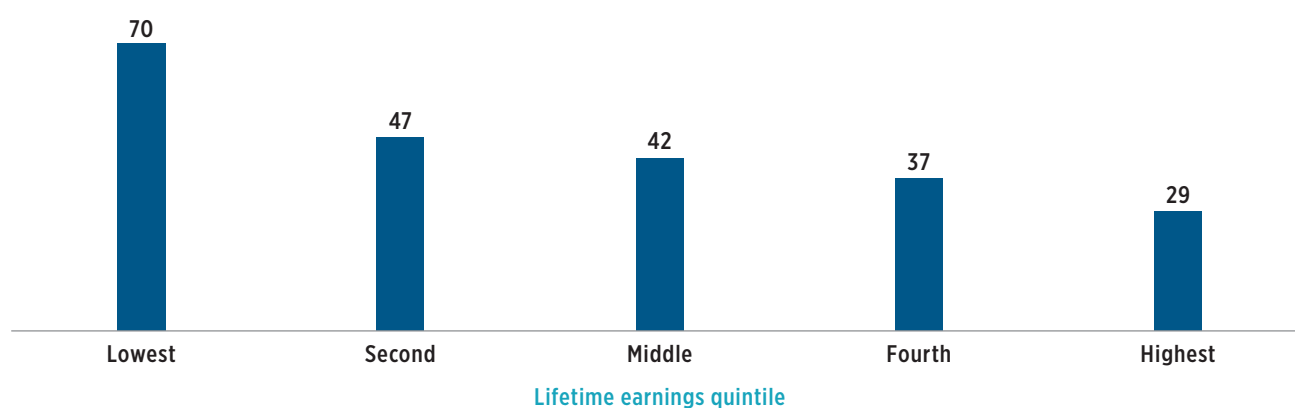
Social Security benefits vary with earnings and provide higher replacement rates for lower-earning households. The replacement rates that SSA calculates are a useful measure to calibrate the evolution of Social Security benefits over time (Figure 8). However, they are not an ideal measure of the range of replacement rates that actual workers can expect to receive under the system, as they only measure the replacement rates for three hypothetical workers.<sup>23</sup> An alternative estimate of replacement rates is produced regularly by the Congressional Budget Office (CBO). Rather than create hypothetical workers, the CBO builds a model based on the actual earning records of a large sample of workers, which allows for the calculation of replacement rates for a wider range of incomes.<sup>24</sup> To analyze how Social Security benefits differ by earnings, the CBO first groups individuals by the decade in which they were born, and then ranks individuals by household lifetime earnings.

Social Security is designed to replace a greater portion of income for lower earners because it uses a progressive formula to determine benefits.<sup>25</sup> This means that for lower earners, Social Security functions as a pension program that provides an annuity benefit that replaces a high percentage of their average lifetime earnings. For the cohort of individuals born in the 1940s, the CBO analysis shows that Social Security benefits are projected to replace 70 percent of average earnings for the typical individual in the bottom 20 percent of individuals ranked by lifetime earnings (Figure 9). The replacement rate drops to 47 percent for the second quintile, and then declines more slowly as lifetime earnings increase. Social Security benefits are projected to replace a considerable fraction of earnings—29 percent—for even the top 20 percent of earners.

FIGURE 9

### Social Security Benefit Formula Is Highly Progressive

*CBO estimates of first-year benefits relative to average indexed earnings by household lifetime earnings (median), 1940s birth cohort, percent*



Source: Congressional Budget Office (see Congressional Budget Office 2012b)

## Impact of Social Security on Poverty

The expansion of Social Security benefits likely was a major factor in the reduction in the elderly poverty rate since the late 1960s. The Social Security program has expanded since its inception in 1935 both in the scope of its coverage and in the generosity of its benefits.<sup>26</sup> The current system now covers most U.S. workers, and over the years has added spousal, survivors, dependent children's, and disability benefits.<sup>27</sup> In addition, government-provided medical benefits for low-income and elderly individuals were introduced in the mid-1960s and subsequently expanded.

The generosity of the basic benefit for those attaining the Social Security NRA—measured as the share of a worker's average lifetime earnings replaced by first-year benefits—increased substantially in the early 1950s and again in the 1970s (Figure 8). When instituted, Social Security benefits were not automatically adjusted for either inflation or wage growth. In the 1950s and 1960s, benefit increases were made periodically by special acts of Congress. Legislation enacted between 1950 and 1954 raised replacement rates for new retirees substantially. Between 1955 and 1969, the legislative adjustments kept benefits fairly stable relative to wages. Legislation passed between 1969 and 1973 led to a second jump in replacement rates. Further, legislation enacted in 1972 provided that benefits would be automatically indexed for inflation through an annual cost of living adjustment (COLA).<sup>28</sup> However, a flaw in the method used to calculate inflation-adjusted benefits led to benefits being “over-indexed” for inflation. A new benefit formula was adopted in 1977, which fixed the flaw and clawed back some of the—presumably unintended—increase in benefits caused by the method introduced in 1972.<sup>29</sup> The 1977 benefit formula is still used today and, under current law, the Social Security replacement rate at NRA is projected to remain stable for future retirees.<sup>30</sup>

When Social Security was created in 1935, it was intended to be a modest source of retirement income.<sup>31</sup> However, from its modest beginnings, Social Security has evolved to become a system designed to be the primary means of support for retirees with low lifetime earnings. The progressive benefit structure of Social Security provides workers with low lifetime earnings an income stream that replaces a substantial portion of their pre-retirement income. For workers with higher lifetime earnings, it provides a floor below which retirement income cannot fall.

## Medicare and Medicaid Provide Resources to Retirees

Other important government-sponsored resources for retirees include Medicare and Medicaid. Along with Social Security, Medicare and Medicaid are part of America's safety net for retirees.

### Medicare

The Social Security Act of 1965 created Medicare, which is financed by the federal government and individual premium payments.\* Medicare's purpose is to provide health insurance to people aged 65 or older regardless of income or medical history. Typically, to be eligible a person must be aged 65 or older, an American citizen or legal resident for five years, and have paid Medicare taxes for 10 years. Medicare benefits have expanded over time, including the addition of Part D prescription drug coverage. In 2011, 93 percent of people aged 65 or older were covered by Medicare.† Medicare provides widespread health insurance coverage, which is an important resource for retirees. In 2011, only 2 percent of Americans aged 65 or older were uninsured compared with 18 percent of Americans younger than 65.

### Medicaid

Medicaid, also created as a part of the Social Security Act of 1965, is a means-tested program that provides access to health insurance for people with low income and low financial assets.†† Medicaid is paid for by the federal government, state governments, and some county governments. In 2008, about 4.6 million low-income people aged 65 or older received benefits from Medicaid. Medicaid is an important source of funding for long-term care: in 2008, Medicaid covered nearly 41 percent of the total costs of nursing facility care.††

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\* For additional information, see U.S. Social Security Administration, Office of Retirement and Disability Policy 2012a.

† See DeNavas-Walt, Proctor, and Smith 2012.

†† See U.S. Social Security Administration, Office of Retirement and Disability Policy 2012b.

## Supplemental Security Income

An important government-sponsored resource for retirees is the Supplemental Security Income (SSI) program.\* SSI was enacted by the Social Security Amendment Act of 1972 to provide benefits to people aged 65 or older, and blind or disabled adults and children. Eligibility and federal benefits are nationally uniform, but may be supplemented by states. SSI is a means tested program for those with little or no Social Security benefits or other resources, with payment levels determined by both income and wealth. In 2011, the federal SSI benefit for those with no other income was \$674 per month for individuals and \$1,011 per month for couples. In 2010, more than 2 million people aged 65 or older received SSI benefits.†

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\* For additional information, see U.S. Social Security Administration, Office of Retirement and Disability Policy 2012c.

† See U.S. Social Security Administration, Office of Retirement and Disability Policy 2012d.

## Homeownership

For many households nearing retirement, the home that they live in is one of their most valuable assets. Not only do older households tend to be more likely to own their homes compared with younger households, they also are less likely to have mortgages on their homes. In addition, among older households with a mortgage, the amount outstanding tends to be small in comparison with the value of the home. Homeownership is a key resource available to households in retirement. Although owning a home does not directly provide a stream of income that can be used to fund consumption in retirement, it reduces monthly housing expenses. That is, retirees can live in their home and not pay rent elsewhere. In this way, homeownership reduces the need to generate regular monthly income in retirement.

### Homeownership by Household Age

**Homeownership by Birth Cohort.** The rate of homeownership tends to increase rapidly with age and then stabilize, increasing from around 30 percent for younger households to over 80 percent for older households (Figure 10, top panel).\* For example, in 1989, the homeownership rate was 30 percent for households born between 1960 and 1969 (the 1960s birth cohort) and aged 20 to 29 at the time of the survey; 71 percent for the 1940s birth cohort (aged 40 to 49 at the time of the survey); and 79 percent for the 1920s cohort (aged 60 to 69 at the time of the survey). Similarly, in 2010, the homeownership rate was 58 percent for the 1970s birth cohort (aged 31 to 40 at the time of the survey); 76 percent for the 1950s birth cohort (aged 51 to 60 at the time of the survey); and 83 percent for the 1930s birth cohort (aged 71 to 80 at the time of the survey).

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\* Figures 10 and 11 present housing-related data for households grouped by the decade in which the head of the household was born. Housing-related data are available on these households every three years from 1989 to 2010 from the SCF. For each year in which data are available, the relevant statistics are plotted at the approximate midpoint of the age range for each 10-year birth cohort. For example, in 1989, the 1950s birth cohort ranged in age from 30 years (for those born in 1959) to 39 years (for those born in 1950), and the 1989 data point for this group is plotted above age 35. In 2010, the 1950s cohort ranged in age from 51 years to 60 years, and the 2010 data point for this group is plotted above age 56. Presented in this way, patterns can be discerned both across households and over time. For the data plotted in Figure 10, see Figures A.2 and A.3 in the appendix. For the data plotted in Figure 11, see Figure A.4 in the appendix.



***Impact of Developments Between 2007 and 2010 on Homeownership.*** Between 2007 and 2010, the homeownership rate for younger birth cohorts increased less than would be expected based solely on the experience of preceding birth cohorts at the same ages. However, the relative drop in homeownership experienced during the great recession needs to be kept in perspective: as homeownership expanded prior to 2007, the rate of homeownership at any given age was higher for each successive cohort. In general, the drop in homeownership for younger birth cohorts between 2007 and 2010 simply brought their homeownership rate more in line with their predecessors.

Changes in the homeownership rates for each birth cohort between 2007 and 2010 can be seen by comparing the last two observations (the dark blue and purple dots) on each cohort's line (Figure 10, top panel).<sup>\*</sup> For example, the line for the 1970s birth cohort shows that their homeownership rate edged down from 60 percent in 2007 (when they were aged 28 to 37) to 58 percent in 2010 (when they were aged 31 to 40). However, the 58 percent rate of homeownership for the 1970s birth cohort in 2010 was not much different than the 57 percent rate of the 1950s birth cohort in 1989 (when they were aged 30 to 39) or the 57 percent rate of the 1960s birth cohort in 1998 (when they were aged 29 to 38).

### **Mortgage Debt by Household Age**

***Incidence of Mortgage Debt by Birth Cohort.*** As households age, they are more likely to own a home with no mortgage debt. In particular, there appears to be a strong tendency within cohorts to pay off mortgage debt after reaching age 50. For example, among those in the 1930s birth cohort, 33 percent of households (representing 42 percent of home-owning households in the cohort)<sup>32</sup> owned a home with no mortgage debt in 1992, when they were aged 53 to 62 (Figure 10, lower panel). This compares with 44 percent of households (representing 53 percent of home-owning households in the cohort) in the same 1930s birth cohort in 2001, when they were aged 62 to 71; and 53 percent of households (representing 64 percent of home-owning households in the cohort) in the same 1930s birth cohort in 2010, when they were aged 71 to 80.

