Retirement Income

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RETIREMENT INCOME

The Crucial Role of Social Security

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Introduction

Retirement income security is a subject that regularly occupies the public debate, and President Bush's proposal to privatize Social Security by using a substantial portion of the program's contributions to create private accounts has only increased the attention on retirement income in the public policy arena. But Social Security benefits are only one piece of the retirement income security puzzle. A truly accurate assessment of Americans' retirement security must consider all forms of wealth—including private pensions, housing, financial assets, and Social Security—and how they have changed over time for different groups.

Social Security is an insurance program that protects families from the economic loss of an adult wage earner who is no longer able to work regularly because of death, disability, or old age. These Social Security benefits can be converted into the amount that would need to be saved by individuals to replace the program's benefits. For instance, for the typical worker, actuaries estimate that the disability benefit is worth $353,000, and the survivors' benefit is worth $403,000. This conversion allows Social Security to be compared within a private "ownership," or wealth, context.

In examining Social Security benefits within the context of other retirement savings programs, the data show a number of striking results:

- **For the typical person approaching retirement, the value of expected future Social Security retirement benefits represents the largest single source of wealth.** That finding is consistent with

the well-known fact that Social Security provides more than half of all income for about two-thirds of people over age 65.

- **Social Security provided a larger addition to wealth than any other form of wealth between 1989 and 2001 for the average person near retirement.** As labor markets tightened and annual earnings improved over that period, the expected value of Social Security benefits rose. Although stock market and home prices rose significantly over that timeframe, these increases had only a modest effect on the wealth of those in the middle of the income spectrum; their stock market holdings were too low to be affected, and increased borrowing kept home equity in check.

- **In terms of the adequacy of workers' retirement savings, the data indicate that the retirement system outside of Social Security is a system with many holes.** Despite large tax incentives from the federal government for workers to save for retirement, more than one-fifth of households nearing retirement (those between the ages of 56 and 64) had no retirement savings other than Social Security. In contrast, nearly everyone can expect to receive some benefits from Social Security.

- **Even among the households that have private pensions, savings are very unevenly distributed**. Indeed, one of the most dramatic transformations over the last two decades has been the replacement of traditional Defined Benefit (DB) pension plans with Defined Contribution (DC) plans such as 401(k)s. This shift has actually been detrimental to a large share of the working population. Despite increased coverage by DC plans and the rise in the stock market, the total DB plus DC wealth of the typical person nearing retirement was no higher in 2001 than in 1983.

- **Retirement savings, including Social Security wealth, notably improved from 1989 to 2001, although large trouble spots remain.** The share of households that could expect to have retirement income of less than twice the poverty line declined. Also, the share of households that could hope to replace at least half of their current income with benefits from their savings in retirement rose from 1989 to 2001.

- **There is significant inequality in the retirement preparedness of different demographic groups.** Minorities and single-female-headed households saw larger than average improvements in retirement preparedness, although they remained less well prepared than other groups. Much of this inequality results from an uneven distribution of retirement savings outside of Social Security, while expected Social Security benefits are an equalizing force. The tight labor market was particularly helpful in raising the annual earnings and future Social Security benefits of these groups. In addition, these groups depend more heavily on Social Security for their retirement income than do other groups.

The many ways in which Social Security has proven superior to private retirement benefits should give pause to those who want to carve up Social Security through privatization. Social Security is universal, and its value has risen faster than other forms of retirement savings for the vulnerable households that need additional retirement benefits the most.

The lesson is twofold. First and foremost, protect Social Security, because the inequality of other retirement holdings suggests variations in their returns and the need for some secure retirement savings. Second, fill the holes in the retirement savings system outside of Social Security, so that a decent standard of living in retirement as a reward for a life of hard work becomes a reality for America's middle class and working poor.