Although the pattern of paying of mortgage debt after reaching age 50 can be seen within cohorts, younger birth cohorts appear to be somewhat less likely to own a home with no mortgage debt. This can be seen by comparing different cohorts when they were similar in age. For example, in 1989, when they were aged 60 to 69, 54 percent of all households in the 1920s birth cohort (representing 68 percent of home-owning households in the cohort) owned their homes with no mortgage debt (Figure 10, lower panel). This compares with 42 percent of all households in the 1930s birth cohort (representing 51 percent of home-owning households in the cohort) in 1998, when they were aged 59 to 68; and 35 percent of all households in the 1940s cohort (representing 42 percent of home-owning households) in 2010, when they were aged 61 to 70.

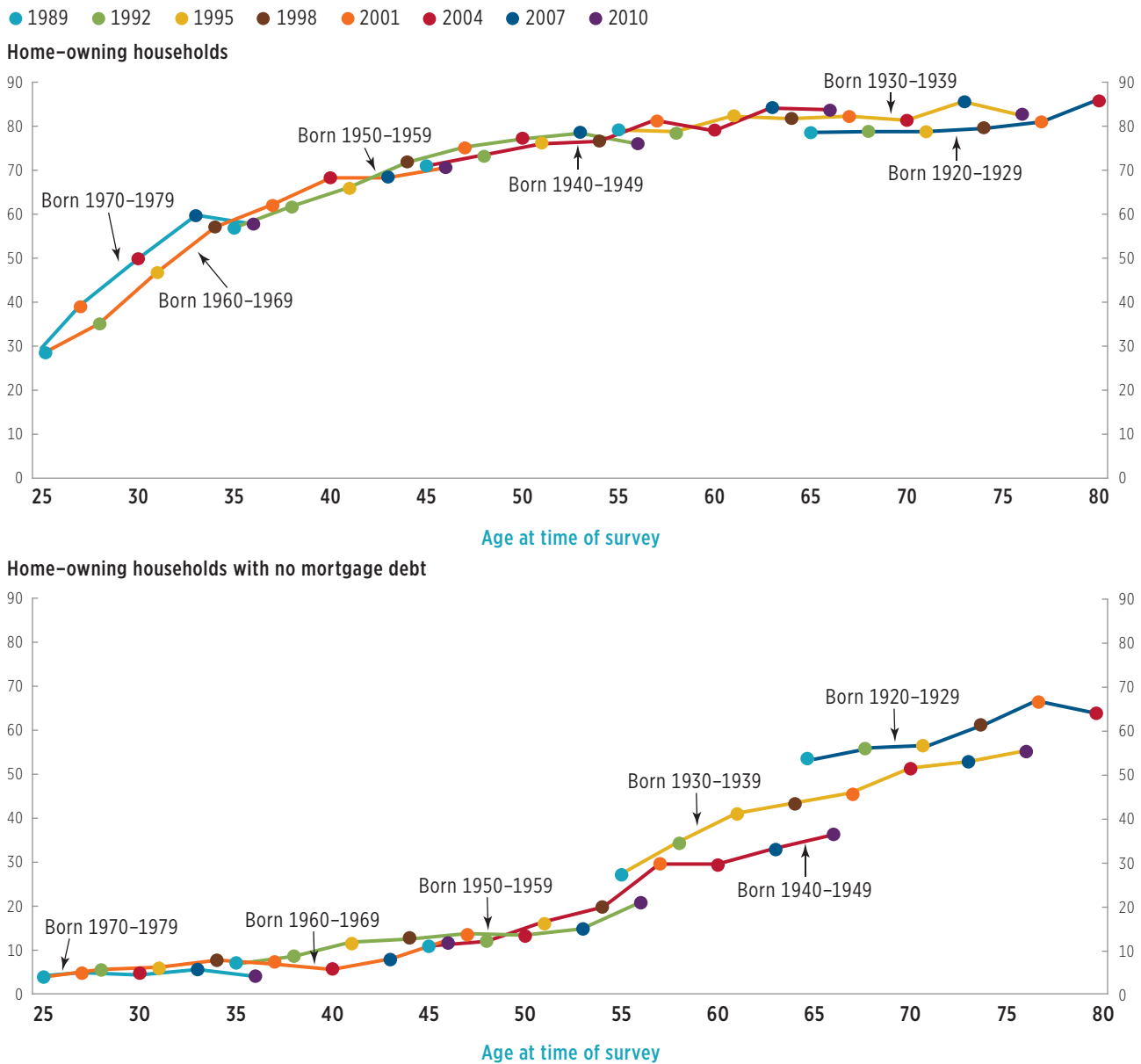
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<sup>\*</sup> The lone exception is the 1920s birth cohort. The last two observations plotted for this group are the 2001 and 2004 surveys.

FIGURE 10

### Homeownership and Mortgage Incidence by Age

Percentage of U.S. households by 10-year birth cohort of the head of household; 1989–2010



Note: Age is based on the age of the head of household. For data plotted in this figure, see Figures A.2 and A.3 in the appendix.  
 Source: Investment Company Institute tabulations of the 1989–2010 Survey of Consumer Finances

**Impact of Developments Between 2007 and 2010 on the Incidence of Mortgage Debt.** The tendency of households to pay off their mortgages as they age held up even during the great recession. For example, among all households in the 1940s birth cohort, the share who owned a home with no mortgage debt increased from 32 percent in 2007 to 35 percent in 2010 (Figure 10, lower panel). When the analysis is narrowed to home-owning households in the 1940s birth cohort, the share of homeowners with no mortgage debt increased from 37 percent in 2007 to 42 percent in 2010.

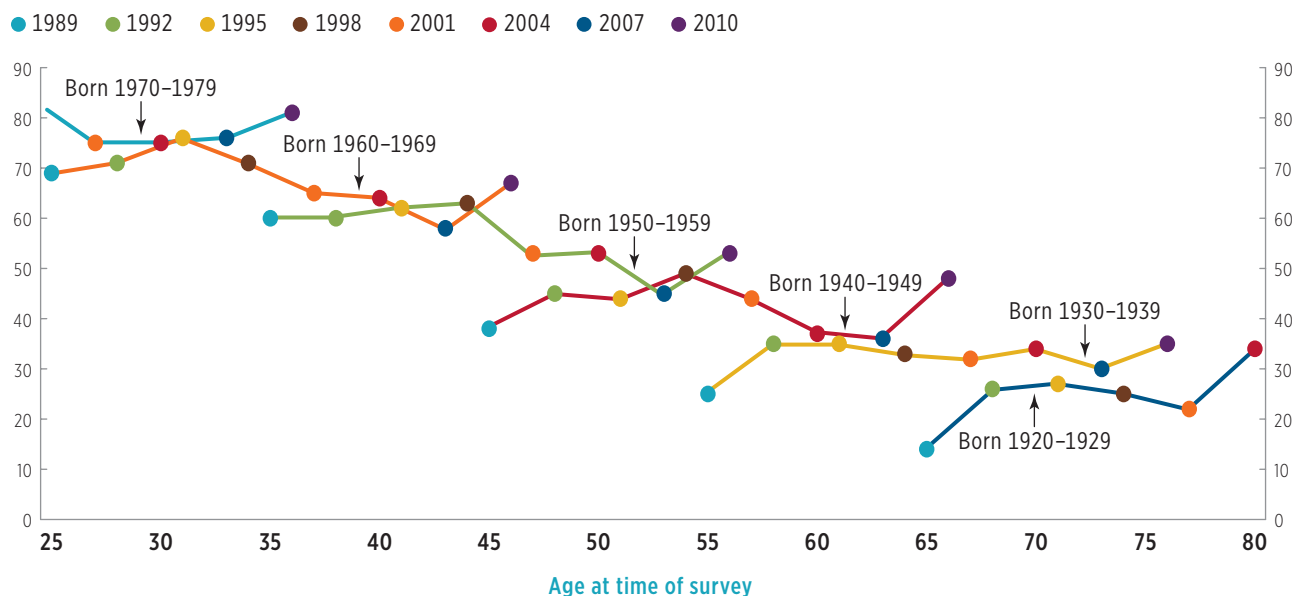
**Loan-to-Value Ratios by Birth Cohort.** For households that have not paid off their mortgage debt, mortgage debt as a percentage of home value tends to decline with age (Figure 11). For example, in 2010, the median loan-to-value ratio for homeowners with debt was 81 percent for households in the 1970s birth cohort (aged 31 to 40 in 2010); 53 percent for households in the 1950s birth cohort (aged 51 to 60); and 35 percent for homeowners in the 1930s birth cohort (aged 71 to 80).

**Impact of Developments Between 2007 and 2010 on Loan-to-Value Ratios.** The effects of the great recession and housing market developments can be seen by the fact that all birth cohorts have an increase in the median loan-to-value ratio for homeowners with debt between 2007 and 2010 (Figure 11). For example, the loan-to-value ratio for the 1950s birth cohort increased from 45 percent in 2007 to 53 percent in 2010. The changes in loan-to-value ratios across the cohorts were driven primarily by large drops in home values rather than increases in mortgage debt; overall mortgage debt actually declined between 2007 and 2010.<sup>33</sup>

FIGURE 11

### Loan-to-Value Ratios Typically Are Lower Among Older Households with Mortgages

Median loan-to-value ratio (percent) by 10-year birth cohort of the head of household; 1989–2010



Note: Age is based on the age of the head of household. The loan-to-value ratio is calculated for U.S. households with mortgages. For the data plotted in this figure, see Figure A.4 in the appendix.

Source: Investment Company Institute tabulations of the 1989–2010 Survey of Consumer Finances

## Home Equity Among Near-Retiree Households

Home equity—the value of the home less any mortgage debt owed on the property—represents a large portion of measured wealth for many U.S. households. The typical measure of household wealth is net worth, which is the sum of the value of all household assets (financial and nonfinancial) less household debt. As a group, near-retiree households, defined in this paper as households headed by a working individual aged 55 to 64,<sup>34</sup> held 19 percent of their measured wealth in the form of home equity in 2010.<sup>35</sup> The median ratio of home equity to net worth for near-retiree homeowners was 32 percent (Figure 12).

In 2010, 82 percent of near-retiree households owned their homes (Figure 12). Among near-retiree households, homeownership tends to rise with household income: 48 percent of near-retiree households with income less than \$30,000 owned their homes, compared with 86 percent of households with income of \$55,000 to \$79,999 and 96 percent of near-retiree households with income of \$150,000 or more.

Among near-retiree households that owned their homes, 25 percent owned their homes with no mortgage debt in 2010 (Figure 12). Lower-income near-retiree households are more likely to have paid off the mortgages on their homes. Among home-owning near-retiree households with income less than \$30,000, 46 percent had no mortgage debt, compared with fewer than 25 percent of other homeowners. Among all near-retiree households with mortgage debt, the median loan-to-value ratio was 51 percent.

Although fewer lower-income near-retiree households owned their homes, for those that owned their homes, home equity represented a much higher share of wealth. For example, the median ratio of home equity to net worth for near-retiree home-owning households with income less than \$30,000 was 58 percent, compared with 40 percent for homeowners with income of \$55,000 to \$79,999, and 19 percent for homeowners with income of \$150,000 or more (Figure 12).

## Employer-Sponsored Retirement Plans and IRAs

Employer-sponsored retirement plans (which include both private-sector employer and government employer plans, as well as both DB and DC plans) and IRAs are an important part of the retirement resource pyramid for many households. Accumulations in employer-sponsored retirement plans and IRAs provide income in retirement that supplements Social Security benefits. Consistent with their role as a supplement to Social Security, they increase in importance among households for whom Social Security benefits replace a smaller share of their average lifetime earnings.