CHAPTER 1

Measuring wealth, retirement wealth, and retirement income adequacy

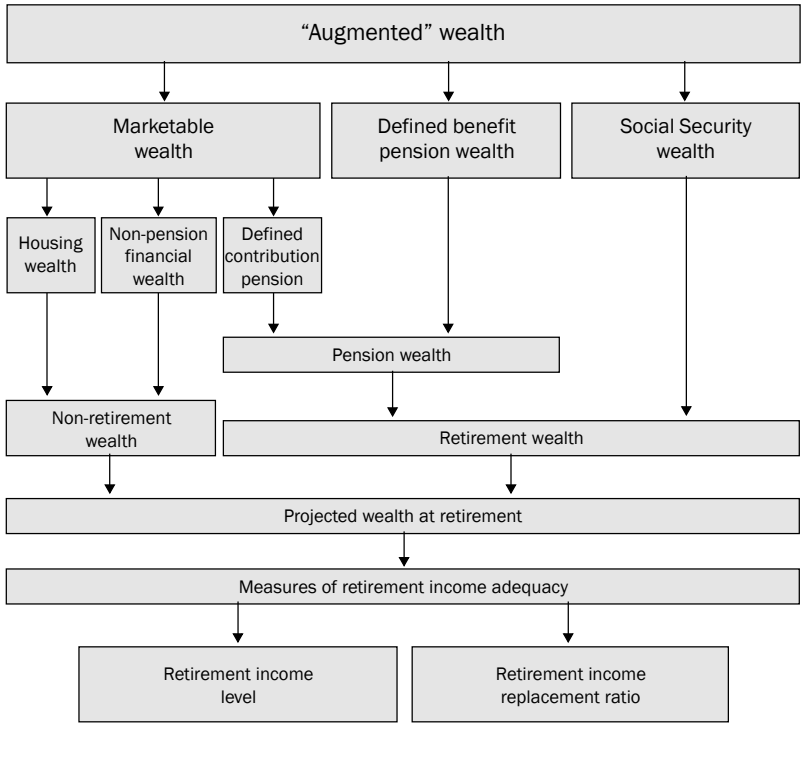
This empirical analysis of retirement income adequacy proceeds in three steps. The first is a calculation of how much wealth—in its various manifestations, including marketable wealth, pension wealth, and Social Security wealth—households held in 2001 and how that amount compared to 1983, 1989, and 1998. The second step is a calculation of the stream of retirement income that today's older workers can expect from their accumulated wealth at the time of their retirement. The last step is a comparison of the expected income stream generated from different wealth holdings to two standards of adequate retirement income: twice the poverty-level income and the ratio of final earnings replaced by retirement income. These measures allow for an assessment of whether households have saved enough for retirement and how this has changed over time.

An important and consistent finding in the literature is that wealth dispersion is unequal. Consequently, this analysis also studies the changes in wealth and retirement income security for households with different demographic characteristics such as age, gender, race or ethnicity, marital status, and homeownership status.

Types of wealth

This analysis begins by measuring total wealth (termed here "augmented wealth"), which combines three dimensions of wealth computed from Survey of Consumer Finance (SCF) data: marketable wealth, Defined Benefit (DB) pension wealth, and Social Security wealth. This concept is illustrated in **Figure A**.

FIGURE A
Wealth, retirement wealth, and retirement income adequacy



Marketable wealth (or net worth) is defined as the current value of all marketable or fungible assets less the current value of debts. Net worth is thus the difference in value between total assets and total liabilities. Total assets are defined as the sum of (1) the gross value of owner-occupied housing; (2) other real estate owned by the household; (3) cash and demand deposits; (4) time and savings deposits, certificates of deposit, and money market accounts; (5) government bonds, corporate bonds, foreign bonds, and other financial securities; (6) the cash surrender value of life insurance plans; (7) the cash surrender value of pension plans, including individual retirement accounts (IRAs), Keoghs, and 401(k) plans; (8) corporate stock and mutual funds; (9) net equity in unincorporated businesses; and (10) equity in trust funds. To-

tal liabilities are the sum of (1) mortgage debt; (2) consumer debt, including auto loans; and (3) other debt.

Marketable wealth reflects wealth as a store of value and therefore a source of potential consumption. The assumption is that this concept best reflects the level of well-being associated with a family's wealth holdings. Thus, only assets that can be readily converted to cash (that is, "fungible" ones) are included. As a result, consumer durables—such as automobiles, televisions, furniture, household appliances, and the like—are excluded here, since these items are not easily marketed or their resale value typically far understates the value of their consumption services to the household.

Our analysis also includes some data on a more restricted concept of wealth, referred to here as "financial wealth," which is defined as net worth minus net equity in owner-occupied housing. Financial wealth is a more "liquid" concept than marketable wealth, since one's home is difficult to convert into cash in the short term. Financial wealth thus reflects the resources that may be immediately available for consumption or various forms of investments.

Of particular importance to this study are measures of retirement wealth, i.e., pension and Social Security wealth. (Factoring both pension and Social Security wealth into the retirement income equation involves a large number of steps, which are detailed in the appendix.) Pension wealth consists of two parts. The first is the value of Defined Contribution (DC) wealth, which is equal to the cash surrender value (or the value for which the assets could be sold at a given point in time) of pension plans, including IRAs, Keoghs, and 401(k) plans (included in the measure of marketable wealth, as discussed above).[1] The second component of pension wealth is the capitalized value of expected benefits from defined benefit pension plans, both in the public and private sectors. Social Security wealth is defined as the present value of expected future Social Security benefits.