FIGURE 12

**Homeownership and Mortgages Among Near-Retiree Households by Household Income***Near-retiree households,<sup>1</sup> 2010*

	Household income <sup>2</sup>					All near-retiree households
	Less than \$30,000	\$30,000–\$54,999	\$55,000–\$79,999	\$80,000–\$149,999	\$150,000 or more	
<b>Percentage of near-retiree households</b>	16	24	19	23	18	100
<b>Household income (dollars)<sup>2</sup></b>						
Average	20,263	42,588	66,895	110,287	318,780	109,141
Median	21,347	42,693	67,090	108,766	219,566	67,090
<b>Household net worth (dollars)<sup>3</sup></b>						
Average	161,980	297,237	322,175	682,864	3,176,997	890,664
Median	15,100	138,100	181,400	382,800	1,949,100	221,300
<b>Housing</b>						
Homeownership rate (percent)	48	80	86	94	96	82
Average home equity (dollars) <sup>4</sup>	39,776	85,810	89,261	154,281	495,615	168,950
Median home equity (dollars) <sup>4</sup>	0	56,000	75,000	99,000	323,000	79,000
<b>Selected statistics for home-owning households</b>						
Average house value (dollars)	135,834	174,815	193,554	280,906	729,339	320,853
Median house value (dollars)	100,000	135,000	160,000	225,000	550,000	200,000
Average home equity (dollars) <sup>4</sup>	82,621	107,056	104,149	164,234	513,991	205,917
Median home equity (dollars) <sup>4</sup>	75,000	72,500	83,000	104,000	345,000	104,000
Median ratio of home equity to net worth (percent) <sup>3, 4</sup>	58	46	40	29	19	32
Incidence of mortgage debt (percent)	54	76	77	78	77	75
Median loan-to-value ratio for all homeowners (percent)	18	39	39	44	28	35
Median loan-to-value ratio for homeowners with debt (percent)	47	54	60	54	39	51

<sup>1</sup> Near-retiree households are households with a working head aged 55 to 64, excluding the top and bottom 1 percent of the income distribution.

<sup>2</sup> Total is household income before taxes in 2009.

<sup>3</sup> Household net worth is the difference between household gross assets (financial and nonfinancial) and liabilities.

<sup>4</sup> Home equity is the home value less any outstanding mortgage debt on that home.

Source: Investment Company Institute tabulations of the 2010 Survey of Consumer Finances

## Near-Retiree Households' Retirement Accumulations

Employer-sponsored retirement plans and IRAs provide retirement resources to about 80 percent of near-retiree households (Figure 13). Employer-sponsored retirement plans and IRAs act as a supplement to Social Security. For the past two decades, about 80 percent of near-retiree households have consistently accrued DB, DC, or both types of retirement plan benefit (from private-sector employer and government employer plans), or IRAs (rollover and contributory). Despite the fact that, among private-sector employers, DC plans have grown relative to DB plans, the portion of near-retiree households with accrued benefits in employer-sponsored retirement plans or IRAs has remained about 80 percent since 1989. These data suggest that the transition from DB to DC plans has not reduced the share of the population that has reached retirement with employment-based retirement accumulations. In 2010, 81 percent of near-retiree households had either claims to benefits from DB retirement plans (from current and previous employers, private-sector employer and government employer plans), retirement assets (IRAs or DC “account type” pensions, such as 401(k) plans or similar accounts from current and previous employers, private-sector employer and government employer plans), or both.

### DB Plan Benefits

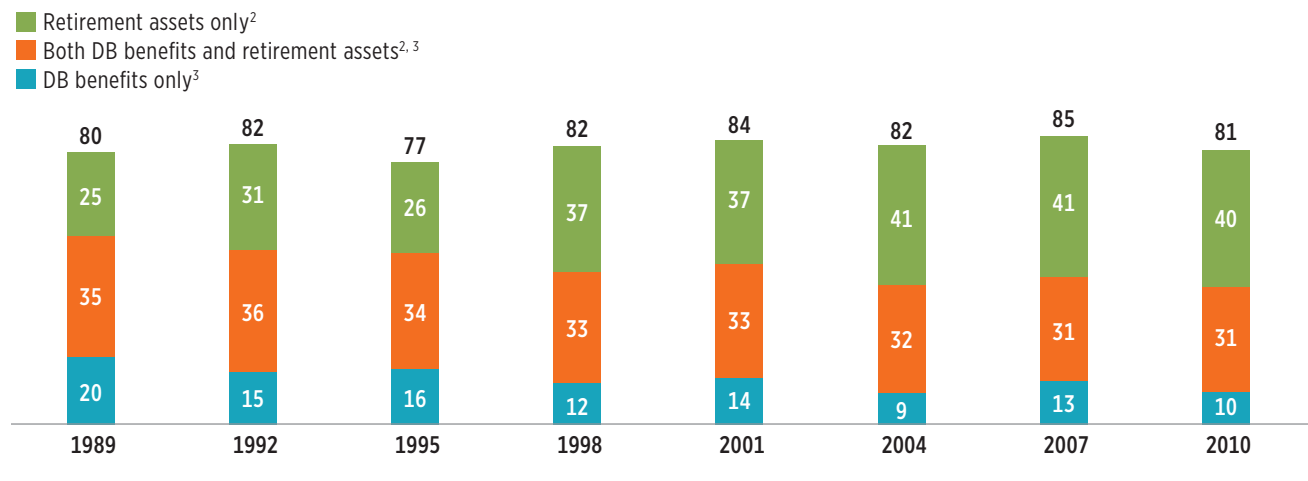
Workers with traditional DB plans earn benefits that are based on years of service and earnings averaged over a period of years (for example, the highest five years, or the most recent five years). Because of the benefit formula, traditional DB plans place a premium on having both a long tenure at a single employer and separating from employment close to retirement age.<sup>36</sup> Workers with cash balance plans, another type of DB plan, earn retirement benefits that are expressed as a notional account balance. The notional account typically is increased each year by a percentage of the worker's pay plus an increase based on a specified rate of return. Workers with cash balance plans accrue retirement benefits more evenly throughout their working careers.

Participation in DB plans never has been universal and the number of workers participating in private-sector DB plans has declined over the past 20 years. In 2010, there were 17 million active participants in private-sector DB plans, compared with 27 million active participants in 1989.<sup>37</sup> Despite the fact that fewer current private-sector workers are covered by DB plans, many households who are near retirement have accrued benefits in DB pension plans, and thus DB plans will continue to be an important source of retirement resources in the near future. In 2010, 41 percent of near-retiree households had accrued DB plan benefits (including accruals in both private-sector employer and government employer plans), compared with 55 percent of near-retiree households who had accrued DB plan benefits in 1989 (Figure 13).

FIGURE 13

### Vast Majority of Near-Retiree Households Have Accrued Pension Benefits

Percentage of near-retiree households,<sup>1</sup> 1989–2010



<sup>1</sup> Near-retiree households are households with a working head aged 55 to 64 in the year indicated, excluding the top and bottom 1 percent of the income distribution.

<sup>2</sup> Retirement assets include DC plan assets (401(k), 403(b), 457, thrift, and other DC plans) and IRAs (traditional, Roth, SEP, SAR-SEP, and SIMPLE), whether from private-sector or government employers.

<sup>3</sup> DB benefits include households currently receiving DB benefits and households with the promise of future DB benefits, whether from private-sector or government employers.

Note: Components may not add to the total because of rounding.

Source: Investment Company Institute tabulations of the 1989–2010 Survey of Consumer Finances

## DC Plan Benefits and IRAs

In a DC plan, there is no benefit formula. The benefit is the balance in the account, which reflects contributions made to the account and investment returns earned on the account. Contributions to DC plans can be made by employers, workers, or both. A 401(k) plan is one type of DC plan. Workers who participate in a 401(k) plan have the option to contribute a portion of their earnings into a retirement account. In addition, employers may contribute to the employee's retirement account, either through automatic or matching contributions. When the worker reaches retirement age, their retirement benefit is the balance in the 401(k) account, and the worker may begin to withdraw money.<sup>38</sup> If a worker does not stay with the same employer throughout their career, the DC account can be left at the old employer, rolled over into an IRA, or shifted to a new employer. In any case, the balance of the DC account remains under the ownership and control of the worker.

DC pension plans have grown significantly, particularly 401(k) plans in the private sector, which had \$3.3 trillion in assets in mid-2012.<sup>39</sup> In 1989, there were 17 million active participants in 401(k) plans, compared with 51 million in 2010.<sup>40</sup> Because 401(k) plans were first introduced in the early 1980s,<sup>41</sup> workers who are currently near retirement will not have had the opportunity to participate in 401(k) plans throughout their full careers. Employees of non-profit organizations, universities, and public schools typically are offered another type of DC plan, a 403(b) plan; these plans held \$771 billion in mid-2012.<sup>42</sup> State and local government employees had accumulated \$201 billion in 457 plans in mid-2012.<sup>43</sup> All told, DC plan assets totaled \$4.7 trillion in mid-2012 (Figure 4).

Created in 1974 under the Employee Retirement Income Security Act (ERISA), IRAs were designed with two goals.<sup>44</sup> First, they provide individuals not covered by workplace retirement plans with an opportunity to save for retirement on their own. Second, through rollovers, they allow workers who are leaving a job a means to preserve the tax benefits and growth opportunities that employer-sponsored retirement plans provide. The IRA has proved successful in both roles, although contributions to IRAs declined after 1986 when restrictions were placed on who could make deductible contributions to traditional IRAs.<sup>45</sup> More recently, rollovers—inclusive of rollovers from DB and DC plans; private-sector employer and government employer plans—have been the primary source of funds flowing into IRAs.<sup>46</sup> As of the end of June 2012, IRA assets totaled \$5.1 trillion (Figure 4).<sup>47</sup>

The growth of DC plans and IRAs also can be seen on household balance sheets. In 2010, 71 percent of near-retiree households had DC plan accounts or IRAs, compared with 60 percent in 1989 (Figure 13). Among households with DC plan accounts or IRAs, the median amount of assets in these accounts (in constant 2010 dollars) has increased to \$101,350 in 2010, compared with \$40,479 in 1989 (Figure 5) .



## Near-Retiree Households' Retirement Accumulations by Household Income

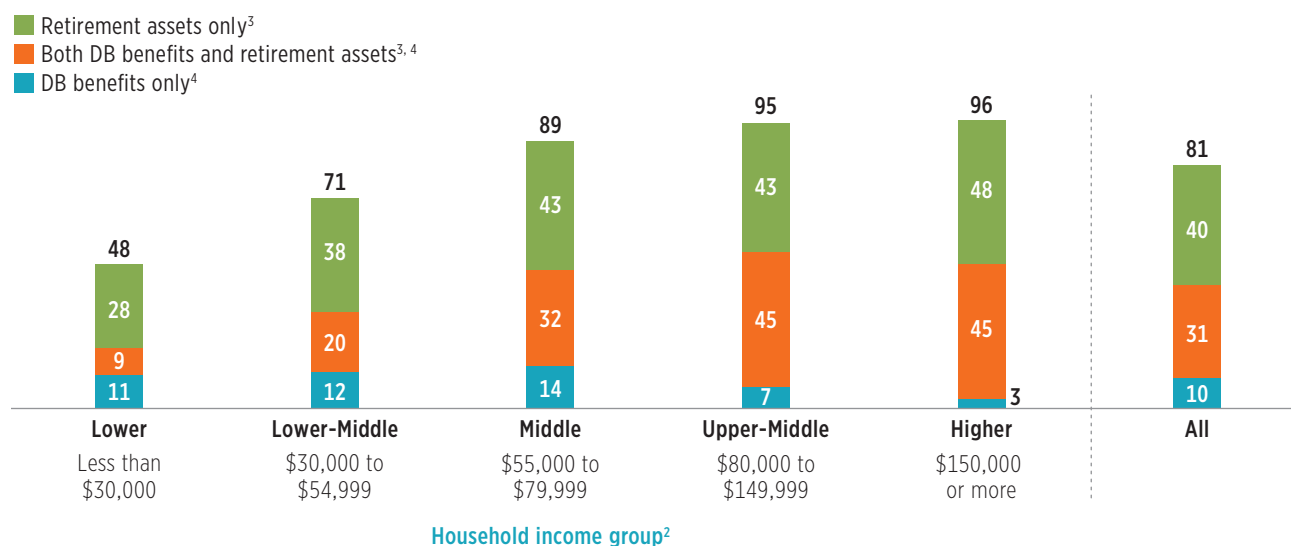
The portion of near-retiree households that have accrued benefits in employer-sponsored retirement plans or IRAs is high across all income groups. In 2010, 94 percent of near-retiree households with income of \$55,000 or more had DB plan benefits, DC plan accounts, or IRAs (Figure 14). More than 70 percent of near-retiree households with income of \$30,000 to \$54,999 had such employer-sponsored retirement plan benefits or IRAs. Among near-retiree households with income less than \$30,000, almost half had such retirement plan benefits or IRAs.

Employer-sponsored retirement plans and IRAs act as a supplement to Social Security. The ownership pattern of employment-sponsored retirement benefits mirrors (or complements) the progressive Social Security benefit. Social Security provides higher replacement rates for workers with lower lifetime earnings. Employer-sponsored retirement plans supply retirement benefits at all income levels, but higher-income households are more likely to accrue benefits in employer-provided retirement plans.

FIGURE 14

### Near-Retiree Households Across All Income Groups Have Retirement Assets or DB Benefits or Both

Percentage of near-retiree households<sup>1</sup> by income group,<sup>2</sup> 2010



<sup>1</sup> Near-retiree households are households with a working head aged 55 to 64, excluding the top and bottom 1 percent of the income distribution.

<sup>2</sup> Total is household income before taxes in 2009.

<sup>3</sup> Retirement assets include DC plan assets (401(k), 403(b), 457, thrift, and other DC plans) and IRAs (traditional, Roth, SEP, SAR-SEP, and SIMPLE), whether from private-sector or government employers.

<sup>4</sup> DB benefits include households currently receiving DB benefits and households with the promise of future DB benefits, whether from private-sector or government employers.

Note: Components may not add to the total because of rounding.

Source: Investment Company Institute tabulations of the 2010 Survey of Consumer Finances

Near-retiree households across all income groups participate in employer-sponsored retirement plans and IRAs. As household income increases so too does the amount of retirement assets in DC plans and IRAs, as well as the share of near-retiree households with DB benefits (Figure 15). The median ratio of DC account and IRA assets to net worth varies across income groups. For example, in 2010, near-retiree households with income less than \$30,000 that owned retirement assets had median retirement assets of \$18,000. One-quarter of those households also had DB pension benefits. In comparison, near-retiree households with income of \$150,000 or more that owned retirement assets in DC accounts and IRAs had median retirement assets of \$423,000, and almost half of those households expected benefits from DB pension plans. However, the accumulation in DC accounts of near-retiree households today is not an indication of what future generations of workers will accumulate when exposed to DC plans for a full working career.<sup>48</sup> In 2010, among near-retiree households with retirement assets, 43 percent also had benefits from DB plans.

As a share of net worth, retirement assets are most important to moderate-income households. In 2010, the median ratio of retirement assets (DC accounts and IRAs) to net worth was 23 percent for households with income less than \$30,000 that owned retirement assets (Figure 15). The median ratio of retirement assets to net worth rises with income, reaching 40 percent for households with income between \$80,000 and \$149,999 that owned retirement assets. Although the amount of retirement assets continues to increase with income, these assets represent a smaller share of net worth for households with the highest incomes. Among households with income of \$150,000 or more that owned retirement assets, the ratio of retirement assets to net worth was 24 percent.

## Other Assets

In addition to Social Security, homeownership, employer-sponsored DB and DC plans, and IRAs, some households own other assets upon which they can draw in retirement. Other assets include financial and nonfinancial assets, such as nonresidential property, business equity, and stocks owned outside of employer-sponsored retirement plans or IRAs.

Ownership of other assets is not evenly distributed across households. Bricker et al. (2012) find that households with greater wealth and higher incomes are more likely to own other assets. For example, stock ownership outside retirement accounts rises with wealth. In 2010, the SCF shows that 3 percent of households with net worth in the bottom 25 percent of the population owned stocks outside of retirement accounts, compared with 55 percent of households with net worth in the top 10 percent of the population. Similarly, the 2010 SCF data show that 5 percent of households in the bottom 20 percent of the income distribution owned business equity, compared with 38 percent of households in the top 10 percent of the income distribution.

FIGURE 15

**Retirement Plans and IRAs Among Near-Retiree Households by Household Income***Near-retiree households,<sup>1</sup> 2010*

	Household income <sup>2</sup>					All near-retiree households
	Less than \$30,000	\$30,000–\$54,999	\$55,000–\$79,999	\$80,000–\$149,999	\$150,000 or more	
<b>Percentage of near-retiree households</b>	16	24	19	23	18	100
<b>Household income (dollars)<sup>2</sup></b>						
Average	20,263	42,588	66,895	110,287	318,780	109,141
Median	21,347	42,693	67,090	108,766	219,566	67,090
<b>Household net worth (dollars)<sup>3</sup></b>						
Average	161,980	297,237	322,175	682,864	3,176,997	890,664
Median	15,100	138,100	181,400	382,800	1,949,100	221,300
<b>Accrued pension benefits</b>						
Some type of accrued pension benefit (percent)	48	71	89	95	96	81
Retirement assets only <sup>4</sup>	28	38	43	43	48	40
Both DB benefits and retirement assets <sup>4, 5</sup>	9	20	32	45	45	31
DB benefits only <sup>5</sup>	11	12	14	7	3	10
Average retirement assets (dollars) <sup>4</sup>	17,431	51,048	83,780	206,002	654,545	196,735
Median retirement assets (dollars) <sup>4</sup>	0	4,300	28,000	130,000	400,000	34,000
<b>Selected statistics for households with retirement assets</b>						
Average retirement assets (dollars) <sup>4</sup>	47,224	87,741	112,341	233,042	704,385	277,064
Median retirement assets (dollars) <sup>4</sup>	18,000	36,000	57,000	150,000	423,000	101,350
Share that also have DB benefits (percent) <sup>5</sup>	25	35	43	51	48	43
Median ratio of retirement assets to net worth (percent) <sup>3, 4</sup>	23	27	32	40	24	29

<sup>1</sup> Near-retiree households are households with a working head aged 55 to 64, excluding the top and bottom 1 percent of the income distribution.

<sup>2</sup> Total is household income before taxes in 2009.

<sup>3</sup> Household net worth is the difference between household gross assets (financial and nonfinancial) and liabilities.

<sup>4</sup> Retirement assets include DC plan assets (401(k), 403(b), 457, thrift, and other DC plans) and IRAs (traditional, Roth, SEP, SAR-SEP, and SIMPLE), whether from private-sector or government employers.

<sup>5</sup> DB benefits include households currently receiving DB benefits and households with the promise of future DB benefits, whether from private-sector or government employers.

Source: Investment Company Institute tabulations of the 2010 Survey of Consumer Finances

## Estimating the Components of the Retirement Resource Pyramid

The U.S. retirement system generally is successful at providing retirement resources to older Americans. The system consists of Social Security, which provides a wide base of resources to households; homeownership; DB and DC employer-sponsored retirement plans and IRAs, which complement Social Security; and other assets. Households do not rely on each part of the retirement system equally in order to maintain lifestyles as they transition from working life to retired life. Some components of America's retirement system, such as Social Security, are designed to provide greater support to people with lower lifetime income. This means that Americans with higher levels of lifetime income are more reliant on employer-sponsored retirement plans, IRAs, homeownership, and other assets in retirement.

It is possible to estimate the retirement resource pyramid for U.S. households, but doing so requires measuring the value of a household's future stream of Social Security and DB plan benefits. Gustman, Steinmeier, and Tabatabai (2009) undertake this exercise using HRS data from 2006. The analysis focuses on households approaching retirement—in this case, households with a member born between 1948 and 1953 (aged 53 to 58 in 2006). Their analysis is used to estimate the components of the retirement resource pyramid for these households, with households grouped by their augmented wealth (Figure 16).

Reflecting the progressive benefit formula, households approaching retirement in the lowest augmented wealth quintile (the lowest 20 percent of households approaching retirement ranked by augmented wealth) rely heavily on Social Security benefits. In 2006, Social Security comprised 82 percent of total augmented wealth for households approaching retirement who were in the lowest augmented wealth quintile (Figure 16). Although Social Security typically replaces a high percentage of earnings for these households, many also had equity in their homes, accumulated retirement benefits, and other assets.

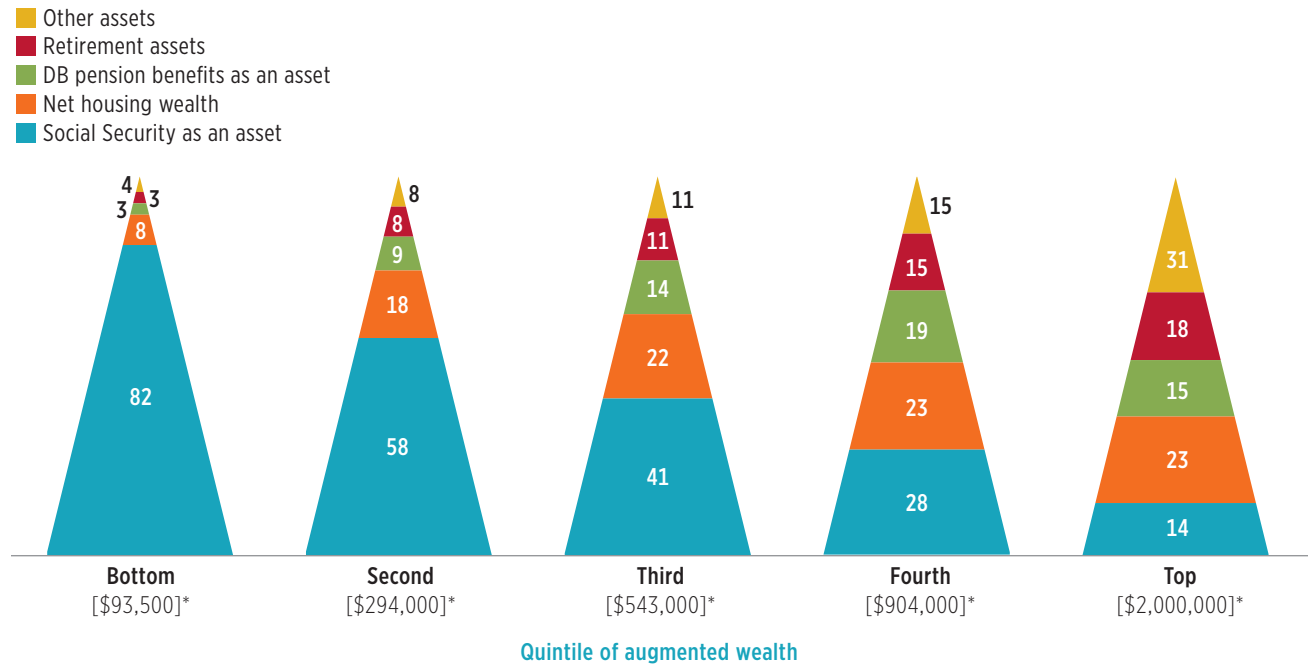
In comparison with those with lower augmented wealth, households approaching retirement in the middle of the augmented wealth distribution rely more heavily on resources other than Social Security. Social Security comprised a large portion of total augmented wealth (41 percent) for households approaching retirement in the middle of the augmented wealth distribution (Figure 16). For this group, equity in their homes made up 22 percent of augmented wealth and the combination of employer-sponsored DB and DC retirement plans and IRAs comprised another 25 percent of augmented wealth. These households in the middle of the augmented wealth distribution are reliant on a mix of resources in retirement: some from Social Security, but more than half from employer-sponsored retirement plans and IRAs, equity in their homes, and other assets.

The highest augmented wealth quintile of households approaching retirement relies relatively little on Social Security, reflecting the fact that Social Security benefits typically replace a much smaller share of lifetime earnings for this group. For these households, employer-sponsored retirement plans, IRAs, and other assets are more important. For households approaching retirement in the top augmented wealth quintile, Social Security comprised only 14 percent of total augmented wealth (Figure 16). For this group, 18 percent of total augmented wealth was composed of employer-sponsored DC pensions and IRAs, 15 percent from DB plans, 23 percent from equity in their homes, and 31 percent from other assets.

FIGURE 16

### Estimates of the Components of the Retirement Resource Pyramids for Households Approaching Retirement

Percentage of augmented wealth by augmented wealth quintile in 2006 for households with at least one member born between 1948 and 1953



\* Approximate average level of augmented wealth in 2006 for augmented wealth quintile, which includes estimates of Social Security and DB benefits as assets.

Note: Households with the top and bottom 1 percent of augmented wealth are excluded. Social Security wealth is estimated as the present discounted value (PDV) of the stream of Social Security benefits. Net housing wealth is the value of the home less mortgages. DB pension wealth is estimated as the PDV of the stream of DB benefits. Retirement assets include DC plan assets (401(k), 403(b), 457, thrift, and other DC plans) and IRAs (traditional, Roth, SEP, SAR-SEP, and SIMPLE). DB pension and retirement assets derived from work in both the private sector and the government sector. Percentage of augmented wealth in each category is represented by the height of the category rather than by the area of the category. Components may not add to 100 percent because of rounding.