These measures allow a computation of each of the three tiers of retirement wealth, as shown in Figure A: Social Security wealth, pension wealth, and non-retirement wealth (marketable wealth less defined contribution pension wealth). This study documents what has happened to each of these three resource components from 1983 to 2001 for people over the age of 46.[2]

Total retirement wealth is subsequently used to calculate retirement income and to establish whether households have enough for a decent stan-

dard of living in retirement. Each retirement wealth component gives households a separate stream of income. The sum of these income streams can be compared to standards of retirement income adequacy, specifically, twice the poverty line and a household's pre-retirement earnings.

CHAPTER 2

Rising retirement wealth results in improved retirement income security

As mentioned earlier, there are three tiers of retirement savings to consider: Social Security, private pensions, and other forms of savings.[3] Social Security, from its inception, was meant to be a near-universal program that would provide a basic retirement benefit. The intention was that private employer-sponsored pensions would supply the bulk of the additional income and that additional savings would round out retirement income as "icing on the cake." It is clear from the data that Social Security fulfills its assigned role and that its importance has even grown in recent years. In comparison, though, large holes remain with respect to employer-sponsored pensions, while private savings outside of retirement wealth play more than just a supplemental role. Especially when housing wealth is included, wealth outside of retirement wealth can also be a substantial addition to retirement.

Prior to retirement at age 65, Social Security is the most important form of retirement wealth for the typical, or median, household (**Table 1**). In 2001, households between the ages of 47 and 55 had a median Social Security wealth of $160,700, more than four times the median private pension wealth. A similar divergence is present for the age group between 56 and 64, which had a median Social Security wealth of $203,600 that was also four times larger than the private pension wealth of the typical household. It is interesting to note that the divergence between Social Security and private pension wealth does not diminish with age; that is, there is no suggestion that older workers start saving more than younger workers as retirement approaches.

TABLE 1 Household income and wealth, 1983, 1989, 1998, and 2001 (in thousands of 2001 dollars)

					Percentage change		
	1983	1989	1998	2001	1983-89	1989-2001	1983-2001
Ages 47-55							
1. Mean income	$64.3	$77.6	$77.6	$94.0	20.7%	21.1%	46.2%
2. Mean net worth less DC pensions (HDWX)	333.3	381.0	355.9	438.2	14.3	15.0	31.5
3. Mean DC+DB pension wealth	88.2	70.0	102.6	132.8	-20.6	89.6	50.6
4. Mean Social Security wealth	124.4	111.9	161.9	169.6	-10.1	51.5	36.3
5. Mean augmented wealth	545.9	562.9	620.4	740.6	3.1	31.6	35.7
Memo							
6. Median income	44.5	50.0	54.3	55.0	12.5	10.0	23.7
7. Median net worth less DC pensions (HDWX)	89.1	131.4	85.5	92.2	47.5	-29.9	3.4
8. Median DC+DB pension wealth	32.9	19.9	38.0	39.0	-39.6	96.1	18.4
9. Median Social Security wealth	129.3	119.0	147.5	160.7	-7.9	35.0	24.3
10. Median retirement wealth	177.3	157.7	209.5	215.3	-11.1	36.6	21.5
11. Median augmented wealth	298.0	296.0	329.9	338.0	-0.7	14.2	13.4
Ages 56-64							
1. Mean income	$62.3	$57.9	$74.3	$87.5	-7.0%	51.1%	40.6%
2. Mean net worth less DC pensions (HDWX)	397.2	399.5	487.2	598.4	0.6	49.8	50.6
3. Mean DC+DB pension wealth	116.9	120.6	177.5	179.4	3.1	48.7	53.4
4. Mean Social Security wealth	181.0	124.9	179.7	207.1	-31.0	65.8	14.4
5. Mean augmented wealth	695.2	645.1	844.5	984.8	-7.2	52.7	41.7
Memo							
6. Median income	38.8	35.7	39.3	44.0	-8.0	23.2	13.4
7. Median net worth less DC pensions (HDWX)	127.5	117.5	99.2	117.9	-7.8	0.3	-7.6
8. Median DC+DB pension wealth	55.4	54.0	55.5	48.0	-2.5	-11.1	-13.3
9. Median Social Security wealth	194.8	117.9	161.1	203.6	-39.4	72.7	4.6
10. Median retirement wealth	264.0	186.1	247.9	267.5	-29.5	43.7	1.3
11. Median augmented wealth	436.5	334.4	391.5	458.1	-23.4	37.0	5.0
Ages 65 and over							
1. Mean income	$36.8	$37.4	$40.9	$46.1	1.7%	23.3%	25.4%
2. Mean net worth less DC pensions (HDWX)	370.8	385.9	383.1	504.0	4.1	30.6	35.9
3. Mean DC+DB pension wealth	62.3	83.7	117.6	105.4	34.3	25.9	69.2
4. Mean Social Security wealth	147.3	109.0	137.0	146.6	-26.0	34.6	-0.4
5. Mean augmented wealth	580.4	578.6	637.7	756.1	-0.3	30.7	30.3
Memo							
6. Median income	19.3	20.6	22.8	24.0	6.6	16.7	24.4
7. Median net worth less DC pensions (HDWX)	101.4	109.4	135.9	142.0	7.9	29.8	40.0
8. Median DC+DB pension wealth	34.8	14.0	37.7	10.7	-59.8	-23.6	-69.3
9. Median Social Security wealth	132.6	90.5	121.3	127.0	-31.8	40.3	-4.3
10. Median retirement wealth	177.4	145.4	185.4	170.4	-18.1	17.3	-4.0
11. Median augmented wealth	314.3	277.3	342.9	351.2	-11.8	26.7	11.7

Source: Authors' computations from the 1983, 1989, 1998, and 2001 Survey of Consumer Finances (SCF).

Note: Households are classified by the age of the head of household. Key: Retirement Wealth (RW) = DC Pensions + DB Pension Wealth + Social Security Wealth (SSW). Augmented Wealth = Net Worth less DC (HDWX) + Retirement Wealth (RW)

Households have amassed substantial amounts of wealth outside of retirement savings. For the typical household between the ages of 47 and 55, total wealth was $338,000 compared to $215,300 in retirement wealth for the same age group (Table 1). For households between the ages of 56 and 64, the typical retirement wealth amounted to a total of $267,500 in 2001, compared to total wealth of $458,100. The fact that non-retirement wealth was substantial in 2001 was largely due to housing wealth, an important aspect with respect to wealth accumulation that deserves further attention. Typically, all forms of wealth are relatively unequally distributed, with the exception of Social Security wealth. For instance, the private pension wealth of the typical—median—household between the ages of 47 and 55 was only 29% of the average private pension wealth in that age group, indicating that pension wealth was heavily concentrated among those with substantial amounts of private pension wealth. In contrast, the Social Security wealth of the typical household in this age group was 95% of the average Social Security wealth in the respective age group. For households between the ages of 56 and 64, the ratios were 27% and 98%, suggesting that private pension wealth was substantially more unequally distributed than Social Security wealth in this age group as well.

What matters when considering how well households are prepared for retirement is the relationship between wealth and income.[4] Importantly, income was also unequally distributed, with median income at about 50% of average income (Table 1). Thus, depending on the relationship between the distribution of retirement wealth and that of income, the distribution of retirement income adequacy could be less unequal than either the distribution of wealth or of income, if an adequacy standard is used that relates retirement income to pre-retirement income (as is often done).

Putting wealth accumulation in relationship to absolute and relative retirement income standards shows that many households were not adequately prepared for retirement in 2001. For instance, 27% of households between the ages of 56 and 64 could expect to have retirement incomes that were below twice the poverty level. Also, as shown in **Table 2**, 44.1% of households in this age group could expect to have retirement incomes that were less than 75% of their current incomes. A replacement rate of about 75% is often considered a reliable measure of adequate retirement income.[5]

TABLE 2 Expected retirement income, 1989 and 2001

	1989	2001	Change 1989-2001
Expected mean retirement income based on wealth, expected pension and Social Security benefits (in thousands of 2001 dollars)			
All (ages 47-64)	$51.2	$70.6	37.8%
Ages 47-55	51.9	67.1	29.3
Ages 56-64	50.6	76.0	50.3
Non-Hispanic white	59.1	80.8	36.6
African American or Hispanic	22.2	28.1	26.8
Married couples	67.5	93.7	38.9
Single males	29.3	49.7	69.5
Single females	20.7	28.5	37.5
Homeowners	61.0	83.2	36.6
Renters	17.3	19.8	14.2
Percent of households with expected retirement income less than twice the poverty line based on wealth holdings and expected pension and Social Security benefits			
All (ages 47-64)	37.0%	29.7%	-7.3%
Age 47-55	33.1	31.5	-1.6
Age 56-64	41.2	27.0	-14.2
Non-Hispanic white	27.9	23.2	-4.7
African American or Hispanic	68.2	56.6	-11.6
Married couples	22.3	16.2	-6.0
Single males	52.8	33.3	-19.5
Single females	66.5	60.2	-6.3
Homeowners	25.0	19.5	-5.5
Renters	79.0	71.0	-8.0
Percent of households with expected retirement income less than 75% of current income, based on wealth holdings and expected pension and Social Security benefits			
All ages (47-64)	56.8%	52.2%	-4.6%
Age 47-55	62.8	57.5	-5.3
Age 56-64	50.4	44.1	-6.4
Non-Hispanic white	53.7	49.8	-3.9
African American or Hispanic	54.2	52.2	-1.9
Married couples	56.2	50.7	-5.4
Single males	51.1	47.6	-3.6
Single females	60.9	58.9	-2.1
Homeowners	51.7	49.5	-2.2
Renters	74.7	62.9	-11.8