Source: Investment Company Institute tabulation derived from Gustman, Steinmeier, and Tabatabai 2009 using Health and Retirement Study (HRS) data

## What Do Current Trends Suggest About Retirement in the Future?

Retirement policy discussions often start from the premise that the transition of private-sector pensions from primarily DB plans to primarily DC plans has led—or will lead in the near future—to a substantial drop in retiree income from retirement plans. In addition, there is skepticism as to the ability of DC pensions to fill the void.<sup>49</sup> In fact, neither the premise that the shift to DC plans has already caused a drop in retiree income nor the premise that it will lead to a drop in retirement income in the near future is correct. Looking over all the available data from 1975 to 2011, it is clear that income from private-sector pension plans has become more—not less—prevalent over time. Further, there is reason to believe that the data understate the trend in pension income, as the household survey data used to measure retiree pension income does not appear to capture a large portion of the distributions paid to retirees from DC plans and IRAs.<sup>50</sup> As to future generations, research suggests that many can expect to receive more benefits from DC plans than they would have accumulated in DB plans.

### Historical Trends in Retiree Income from Employer-Sponsored Retirement Plans and IRAs

Overall, the share of the workforce covered by DB or DC retirement plans has remained fairly steady over the past few decades. For example, analyzing CPS data, Brady and Bogdan (2012b) show that the share of private-sector workers whose employers sponsored retirement plans (inclusive of both DB and DC plans) has averaged 54 percent since 1979, ranging from 50 percent to 60 percent. The primary difference has not been the share of workers with retirement plans, but rather the growth of DC plans relative to DB plans. However, the extent to which previous generations received income from private-sector DB plans cannot be gleaned simply by looking at data on pension coverage. Not all workers covered by DB pension plans would have received benefits from the plans, and the amounts received would likely be less than what would be implied by simple calculations that use a typical DB plan benefit formula and assume workers retire from their employer after a lengthy period of employment. Private-sector workers change jobs frequently. In order to receive any benefits, workers must participate in a plan long enough to become vested.<sup>51</sup> Even so, vesting alone does not ensure benefits will be of great value: the accrual of benefits in a traditional DB plan is typically back loaded, which puts a premium on having long tenure at a single employer and separating from service close to the retirement age designated by the plan.

To date, the shift of employer-provided retirement plans in the private sector from predominantly DB plans to predominantly DC plans has not led to a reduction in the amount of income retirees receive from private-sector pensions. Rather, private-sector pension income has become more prevalent. Brady and Bogdan (2012b), analyzing CPS data, find that the share of retirees receiving private-sector pension income increased by more than 50 percent between 1975 and 1991, and has remained fairly stable since. In addition, among those receiving income from private-sector pensions, the median amount of inflation-adjusted income—which had remained fairly flat between 1975 and 1991—has increased nearly 40 percent since 1991.

Some of the increase in income from private-sector retirement plans may be attributable to the growth of DC pension plans and IRAs. Indeed, because the CPS data on retiree pension income do not fully capture distributions from DC plans and IRAs, the growth in the importance of income from private-sector pensions is likely understated. Some of this increase may be, counter to conventional wisdom, attributable to an increase in the amount of retiree income generated by private-sector DB pensions: although fewer private-sector workers are covered by DB pensions, changes to pension vesting rules since 1974 have increased the share of covered workers who are vested (Brady and Bogdan 2012b).

Regardless of the cause of the increase, the typical amount of private-sector pension income observed in the data historically can be generated by relatively modest accumulations in DC plans or IRAs. For example, even though few workers have worked an entire career with DC plans as their primary employer-provided retirement plans, Purcell (2009) estimates that median retirement account balances for households in 2007 could have generated annual pension income in excess of the median pension income received by retired households historically.<sup>52</sup>

### **Measurement of Pension Income**

It is difficult to measure the role of employer-sponsored pension income among retirees because of difficulties with the surveys that collect such information. Sabelhaus and Schrass (2009) illustrate that the CPS understates the amounts that individuals withdraw from IRAs. The CPS data underreport income from employer-sponsored retirement plans relative to surveys that collect data from firms and administrative data. Anguelov, Iams, and Purcell (2012), comparing data from multiple surveys, suggest that pension income, specifically from DC pension plans, is underreported in the CPS. Brady and Pierce (2012) find that administrative tax data also indicate that income from pensions, annuities, and IRAs is underreported in the CPS. Tax return data show that 17 percent more individuals aged 65 or older receive income from pensions, annuities, and IRA distributions than is estimated in the CPS, and the median amount they receive is nearly 50 percent higher than reported in the CPS. Because not all individuals with income from employer-sponsored retirement plans file a tax return, the administrative tax data likely provide a conservative estimate of underreporting when compared with the CPS.

### **Projecting the Future of Retiree Income from Employer-Sponsored Retirement Plans and IRAs**

In the future, individuals who only have access to employer-provided DC plans during their working careers can expect to accumulate enough assets to maintain their standard of living in retirement. In addition, many individuals will have more resources in retirement than they would have had if they had been covered by traditional DB plans during their working careers.

## Adequacy of 401(k) Plans

DC plans have the potential to replace a significant share of income in retirement. For example, Holden and VanDerhei (2002) project what 401(k) plans could accumulate across a full career. The model used in the study to project accumulations moves 401(k) participants through their careers, with decisions as they age that reflect actual participant behavior on contributions, asset allocations, job changes, rollovers, withdrawals, and loans. The study focuses on 401(k) participants who will turn 65 between 2030 and 2039 (now aged 38 to 47). For more than 60 percent of this cohort, their 401(k) accumulations are projected to replace more than half their salaries. Accounting for Social Security, the majority of the lowest income quartile of this cohort is projected to have their salaries fully replaced.

Brady (2012) examines whether workers who rely on Social Security benefits and income generated by employer-provided 401(k) plans, and have no other financial assets available in retirement, will have adequate retirement resources. The study focuses on individuals who were born in 1966 and will reach age 67, the Social Security NRA, in 2033. The simulations in the study account for homeownership and fully specify income taxes, payroll taxes, and the Social Security benefit formula. The study finds that moderate 401(k) contributions can—when combined with Social Security benefits—produce adequate retirement income for many workers. For example, a married couple with combined earnings of approximately \$87,000 a year on average during their working career (in 2012 dollars) is assumed to: begin participating in a 401(k) plan at age 37; contribute 6 percent of their combined earnings to the 401(k) plan; and receive employer-matching contributions of 3 percent of their combined earnings. If this couple rents their housing, the study finds that they can expect to replace 93 percent of their pre-retirement consumable income in retirement.<sup>53</sup> If this couple owns their home and has paid off the mortgage on their home, the study finds that they can expect to replace 112 percent of their pre-retirement consumable income in retirement.

The baseline results in Brady (2012) do not rely on earning an investment premium on risky assets. Using the range of returns experienced historically, additional simulations in the study illustrate that 401(k) participants who choose to invest in risky assets could have more or less retirement income than if they had invested in riskless assets. These simulations also illustrate, however, that focusing on the investment risks in participants' 401(k) plan accounts in isolation can overstate the impact of investment risk on a households' retirement income. This is because Social Security benefits provide a floor below which retirement income cannot fall. For example, in the baseline results for the married couple with combined earnings of approximately \$87,000 a year (in 2012 dollars), Social Security benefits represent 71 percent of their annual pre-tax retirement income.



## Comparison of Projected Retirement Income from DC plans and DB plans

For many workers, the shift from DB plans to DC plans likely will mean that they will be better off in retirement. As noted earlier, traditional DB plans place a premium on both having long tenure at a single employer and separating from service close to the retirement age. However, only a minority of private-sector workers approaching retirement have had a work history that would have maximized benefits under a traditional DB plan. The U.S. labor force is—and has always been—highly mobile. CPS data show that among private-sector workers aged 55 to 64 in 2012, 49 percent had been at their current job for nine years or less, whereas only 26 percent had tenure of 20 years or more; in 1983, the comparable statistics were 42 percent and 33 percent, respectively.<sup>54</sup> In contrast, 401(k) plans are well suited to a mobile workforce, allowing workers to accumulate retirement assets steadily, paycheck by paycheck, and allowing workers to retain those assets when they separate from an employer.

Taking into account the risks faced by retirement plan participants—for example, the investment risk faced by workers in DC plans and the job turnover risk faced by workers in DB plans—several studies have concluded that the majority of workers who only have access to DC plans during their working careers will be better off than if they only had access to DB plans. For example, Samwick and Skinner (2004) analyze SCF data that provide detailed plan descriptions for a representative sample of DB plans and DC plans. Comparing typical DB plans with typical 401(k) plans under a variety of possible labor market and investment return scenarios, the authors concluded that “generally, 401(k) plans ... are as good or better than DB plans in providing for retirement.” Schragger (2009) uses data from the Panel Study of Income Dynamics (PSID) to model four sources of uncertainty: wage growth, job turnover, asset returns, and life expectancy.<sup>55</sup> Comparing DC plans and DB plans that are of equal cost to the employer, the author concludes that, by the 1990s, DC plans were preferred by most workers. Poterba et al. (2007) analyze HRS data that include both detailed descriptions of retirement plans and the actual work histories of individuals. The authors project that retirement resources will be higher on average with private-sector DC plans than they would be with private-sector DB plans.

## What Are the Primary Areas of Concern Going Forward?

Available data and research show that when the majority of U.S. households retire they are able to maintain their standard of living, and more recent cohorts of retirees tend to have more resources than previous cohorts as they enter retirement. Further, research suggests that changes to private-sector retirement plans are unlikely to reduce income, on average, for future retirees; on the contrary, especially for those who have frequent job changes during their working careers, income likely will increase. That said, there are still areas of concern. For example, not all retirees are able to maintain their standard of living in retirement and 9 percent of people aged 65 or older had income below the poverty line in 2011 (Figure 6). Research indicates that people who retire earlier than expected due to poor health, groups that often have limited work histories, unmarried people (never married, divorced, or widowed), and those with low levels of education have lower levels of resources for retirement than others. Additional future risks include increased healthcare costs, which also would increase the possibility of cuts to the Medicare and Medicaid programs; possible changes to the Social Security system; and the prospect that fiscal imbalances will cause governments to reduce the generosity of the retirement benefits that they provide to their employees. Finally, regardless of the retirement plan’s design, the current low interest-rate environment makes advance funding of retirement expenses more difficult.

**Early Retirement Due to Poor Health.** Hurd and Rohwedder (2008) use HRS-CAMS data to observe households before and after they retire and find that the health status of households is related to retirement outcomes. One measure they use to examine the effect of health is the health status reported by households prior to retirement. The median household-level decline in real spending on nondurable goods after retirement was 7 percent for those who reported that their health was good, fair, or poor; compared with an increase of over 2 percent after retirement for those who reported that they had very good or excellent health.\* The authors also compare retirees who cited health as a reason for retirement to other retirees. The median household-level decline in real spending on nondurable goods after retirement was 17 percent for those who cited health as a reason for retirement, compared with a decline of 3 percent for other retirees.\* Households that cited health as a reason for retirement were more likely to retire earlier than they had anticipated. Health status also appeared to be related to pre-retirement wealth, as a much higher percentage of lower-wealth households reported that health was an important reason for retirement.<sup>56</sup>

**Limited Work Histories.** Haveman et al. (2007) use HRS data and find that new retirees in 1992 with less education and with characteristics associated with lower attachment to the labor force—that is people who are not consistently employed or not consistently working full time—were at risk for poor retirement outcomes. Groups that typically are less attached to the labor force (e.g., nonwhites, women, and those who retired at an earlier age) were more likely to have incomes below the poverty line and live in near poverty (income at twice the poverty line) after retirement. These groups were also at risk for low standards of living prior to retirement, leading the authors of the study to conclude that “...vulnerability to inadequate resources in working life appears to persist into retirement.”<sup>57</sup>

**Marital Status.** Poterba, Venti, and Wise (2012) use HRS data to study income and wealth at the end of life and find that marital status is also important for end of life outcomes. Wealth at the end of life is highest for those who have been married the longest and single households are more likely to end life with income below the poverty line.