Note: Households are classified by the age of the head of household. A 7% real return on assets is assumed for net worth.

Source: Authors' computations from the 1989 and 2001 Survey of Consumer Finances.

These figures vary by demographic characteristics, however (Table 2). The retirement income that whites could expect in 2001 was almost three times as large as that of African Americans or Hispanics; single males could expect, on average, to have retirement income that was almost twice as large as that of single females; and homeowners could expect to have retirement income that was more than four times as large as that of renters. Not surprisingly, then, 57% of African Americans or Hispanics, 60% of single women, and 71% of renters could expect to have retirement income that was below a threshold of twice the poverty line. This compares to 23% of whites, 33% of single men, and 20% of homeowners. In addition, 52% of minorities could expect to have less than 75% of their current income in retirement, compared to 50% of whites. Fifty-nine percent of single women and 48% of single men had savings that were insufficient to provide retirement income of more than 75% of their current income. Lastly, 63% of renters, but only 50% of homeowners, fell short of this target (Table 2).

How has the situation changed over time? Social Security wealth for the typical household saw strong gains from 1989 to 2001 for households between the ages of 47 and 64, offsetting the losses during the earlier period from 1983 to 1989 (Table 1). The trends for private pension wealth for the typical household differ by age, with younger households seeing gains from 1989 to 2001 and older households seeing losses (Table 1). For both age groups, though, the changes in private pension wealth for the typical household were substantially less than the changes in Social Security wealth. Also, for both age groups younger than 65, income for the typical household grew slower in inflation-adjusted terms from 1989 to 2001 than wealth (Table 1).[6] This is a reversal of the trends from 1983 to 1989, when income either grew faster or declined less than wealth for the typical household. The fact that wealth rose faster than income from 1989 to 2001 should have a positive effect on future retirement income adequacy.

One factor that may put a damper on increases in retirement income adequacy is a rise in wealth inequality, especially if it happens faster than increases in income inequality. For all ages, average incomes and average wealth increased faster than income and wealth for the median household. The divergence is most pronounced for households between the ages of 47 and 55, for whom average augmented wealth rose more than twice as fast as median augmented wealth. In comparison, for house-

holds age 65 and over, median augmented wealth and average augmented wealth increased at about the same rate, as average wealth grew by 31% and median wealth by 27% from 1989 to 2001. Although not conclusive, this divergent growth suggests that from 1983 to 2001, income and wealth became more unequally distributed, especially among younger households (Table 1).

However, wealth still rose quickly and broadly enough to lead to improvements in retirement income adequacy, although large gaps remained. For instance, the share of households between the ages of 56 and 64 that could expect to receive income that was greater than twice the poverty line upon retirement increased by 14 percentage points, from 59% in 1989 to 73% in 2001 (Table 2). All demographic groups saw improvements with respect to this adequacy standard. Improvements were particularly pronounced for minorities and single men. Further, the share of households ages 56 to 64 that could replace less than three-quarters of their current income shrank, from 50% in 1989 to 44% in 2001 (Table 2). Again all demographic groups saw improvements, especially married couples and renters.

Overall, the data show a general improvement in retirement income adequacy from 1989 to 2001. Our data also show that Social Security was the most important source of retirement wealth, that Social Security wealth was more equally distributed than pension wealth, and that Social Security wealth rose from 1989 to 2001. That still leaves the question of how much Social Security contributed to the improvement in retirement income adequacy during this time. For an answer, we first look at trends in retirement wealth, then at trends in non-retirement wealth, followed by a discussion of wealth trends by demographic group and a summary discussion of retirement income adequacy measures.

Social Security wealth at the heart of retirement wealth improvements

Social Security wealth has become the only form of retirement wealth that is almost universally held. Among households headed by someone age 65 or older, the share covered by Social Security rose from 78% in 1983 to 93% in 2001. That share will continue to grow in the future because Social Security coverage among households between the ages of 47 and 55 rose from 92.4% in 1983 to 98.2% in 2001 (**Table 3**).