**Healthcare Costs, Medicare, and Medicaid.** Continued rapid growth in the cost of healthcare could reduce retirement adequacy for future retirees. To the extent that retiree healthcare expenses are not currently covered by Medicare or Medicaid, increased costs would directly impact retirees. Perhaps more importantly, Medicare and Medicaid represent a growing share of federal expenditures at a time when federal budget deficits are a growing policy concern. Cuts in these programs would mean that more retiree resources would need to be devoted to healthcare and fewer resources could be devoted to meeting other needs.

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\* To calculate this measure, the authors calculate the percent change in real spending on nondurable goods for each household and then report the median value of that percent change.

**Changes to Social Security.** The Social Security system also faces a projected long-term imbalance, although one not as severe as the projected imbalance of Medicare.<sup>58</sup> Bringing the system into balance requires benefit cuts, tax increases, or some combination of the two. Regardless of the form they take, these changes will increase the burden on employer-sponsored retirement plans and IRAs. If Social Security benefits are cut, future retirees will need to accumulate more retirement resources. If taxes are raised on workers, net earnings will fall, but the amount of earnings that would need to be set aside to supplement Social Security benefits in retirement would remain largely unchanged. To the extent that either the benefit cuts or tax increases are structured to exempt workers with low lifetime earnings, it would place an even heavier burden on those already most dependent on employer-sponsored retirement plans and IRAs.<sup>59</sup>

**Government Employee Retirement Benefits.** For the past few decades, few federal, state, and local government employees have had their retirement benefits reduced. However, fiscal imbalances have led some state and local governments to cut retirement benefits for future retirees and have led other governments to consider cutting benefits.<sup>60</sup> Although fewer retirees receive income from government plans than from private-sector plans, government employees typically receive more generous benefits.<sup>61</sup> Cuts to government employee retirement benefits—whether implemented through less generous DB pension plans or less generous DC pension plans—could reduce retirement income for a substantial group of retirees.

**Low Interest Rate Environment and Uncertainty of Future Investment Returns.** Finally, low interest rates make it more difficult to accumulate adequate retirement resources. In the face of low investment returns, no method of pre-funding retirement expenditures is likely to be very effective.<sup>62</sup> This is true regardless of whether assets are accumulated in a DB pension plan or a DC pension plan. From January 1962 to October 2008, the average yield on 10-year Treasury notes was about 7.0 percent. Since October 2008, the average yield has been 2.8 percent. As of the end of November 2012, the yield on 10-year Treasury notes had been below 3.5 percent for 19 consecutive months; below 3.0 percent for 16 consecutive months; and below 2.0 percent for 7 consecutive months. The yield on 10-year Treasury inflation protected securities (TIPS) averaged 2.0 percent from January 2003 to May 2009 and 1.0 percent from May 2009 until January 23, 2012. From January 24, 2012 to the end of November 2012, the 10-year TIPS yield has been negative, with an average yield of -0.47 percent.<sup>63</sup>

## Conclusions

The U.S. retirement system has successfully provided resources to generations of Americans. An examination of household expenditures demonstrates that most households maintain their standard of living when they retire. Analysis of tax return data shows that, on average, households maintain their income when they retire. Other research illustrates that, well into retirement, households typically are able to maintain sufficient wealth to generate as much income as they could when they first retired.

The evidence suggests that the U.S. retirement system has become better at providing resources over time. Adjusted for inflation and the number of U.S. households, assets earmarked for retirement were nearly three times larger in mid-2012 than in 1985. More recent generations of retirees have had higher levels of wealth, on average, upon entering retirement than those in previous generations. Poverty among people aged 65 or older has fallen from nearly 30 percent in the mid-1960s to 9 percent in 2011.

Employer-sponsored retirement plans in the private sector are shifting from DB plans to DC plans. Research indicates that this shift will not cause a reduction in retiree income from employer-sponsored plans. In 2010, 81 percent of near-retiree households had either claims to benefits from DB retirement plans (from current and previous employers; from private-sector employer and government employer plans), retirement assets (IRAs or DC “account type” pensions, such as 401(k) plans or similar accounts; from current and previous employers; from private-sector employer and government employer plans), or both. Although a smaller share of near-retiree households had DB benefits in 2010 than in 1989, the overall share with retirement accumulations has held steady since 1989. In fact, since 1975, retirement income from employer-sponsored plans and IRAs has increased. Further, several studies demonstrate that workers with DC plans will be able to generate sufficient resources to maintain their standard of living in retirement, and that many retirees—particularly those who change jobs frequently—will be better off as a result of the shift from DB to DC retirement plans.

This paper also illustrates that households save for a variety of reasons. Not all households are focused on saving for retirement in any given year. Households are more likely to focus on saving for retirement as they get older and as their income increases. Younger and lower-income households tend to be more focused on saving for liquidity, education, future large purchases, or to purchase homes. Examining the retirement savings of young households is not a good indication of how prepared these households will be when they enter retirement.

The U.S. retirement system is best pictured as a retirement resource pyramid with five basic components. Social Security provides a broad base of resources; homeownership is the second component; employer-sponsored retirement plans (private-sector employer and government employer plans, as well as both DB and DC plans) and IRAs complement Social Security to provide resources in retirement. Other assets also may play a role in retirement, especially for wealthier retirees. The composition of the retirement resource pyramid varies across different income and wealth groups.

Households do not need to rely on each part of the retirement pyramid equally in order to maintain their lifestyle when they transition from work to retirement. Social Security provides resources to retirees of all income groups with higher replacement rates for lower-earning households. Homeownership allows retirees to avoid paying rent. Older home-owning households tend either to have no mortgages or mortgages that are small relative to the value of their homes. Employer-sponsored retirement plans (private-sector employer and government employer plans, as well as DB and DC plans) and IRAs, which are designed to complement Social Security benefits, provide retirement resources to about 80 percent of near-retiree households. Not surprisingly, higher-income households rely more heavily on employer-sponsored retirement plans and IRAs because Social Security replaces a lower portion of earnings for those with higher lifetime earnings. Finally, other assets (such as bank deposits; stocks, bonds, and mutual funds owned outside of employer-sponsored retirement plans and IRAs; business equity; and nonresidential property) are more extensively owned by wealthier households.

The U.S. retirement system generally has been successful at allowing most households to maintain their standard of living in retirement. Nevertheless, there is variation in outcomes within the population and certain groups face higher risks. For example, people who retire earlier than expected due to poor health are more likely to experience a drop in spending after retirement. Those with low levels of attachment to the labor force have a higher risk of poverty both before and after retirement.

As has always been the case, the future is uncertain and the U.S. retirement system will face many challenges. Increased healthcare costs could mean that retirees will need more resources in the future and will strain the Medicare and Medicaid systems. The Social Security system is not in long-term balance. To bring the system into balance will require either higher taxes or lower benefits, which will place burdens on workers either when they are working or when they are retired. Government employee pensions face pressures of their own, which might result in reduced benefits for those workers. Finally, regardless of retirement plan design, advance funding of retirement expenses will prove difficult in the current low interest rate environment.

## **Appendix: Additional Detail on Surveys, Housing-Related Data, and Near-Retiree Households**

This appendix provides additional detail on surveys or data presented in the main paper. These surveys are summarized in Figure A.1. Figures 10 and 11 in the paper plot a variety of housing-related data by birth cohort over time. The underlying data for the top panel of Figure 10 are reported in Figure A.2. The underlying data for the lower panel of Figure 10 are reported in Figure A.3. The underlying data for Figure 11 are reported in Figure A.4. Figure A.5 presents additional detail on the pensions, housing, and wealth for near-retiree households by household income in 2010.

FIGURE A.1

**Summary of Survey Data Sources Used in This Research Paper**

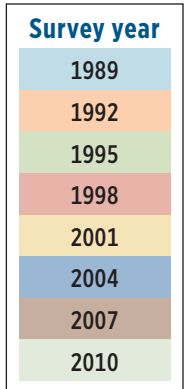
<b>Data source</b>	<b>Dates conducted</b>	<b>Sample size</b>
Survey of Consumer Finances (SCF) conducted by the U.S. Federal Reserve Board	Triennially; 1989 to 2010	6,500 households in 2010
Health and Retirement Study (HRS) conducted by the University of Michigan	Biennially; 1992 to 2010	Over 27,000 adults over age of 50
Health and Retirement Study—Consumption and Activities Mail Survey (HRS-CAMS) conducted by the University of Michigan	Biennially; 2001 to 2009	Subsample of 5,000 HRS respondents
Current Population Survey (CPS) Annual Social and Economic Supplement conducted by the U.S. Census Bureau	Annually in March; 1959 to 2012	74,383 households in March 2012
National Benefits Survey (NBS) conducted by the Social Security Administration	1982 with follow-up in 1991	18,600 adults
Panel Study of Income Dynamics (PSID) conducted by the University of Michigan	Annually; 1968 to 1997. Biennially; 1999 to 2011	9,000 families and 22,000 individuals
Consumer Expenditure Survey (CEX) conducted by the Bureau of Labor Statistics	Annually; 1980 to 2011	Approximately 7,000 households in 2011
UPC Homescan Panel conducted by AC Nielsen Co.	January 1993 to March 1995	2,100 households in Denver
EBRI/ICI Participant-Directed Retirement Plan Data Collection Project	Annually; 1996 to 2010	23.4 million 401(k) participants in 2010

FIGURE A.2

### Incidence of Homeownership by Birth Cohort

Homeownership; percentage of U.S. households by 10-year birth cohort of the head of household; 1989–2010

Age at time of survey	Born 1970–1979	Born 1960–1969	Born 1950–1959	Born 1940–1949	Born 1930–1939	Born 1920–1929
25	30.0	29.6				
26	34.5	31.4				
27	39.0	33.2				
28	42.6	35.1				
29	46.2	38.9				
30	49.9	42.8				
31	53.1	46.7				
32	56.4	50.2				
33	59.7	53.6				
34	59.0	57.1				
35	58.4	58.7	56.8			
36	57.8	60.4	58.4			
37		62.0	60.0			
38		64.1	61.6			
39		66.2	63.0			
40		68.3	64.5			
41		68.3	65.9			
42		68.4	67.9			
43		68.4	69.9			
44		69.2	71.9			
45		69.9	73.0	71.0		
46		70.6	74.0	71.7		
47			75.1	72.4		
48			75.8	73.2		
49			76.5	74.2		
50			77.3	75.2		
51			77.7	76.2		
52			78.2	76.3		
53			78.6	76.5		
54			77.8	76.6		
55			76.9	78.1	79.2	
56			76.0	79.7	78.9	
57				81.2	78.6	
58				80.5	78.4	
59				79.8	79.7	
60				79.1	81.0	



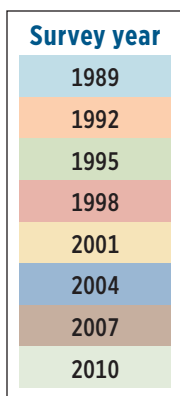
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FIGURE A.2 CONTINUED

### Incidence of Homeownership by Birth Cohort

Homeownership; percentage of U.S. households by 10-year birth cohort of the head of household; 1989–2010

Age at time of survey	Born 1970–1979	Born 1960–1969	Born 1950–1959	Born 1940–1949	Born 1930–1939	Born 1920–1929
61				80.8	82.4	
62				82.5	82.2	
63				84.2	82.0	
64				84.0	81.8	
65				83.8	81.9	78.5
66				83.6	82.1	78.6
67					82.2	78.7
68					81.9	78.8
69					81.6	78.8
70					81.3	78.8
71					82.7	78.7
72					84.1	79.0
73					85.6	79.3
74					84.6	79.7
75					83.7	80.1
76					82.7	80.5
77						81.0
78						82.6
79						84.2
80						85.8



Note: Age is based on the age of the head of household. Data between survey years are interpolated.

Source: Investment Company Institute tabulations of the 1989–2010 Survey of Consumer Finances

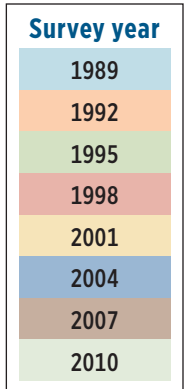


FIGURE A.3

### Mortgage Incidence by Birth Cohort

Homeowners with no mortgage debt; percentage of U.S. households by 10-year birth cohort of head of household; 1989–2010

Age at time of survey	Born 1970–1979	Born 1960–1969	Born 1950–1959	Born 1940–1949	Born 1930–1939	Born 1920–1929
25	4.1	3.9				
26	4.3	4.3				
27	4.5	4.8				
28	4.5	5.2				
29	4.5	5.3				
30	4.5	5.5				
31	4.8	5.6				
32	5.0	6.2				
33	5.3	6.8				
34	4.8	7.3				
35	4.3	7.2	6.8			
36	3.9	7.1	7.2			
37		7.0	7.7			
38		6.5	8.2			
39		6.0	9.1			
40		5.4	10.1			
41		6.1	11.0			
42		6.8	11.4			
43		7.5	11.8			
44		8.7	12.2			
45		9.9	12.5	10.4		
46		11.1	12.7	10.8		
47			12.9	11.1		
48			12.8	11.5		
49			12.7	12.8		
50			12.6	14.0		
51			13.1	15.3		
52			13.7	16.5		
53			14.2	17.8		
54			16.1	19.0		
55			18.0	22.1	26.0	
56			19.9	25.3	28.3	
57				28.4	30.6	
58				28.3	32.9	
59				28.2	35.0	
60				28.1	37.2	



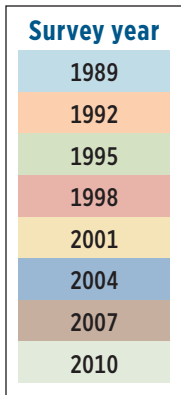
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FIGURE A.3 CONTINUED

### Mortgage Incidence by Birth Cohort

Homeowners with no mortgage debt; percentage of U.S. households by 10-year birth cohort of head of household; 1989–2010

Age at time of survey	Born 1970–1979	Born 1960–1969	Born 1950–1959	Born 1940–1949	Born 1930–1939	Born 1920–1929
61				29.3	39.3	
62				30.4	40.0	
63				31.5	40.8	
64				32.6	41.5	
65				33.7	42.2	53.5
66				34.9	42.9	54.2
67					43.6	54.9
68					45.5	55.7
69					47.3	55.9
70					49.2	56.1
71					49.7	56.3
72					50.2	57.8
73					50.7	59.3
74					51.5	60.8
75					52.2	62.5
76					53.0	64.2
77						65.8
78						65.0
79						64.2
80						63.4



Note: Age is based on the age of the head of household. Data between survey years are interpolated.

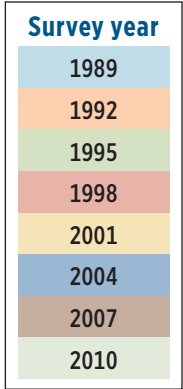
Source: Investment Company Institute tabulations of the 1989–2010 Survey of Consumer Finances

FIGURE A.4

**Median Loan-to-Value Ratios for Homeowners with Debt by Birth Cohort**

Median loan-to-value ratio (percent) by 10-year birth cohort of the head of household; 1989–2010

Age at time of survey	Born 1970–1979	Born 1960–1969	Born 1950–1959	Born 1940–1949	Born 1930–1939	Born 1920–1929
25	81.0	69.0				
26	78.0	69.7				
27	75.0	70.3				
28	75.0	71.0				
29	75.0	72.7				
30	75.0	74.3				
31	75.3	76.0				
32	75.7	74.3				
33	76.0	72.7				
34	77.7	71.0				
35	79.3	69.0	60.0			
36	81.0	67.0	60.0			
37		65.0	60.0			
38		64.7	60.0			
39		64.3	60.7			
40		64.0	61.3			
41		62.0	62.0			
42		60.0	62.3			
43		58.0	62.7			
44		61.0	63.0			
45		64.0	59.7	38.0		
46		67.0	56.3	40.3		
47			53.0	42.7		
48			53.0	45.0		
49			53.0	44.7		
50			53.0	44.3		
51			50.3	44.0		
52			47.7	45.7		
53			45.0	47.3		
54			47.7	49.0		
55			50.3	47.3	25.0	
56			53.0	45.7	28.3	
57				44.0	31.7	
58				41.7	35.0	
59				39.3	35.0	
60				37.0	35.0	



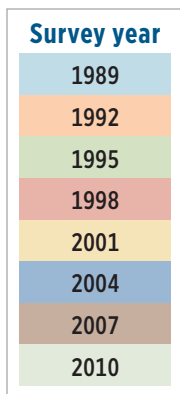
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FIGURE A.4 CONTINUED

### Median Loan-to-Value Ratios for Homeowners with Debt by Birth Cohort

Median loan-to-value ratio (percent) by 10-year birth cohort of the head of household; 1989–2010

Age at time of survey	Born 1970–1979	Born 1960–1969	Born 1950–1959	Born 1940–1949	Born 1930–1939	Born 1920–1929
61				36.7	35.0	
62				36.3	34.3	
63				36.0	33.7	
64				40.0	33.0	
65				44.0	32.7	14.0
66				48.0	32.3	18.0
67					32.0	22.0
68					32.7	26.0
69					33.3	26.3
70					34.0	26.7
71					32.7	27.0
72					31.3	26.3
73					30.0	25.7
74					31.7	25.0
75					33.3	24.0
76					35.0	23.0
77						22.0
78						26.0
79						30.0
80						34.0



Note: Age is based on the age of the head of household. Loan-to-value ratio is calculated for U.S. households with mortgages. Data between survey years are interpolated.

Source: Investment Company Institute tabulations of the 1989–2010 Survey of Consumer Finances

FIGURE A.5

**Pensions, Housing, and Wealth for Near-Retiree Households***Near-retiree households,<sup>1</sup> 2010*

	Household income <sup>2</sup>										All near-retiree households
	Less than \$20,000	\$20,000 to \$29,999	\$30,000 to \$44,999	\$45,000 to \$54,999	\$55,000 to \$69,999	\$70,000 to \$79,999	\$80,000 to \$99,999	\$100,000 to \$149,999	\$150,000 to \$199,999	\$200,000 or more	
<b>Percentage of near-retiree households</b>	7	10	13	10	11	7	9	14	8	11	100
<b>Household income (dollars)<sup>2</sup></b>											
Average	13,565	25,025	36,861	49,882	61,936	74,540	88,554	124,118	169,324	427,286	109,141
Median	14,231	25,413	36,594	49,809	62,007	75,222	90,469	126,047	166,707	378,141	67,090
<b>Household net worth (dollars)<sup>3</sup></b>											
Average	118,054	193,204	303,074	289,804	267,312	406,751	377,930	876,929	1,326,838	4,520,225	890,664
Median	5,260	28,111	124,300	150,000	168,870	209,690	250,600	574,600	969,530	3,217,000	221,300
<b>Accrued pension benefits</b>											
Some type of accrued pension benefit (percent)	42	52	66	77	87	92	94	96	95	97	81
Retirement assets only <sup>4</sup>	20	33	36	41	41	44	41	44	32	59	40
Both DB benefits and retirement assets <sup>4, 5</sup>	9	9	22	18	31	34	42	47	58	36	31
DB benefits only <sup>5</sup>	13	9	8	18	15	13	11	4	5	2	10
Average retirement assets (dollars) <sup>4</sup>	12,002	21,290	49,598	52,896	88,306	76,801	133,302	252,270	337,691	884,583	196,735
Median retirement assets (dollars) <sup>4</sup>	0	0	6,000	4,000	19,000	35,200	72,000	161,000	248,000	480,000	34,000
<b>Selected statistics for households with retirement assets</b>											
Average retirement assets (dollars) <sup>4</sup>	41,197	50,165	85,969	89,954	122,530	97,910	159,962	275,345	375,284	930,553	277,064
Median retirement assets (dollars) <sup>4</sup>	10,000	21,000	30,000	45,500	50,000	75,000	119,000	178,000	327,000	540,000	101,350
Share that also have DB benefits (percent) <sup>5</sup>	32	22	38	30	43	43	51	51	64	38	43
Median ratio of retirement assets to net worth (percent) <sup>3, 4</sup>	31	20	23	30	35	28	43	38	27	23	29

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FIGURE A.5 CONTINUED

**Pensions, Housing, and Wealth for Near-Retiree Households**

*Near-retiree households,<sup>1</sup> 2010*

	Household income <sup>2</sup>										All near-retiree households
	Less than \$20,000	\$20,000 to \$29,999	\$30,000 to \$44,999	\$45,000 to \$54,999	\$55,000 to \$69,999	\$70,000 to \$79,999	\$80,000 to \$99,999	\$100,000 to \$149,999	\$150,000 to \$199,999	\$200,000 or more	
<b>Housing</b>											
Homeownership rate (percent)	35	57	77	84	83	90	90	96	95	98	82
Average home equity (dollars) <sup>6</sup>	27,110	48,779	82,290	90,294	83,350	98,374	101,643	187,781	290,029	644,871	168,950
Median home equity (dollars) <sup>6</sup>	0	4,000	51,000	65,000	72,000	75,000	70,000	159,000	185,000	436,000	79,000
<b>Selected statistics for home-owning households</b>											
Average house value (dollars)	131,638	137,662	160,628	191,463	182,333	209,618	215,525	319,877	451,044	925,238	320,853
Median house value (dollars)	120,000	95,000	120,000	150,000	150,000	190,000	175,000	260,000	370,000	700,000	200,000
Average home equity (dollars) <sup>6</sup>	77,089	85,031	106,513	107,693	100,190	109,817	112,677	194,966	306,249	660,225	205,917
Median home equity (dollars) <sup>6</sup>	80,000	68,000	70,000	75,000	80,000	98,000	79,000	164,000	202,000	450,000	104,000
Median ratio of home equity to net worth (percent) <sup>3, 6</sup>	51	61	45	46	46	34	36	26	24	14	32
Incidence of mortgage debt (percent)	48	57	69	84	73	83	87	72	83	72	75
Median loan-to-value ratio for all homeowners (percent)	0	18	30	46	42	35	53	35	34	27	35
Median loan-to-value ratio for homeowners with debt (percent)	44	48	53	54	64	53	57	50	36	44	51

<sup>1</sup> Near-retiree households are households with a working head aged 55 to 64, excluding the top and bottom 1 percent of the income distribution.

<sup>2</sup> Total is household income before taxes in 2009.

<sup>3</sup> Household net worth is the difference between household gross assets (financial and nonfinancial) and liabilities.

<sup>4</sup> Retirement assets include DC plan assets (401(k), 403(b), 457, thrift, and other DC plans) and IRAs (traditional, Roth, SEP, SAR-SEP, and SIMPLE).

<sup>5</sup> DB benefits include households currently receiving DB benefits and households with the promise of future DB benefits, whether from private-sector or government employers.

<sup>6</sup> Home equity is the home value less any outstanding mortgage debt on that home.