TABLE 3 Percentage of households with retirement wealth by age class, 1983, 1989, 1998, and 2001 (in percentage points)

					Percentage-point change		
	1983	1989	1998	2001	1983-89	1989-2001	1983-2001
Ages 47-55							
1. DC pensions	14.5	33.6	60.8	63.7	19.1	30.1	49.2
2. DB pension wealth	67.9	58.3	40.4	40.0	-9.6	-18.4	-27.9
3. DC+DB pension wealth	69.5	72.9	73.2	73.5	3.4	0.6	4.0
4. Social Security wealth	92.4	97.7	98.0	98.2	5.2	0.6	5.8
5. DC+DB pension wealth plus Social Security wealth	96.0	98.2	98.8	98.3	2.2	0.1	2.4
Ages 56-64							
1. DC pensions	9.3	22.7	58.0	59.4	13.4	36.7	50.1
2. DB pension wealth	69.9	63.8	45.7	46.5	-6.1	-17.3	-23.4
3. DC+DB pension wealth	70.9	71.3	74.4	77.3	0.4	5.9	6.4
4. Social Security wealth	91.9	94.7	96.5	97.5	2.8	2.8	5.6
5. DC+DB Pension wealth plus Social Security wealth	98.1	97.1	97.4	97.9	-1.0	0.8	-0.3
Ages 65 and over							
1. DC pensions	2.1	1.3	32.3	35.0	-0.8	33.7	32.9
2. DB pension wealth	66.2	56.4	50.4	46.4	-9.7	-10.1	-19.8
3. DC+DB pension wealth	66.9	56.6	64.0	62.4	-10.3	5.8	-4.5
4. Social Security wealth	77.5	86.1	91.6	92.9	8.6	6.8	15.4
5. DC+DB Pension wealth plus Social Security wealth	97.3	91.3	93.9	95.5	-6.1	4.2	-1.9

Note: Households are classified by the age of the head of household.

Source: Authors' computations from the 1983, 1989, 1998, and 2001 Survey of Consumer Finances.

In comparison, private pension coverage continues to show large holes and slow improvements. The share of households between 47 and 55 with a Defined Contribution (DC) or Defined Benefit (DB) plan rose from 70% in 1983, to 73% in 1989, to 74% in 2001. Moreover, households between 56 and 64 saw larger increases in pension coverage during the same period, as their share with private pensions increased from 71% in 1983 and 1989 to 77% in 2001.[7]

Trends in retirement wealth over time underscore the importance of Social Security. For households 47 to 55, private pension wealth grew faster than Social Security wealth from 1989 to 2001, whereas the opposite was true for households between the ages of 56 and 64. However,

compared to 1983, typical Social Security wealth rose faster than typical private pension wealth for both age groups. For households between the ages of 56 and 64, the typical private pension wealth actually declined from 1989 to 2001, which is likely a result of the shrinking coverage of DB plans from 64% to 47% (**Table 4**). Moreover, median Social Security wealth ($203,600) remained substantially larger than private pension wealth ($48,000), regardless of the differences in growth rates.

To better illustrate trends for middle-class households, we have broken out the data for those in the middle three income quintiles. The importance of Social Security for middle-income Americans becomes even more apparent when examining these middle-quintile households, as shown in **Table 5**. Specifically, the importance of Social Security wealth increased between 1989 and 2001 for middle-class families nearing retirement. Social Security wealth constituted 59.3% of the total average retirement wealth for households in the middle three quintiles between the ages of 47 and 55 and 61.5% for those households between 56 and 64. This is slightly higher than for the entire population, where Social Security's share of the average retirement wealth was 56.1% and 53.8%, respectively.

Gains in Social Security wealth accounted for more than half of the total wealth gains of middle-income Americans between 1989 and 2001 (Table 5). For example, among households between the ages of 56 and 64, Social Security wealth rose by $77,600, compared to gains of $24,100 for total DB and DC wealth and a gain of $28,500 for all other forms of wealth (such as non-retirement investments and home equity). As a result, the share of average Social Security wealth out of total retirement wealth for the middle three income quintiles rose from 1989 to 2001. These data further emphasize the continued and growing importance of Social Security in preparing middle-class households for retirement.

The individual components of private pension wealth show important trends in retirement income as well. Total DB plan wealth declined for households younger than 65 (Table 4). However, while the younger group saw its DB pension plan wealth decline by 8.9%, defined benefits declined more than four times faster for the older group—at 36.2% (Table 4). Younger households simply had less DB wealth to begin with. Thus, the trends in DB wealth by age group mirror the fact that the

TABLE 4 Mean retirement wealth by age class, 1983, 1989, 1998, and 2001 (in thousands of 2001 dollars)

					Percentage change		
	1983	1989	1998	2001	1983-89	1989-2001	1983-2001
Ages 47-55							
1. DC pensions	$9.3	$18.5	$62.6	$85.8	98.0%	365.0%	820.8%
2. DB pension wealth	78.8	51.6	40.0	46.9	-34.6	-8.9	-40.5
3. DC+DB pension wealth	88.2	70.0	102.6	132.8	-20.6	89.6	50.6
4. Social Security wealth	124.4	111.9	161.9	169.6	-10.1	51.5	36.3
5. DC+DB pension wealth plus Social Security wealth	212.6	181.9	264.5	302.3	-14.4	66.2	42.2
Memo							
6. Median DC+DB pension wealth	32.9	19.9	38.0	39.0	-39.6	96.1	18.4
7. Median Social Security wealth	129.3	119.0	147.5	160.7	-7.9	35.0	24.3
8. Median DC+DB pension wealth plus Social Security wealth	177.3	157.7	209.5	215.3	-11.1	36.6	21.5
Ages 56-64							
1. DC pensions	$6.7	$16.4	$94.1	$112.9	144.5%	587.9%	1582.1%
2. DB pension wealth	110.2	104.2	83.4	66.4	-5.5	-36.2	-39.7
3. DC+DB pension wealth	116.9	120.6	177.5	179.4	3.1	48.7	53.4
4. Social Security wealth	181.0	124.9	179.7	207.1	-31.0	65.8	14.4
5. DC+DB pension wealth plus Social Security wealth	297.9	245.6	357.2	386.5	-17.6	57.4	29.7
Memo							
6. Median DC+DB pension wealth	$55.4	$54.0	$55.5	$48.0	-2.5	-11.1	-13.3
7. Median Social Security wealth	194.8	117.9	161.1	203.6	-39.4	72.7	4.6
8. Median DC+DB Pension wealth plus Social Security wealth	264.0	186.1	247.9	267.5	-29.5	43.7	1.3
Ages 65 and over							
1. DC pensions	$1.8	$1.9	$35.1	$53.6	6.6%	2652.3%	2835.1%
2. DB pension wealth	60.5	81.8	82.5	51.9	35.2	-36.6	-14.2
3. DC+DB pension wealth	62.3	83.7	117.6	105.4	34.3	25.9	69.2
4. Social Security wealth	147.3	109.0	137.0	146.6	-26.0	34.6	-0.4
5. DC+DB pension wealth plus Social Security wealth	209.6	192.7	254.6	252.1	-8.1	30.8	20.3
Memo							
6. Median DC+DB pension wealth	34.8	14.0	37.7	10.7	-59.8	-23.6	-69.3
7. Median Social Security wealth	132.6	90.5	121.3	127.0	-31.8	40.3	-4.3
8. Median DC+DB pension wealth plus Social Security wealth	177.4	145.4	185.4	170.4	-18.1	17.3	-4.0

Source: Authors' computations from the 1983, 1989, 1998, and 2001 Survey of Consumer Finances.

Note: Households are classified by the age of the head of household.

share of the population with DB plans has been shrinking for decades.

As a result of the decline in DB wealth, DC plan wealth ranks after Social Security (though as a distant second) as a source of retirement wealth. For households between the ages of 47 and 55, 28.4% of retire-

TABLE 5 Mean income and wealth, middle three income quintiles, 1989 and 2001 (in thousands of 2001 dollars)

	1989	2001	Percent change 1989-2001
Ages 47-55			
1. Mean income	$50.7	$56.6	11.6%
2. Mean net worth less DC pensions (HDWX)	183.7	185.6	1.0
3. Mean DC+DB pension wealth	72.6	112.7	55.2
4. Mean Social Security wealth	115.6	164.1	42.0
5. Mean retirement wealth	188.2	276.7	47.1
6. Mean augmented wealth	371.9	462.3	24.3
Ages 56-64			
1. Mean income	$37.4	$46.7	25.0%
2. Mean net worth less DC pensions (HDWX)	201.2	229.7	14.2
3. Mean DC+DB pension wealth	106.7	130.8	22.5
4. Mean Social Security wealth	131.0	208.6	59.2
5. Mean retirement wealth	237.8	339.3	42.7
6. Mean augmented wealth	438.9	569.1	29.7
Ages 47-64			
1. Mean income	$44.7	$52.7	18.0%
2. Mean net worth less DC pensions (HDWX)	191.6	203.0	5.9
3. Mean DC+DB pension wealth	88.0	119.8	36.1
4. Mean Social Security wealth	122.6	181.6	48.2
5. Mean retirement wealth	210.6	301.4	43.1
6. Mean augmented wealth	402.2	504.4	25.4