Source: Investment Company Institute tabulations of the 2010 Survey of Consumer Finances

## Notes

- <sup>1</sup> For a summary of the 2010 SCF, see Bricker et al. 2012. For a brief summary of each of the surveys referenced in this paper, see Figure A.1 in the appendix.
- <sup>2</sup> In 2007, retirement was most often cited as the primary reason for saving, mentioned by 34 percent of households, while liquidity was mentioned by 32 percent of households as the primary reason for saving (see Bricker et al. 2012).
- <sup>3</sup> See Congressional Budget Office 2012b.
- <sup>4</sup> For a brief summary of each of the surveys referenced in this paper, see Figure A.1 in the appendix.
- <sup>5</sup> Economists refer to this as imputed rental income.
- <sup>6</sup> At the end of June 2012, total U.S. retirement market assets were \$18.5 trillion and households' total financial assets were \$51.9 trillion. See Investment Company Institute 2012 and U.S. Federal Reserve Board 2012a.
- <sup>7</sup> See U.S. Department of Labor, Employee Benefits Security Administration 2012 and U.S. Federal Reserve Board 2012a.
- <sup>8</sup> The estimate for state and local government plans covers the \$3.1 trillion in DB plans in mid-2012; while federal plans had \$1.5 trillion, predominantly in DB plans.
- <sup>9</sup> For a brief summary of each of the surveys referenced in this paper, see Figure A.1 in the appendix.
- <sup>10</sup> For market returns, see Morningstar 2012. The National Bureau of Economic Research (NBER), which publishes its assessment of U.S. business cycles, indicated that the two most recent recessions occurred from March 2001 through November 2001, and from December 2007 through June 2009. See National Bureau of Economic Research 2010. For reference to the great recession, see Leonhardt 2009.
- <sup>11</sup> There are differences within the group aged 65 or older. For example, ICI tabulations of CPS data show that poverty rates for people aged 85 or older are higher than for people aged 65 to 84. That said, much like the entire 65 or older age group, poverty rates for people aged 85 or older have fallen over time. In 2011, the poverty rate for people aged 85 or older was 12 percent, compared with 38 percent in 1968.
- <sup>12</sup> In each period of life, an individual's income can be used to fund consumption (spent) or saved to fund consumption in a future period. Because consumption plus savings must equal income in each period, an individual's choice of consumption in a given period also represents the individual's choice of savings in that period. In life-cycle models, it is assumed that an individual chooses how much to consume (and how much to save) in each period so that he or she is the happiest they can be over the course of his or her lifetime, given the stream of income the individual receives from working. For a discussion of life-cycle models of consumption, including citations to academic articles on the topic, see Brady and Bogdan 2011.
- <sup>13</sup> An earlier study, Engen, Gale, and Uccello 2005, also uses a life-cycle model to predict optimal wealth. However, they did not solve the model for each household individually. Instead, they used a simulation model to generate a distribution of optimal ratios of wealth-to-lifetime household earnings and compared this distribution to the distribution of wealth-to-lifetime household earnings ratios in the HRS. They conclude that typical middle-income households in the sample were saving more than predicted; that the typical higher-income households saved much more than predicted; and that the typical lower-income households saved less than predicted.
- <sup>14</sup> For a brief summary of each of the surveys referenced in this paper, see Figure A.1 in the appendix.
- <sup>15</sup> Hurst 2008 also indicates that retired households spend more time on food production in the home.
- <sup>16</sup> Comparing the count of tax return filers in this group to the estimated total population of this group (based on CPS data), Brady and Pierce 2012 estimate that 96 percent of all individuals aged 55 to 61 who worked and who did not receive Social Security benefits in 1999 filed a tax return in 1999.

- <sup>17</sup> Consistent with these studies, Holden and Schrass 2011 and Holden and Bass 2012 find that traditional IRA-owning households or investors tend to postpone withdrawals until they are required to take them.
- <sup>18</sup> For a detailed history of the evolution of Social Security benefits, see Social Security Administration 2012a.
- <sup>19</sup> See Social Security Administration 2012c.
- <sup>20</sup> The average wage index (AWI) originally was estimated using annualized first-quarter earnings. The SSA now uses annual earnings as reported on IRS W-2 Forms. However, to smooth the series, SSA uses the growth rate calculated from the W-2 to move the original AWI series forward, rather than using the actual averages from the W-2 sample. For example, average wages per worker in 2011 were \$41,211, but the AWI was \$42,980. For a description of the AWI, see Social Security Administration 2012e.
- <sup>21</sup> The workers' earnings are "scaled" so that earnings are a higher percentage of AWI in middle age and are a lower percentage early and late in a worker's career. For a discussion of scaling, see Clingman and Nichols 2008.
- <sup>22</sup> Since the mid-1980s, projected replacement rates at normal retirement age (NRA) have declined only slightly and are projected to remain stable under current law. However, the NRA is in the process of increasing, from age 65 for those born as late as 1937 (attained age 65 in 2002) to age 67 for those born in 1960 (will attain age 67 in 2027) or after. For those who claim benefits at age 65, the increase in the NRA represents approximately a 13 percent cut in benefits. However, the increase in NRA is about in line with the projected average increase in life expectancy between the time the legislative change to the system was made (1983) to the time the increase in the NRA will be fully phased in (2027). In this sense, the similarity in replacement rates at NRA in the mid-1980s and 2027 represents stability in the ratio of average expected lifetime benefits to average earnings. For a discussion of differential mortality trends within the population, see Waldron 2007.
- <sup>23</sup> In addition, the hypothetical workers are assumed to be single, and thus the estimates do not include spousal benefits.
- <sup>24</sup> This approach also allows CBO to model the effects of spousal benefits. In addition, by grouping individuals by household, CBO avoids certain misclassifications, such as counting a low-earning spouse in a high-earning household as being among the lifetime poor.
- <sup>25</sup> Social Security benefits are based on an individual's earnings history, with earnings below the annual earnings base (\$110,100 for 2012)—also referred to as covered earnings—included in the calculation (see Social Security Administration 2012g). Covered earnings before age 60 are indexed using the AWI; nominal covered earnings are used after age 60. Average indexed monthly earnings (AIME) is the sum of indexed earnings from the 35 highest earning years (chosen after indexation) divided by 420 (the number of months in a 35-year period). The benefit that a recipient is entitled to upon reaching NRA is the primary insurance amount (PIA). For an individual attaining age 62 in 2012, the PIA is 90 percent of the first \$767 of AIME plus 32 percent of AIME from over \$767 through \$4,624 plus 15 percent of AIME over \$4,624. The PIA is adjusted to account for inflation that occurs between the year the recipient attains age 62 and the year the individual first claims benefits. If an individual claims Social Security benefits before or after NRA, additional reductions or credits apply to the PIA. For more information on the calculation of the PIA, see Social Security Administration 2012d.
- <sup>26</sup> See Social Security Administration 2012a for a more complete discussion of the history of Social Security.
- <sup>27</sup> The Social Security Act Amendments of 1939 added spousal, survivors, and dependent children's benefits. The Social Security Act Amendments of 1954 added disability benefits. See Social Security Administration 2012a.
- <sup>28</sup> The 1972 legislation specified that the first COLA would take effect in 1975. Prior to implementing the automatic indexation of benefits, several legislative increases to benefits were adopted between 1969 and 1973. See Social Security Administration 2012a.



- <sup>29</sup> Prior to the adoption of the current benefit formula in 1977, Social Security benefits were determined by the use of a table. The table gave benefit amounts based on a workers average lifetime earnings, with the average calculated using nominal amounts of earnings. The method used to index benefits was to adjust for inflation the amount of benefits paid for any given level of average (nominal) earnings. With this method, inflation was essentially reflected in both the benefit formula—that is, in the amount of benefits paid per dollar of earnings—and, for new retirees (because wages tend to increase with inflation) in the measure of earnings. The benefit formula adopted in 1977 (and used today) separated the formula from the measure of earnings. The percentages used in the formula do not change over time. Instead, earnings and the dollar amount of average earnings to which the various percentages apply are indexed to wage growth. This method leads to stable replacement rates as a percentage of wage-indexed earnings. Because the new formula was phased in—it applied to workers aged 62 and younger in 1979—the net result was that replacement rates for those workers claiming benefits at NRA spiked temporarily in the early 1980s. See Social Security Administration 2012a and Kelley and Humphreys 2012.
- <sup>30</sup> The 1983 amendments increased the NRA gradually over time. Because the increases in the NRA are projected to be about in line with increased life expectancy, a stable Social Security replacement rate at NRA implies that the lifetime benefits that a retiree can expect to get from Social Security are also stable. For a discussion of differential mortality trends within the population, see Waldron 2007.
- <sup>31</sup> See Social Security Administration 2012a.
- <sup>32</sup> In 1992, 78 percent of all households in the 1930s birth cohort owned their homes and 33 percent owned their homes with no mortgage debt (see Figures A.2 and A.3 in the appendix). Thus, in 1992, the percentage of home-owning households in the 1930s birth cohort with no mortgage debt was 42 percent (=33 percent/78 percent).
- <sup>33</sup> For comparison of SCF data on households' balance sheets in 2007 and 2010, see Bricker et al. 2012.
- <sup>34</sup> See the callout box on page 13 for the definition of near-retiree households that are analyzed in this paper.
- <sup>35</sup> Although this percentage is not reported directly on Figure 12, it can be calculated using information presented in Figure 12. Specifically, average home equity for all households (\$168,950) divided by average net worth for all households (\$890,664) is equal to 19 percent.
- <sup>36</sup> For a discussion of the accrual of benefits in traditional DB plans, see Brady and Bogdan 2010.
- <sup>37</sup> This includes traditional DB plans and cash balance plans. See U.S. Department of Labor, Employee Benefits Security Administration 2012.
- <sup>38</sup> Withdrawals made before reaching age 59½ are subject to a 10 percent tax penalty, unless they meet certain specified exceptions.
- <sup>39</sup> See Investment Company Institute 2012.
- <sup>40</sup> For the 1989 data, see U.S. Department of Labor, Employee Benefits Security Administration 2012. For the 2010 data, see Holden et al. 2011.
- <sup>41</sup> See Holden, Brady, and Hadley 2006.
- <sup>42</sup> See Investment Company Institute 2012.
- <sup>43</sup> See Investment Company Institute 2012.
- <sup>44</sup> See Holden et al. 2005.
- <sup>45</sup> See Holden et al. 2005.
- <sup>46</sup> See Investment Company Institute 2012.

- <sup>47</sup> See Investment Company Institute 2012.
- <sup>48</sup> The point that the amount of retirement assets accumulated by those approaching retirement today is not a good indication of what will be accumulated in the accounts is made in Poterba, Venti, and Wise 2007. The authors conclude that: “Our projections suggest that the advent of personal account saving will increase wealth at retirement for future retirees across the lifetime earnings spectrum.” Holden and VanDerhei 2002 also point out that one cannot evaluate 401(k) plans based on today’s retirees because current retirees have not had a full career with 401(k) plans.
- <sup>49</sup> For example, see Munnell and Sundén 2004 and 2006; U.S. Government Accountability Office 2007 and 2009; and Purcell 2009.
- <sup>50</sup> See callout box on page 37.
- <sup>51</sup> For a discussion of tenure of U.S. workers and changes in vesting rules over time, see Brady and Bogdan 2010.
- <sup>52</sup> As reported in Purcell 2009 (page 15): “For example, if the median retirement account balance of \$100,000 among households headed by persons 55 to 64 years old in 2007 were converted to an annuity, it would provide a monthly income of \$700 per month (\$8,400 annually) to a man retiring at age 65 in 2009.” Analyzing CPS data, Brady and Bogdan 2012b find that between 1975 and 2011 the median annual private-sector pension income received by retiree households with such income, expressed in constant 2007 dollars, averaged \$6,700 and ranged from \$5,155 (in 1982) to 8,341 (in 2011).
- <sup>53</sup> In the study, pre-retirement consumable income is measured by earnings less taxes and savings for households who rent; and measured by earnings less taxes, savings, and mortgage payments for homeowners. Consumable income in retirement is equal to Social Security benefits plus income derived from 401(k) plans less taxes. For a more detailed description of the method and results, see Brady 2012.
- <sup>54</sup> These statistics are available in Brady and Bogdan 2012b, supplemental tables.
- <sup>55</sup> For a brief summary of each of the surveys referenced in this paper, see Figure A.1 in the appendix.
- <sup>56</sup> A separate study finds that poor health is also associated with low levels of wealth at the end of life (see Poterba, Venti, and Wise 2012).
- <sup>57</sup> See Haveman et al. 2007, page 36.
- <sup>58</sup> For projections related to these programs, see The Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds 2012; The Boards of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds 2012; Congressional Budget Office 2012a; and Social Security Administration 2012f.
- <sup>59</sup> See Brady 2010 for a discussion of how different methods of cutting Social Security benefits would impact workers with different levels of lifetime income.
- <sup>60</sup> For estimates of funding liabilities of state and local governments, see Rauh and Novy-Marx 2010.
- <sup>61</sup> See Brady and Bogdan 2012b.
- <sup>62</sup> In an efficient financial market, the expected return on all assets, including risky assets, will be linked to the rate of return on the risk-free asset. Investors will demand a higher expected rate of return on risky assets as compensation for taking on risk. However, the total expected return will still be a function of the risk-free rate of return: the total expected rate of return will be equal to the risk-free rate plus a compensatory risk premium. For a discussion of the impact of interest rate risk and market risk on pre-funding retirement, see Brady 2009.
- <sup>63</sup> For Treasury bond yield information, see U.S. Federal Reserve Board 2012b.

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