Note: Households are classified by the age of the head of household. Key: Retirement wealth (RW) = DC pensions + DB pension wealth + Social Security wealth (SSW). Augmented wealth = Net worth less DC (HDWX) + retirement wealth (RW)

Source: Authors' computations from the 1989 and 2001 Survey of Consumer Finances.

ment wealth came from DC plans, compared to 15.5% from DB plans. Similarly, for households between 56 and 64, DC plan wealth constituted 29.3% of retirement wealth, whereas DB wealth amounted to 17.2%. Lastly, 2001 was the first time that households age 65 and over had more DC wealth than DB wealth—$53,600 compared to $51,900, respectively (Table 4).

The wealth distribution differs by retirement wealth category, with different groups of households relying on different forms of retirement

wealth to varying degrees. As already discussed, Social Security wealth has less inequality than other forms of retirement wealth. The average Social Security wealth for households between the ages of 47 and 55 was $169,600 in 2001—5.5% more than the median Social Security wealth for this age group. Similarly, the average Social Security wealth for households between the ages of 56 and 64 equaled $207,100 in 2001, or 2.0% more than the median Social Security wealth for this age group. This reflects the fact that the distribution of Social Security wealth within each age cohort is balanced on both sides of the median level. For other forms of wealth, a greater percentage is skewed toward households with wealth many times greater than the median.

Take, for example, the case of pension wealth. Average private pension wealth for the younger group was more than three times the median private pension wealth, and the average pension wealth for households between 56 and 64 was more than three and a half times the median pension wealth (Table 4).

Other wealth plays larger role than pensions

Our research distinguishes between total wealth and its various subcategories. The two categories that are of particular importance when considering retirement preparedness are financial wealth and housing wealth. Financial wealth comprises savings including defined contribution private pensions (though not defined benefit plans). As already discussed, many households do not have private pensions, and those that do have comparatively little pension wealth. Households could theoretically achieve retirement income adequacy by saving outside of Social Security and private pensions. However, our results for retirement income adequacy have shown that, for many households, this was not the case. Moreover, many households tend to build private savings in the form of housing wealth and not in the form of financial wealth. Thus, we consider these two forms of wealth separately. This section examines wealth holdings beyond Social Security and private pensions to see where the holes are with respect to personal savings outside of Social Security and whether this has changed over time.

The vast majority of average wealth was in the form of financial wealth, regardless of age. For the entire population, financial wealth amounted on average to 78% of net worth (**Table 6**). Financial wealth

TABLE 6 Mean and median household wealth and income, 1983-2001 (in thousands of 2001 dollars)

							Percentage change		
	1983	1989	1992	1995	1998	2001	1983-89	1989-2001	1983-2001
Net worth									
1. Median	$59.3	$63.5	$54.2	$53.0	$65.9	$73.5	7.0%	35.7%	23.9%
2. Mean	231.0	264.6	257.3	237.7	293.6	380.1	14.6	47.8	64.6
3. Percent with zero or negative net worth	16.8%	19.4%	19.6%	20.1%	19.5%	17.6%			
Financial net worth									
1. Median	$12.8	$15.1	$12.7	$11.6	$19.4	$23.2	18.0%	82.9%	81.1%
2. Mean	167.6	197.5	196.1	182.4	230.7	298.5	17.8	52.2	78.1
3. Percent with zero or negative financial wealth	27.9%	29.1%	30.6%	31.2%	27.9%	25.5%			
Income									
1. Median	$36.0	$34.4	$32.9	$34.9	$36.3	$39.0	-4.6%	18.5%	8.3%
2. Mean	51.0	53.3	54.0	50.6	56.8	67.2	4.4	24.5	31.8

Note: The 1983 weights are the Full Sample 1983 Composite Weights; and the 1989 weights are the average of the SRC-Design-S1 series (X40131) and the SRC designed based weights (X40125). The 1992 calculations are based on the Designed-Base Weights (X42000), with authors' adjustments (see Wolff 1996). The 1995 weights are the Designed-Base Weights (X42000). The 1998 and 2001 weights are partially Designed-Based weights (X42001), which account for the systematic deviations from CPS estimates of homeownership by racial/ethnic groups. The 1983, 1989, 1992, and 1995 asset and liability entries are aligned to national balance sheet totals (see Wolff 2001 for details).

Source: Authors' computations from the 1983, 1989, 1992, 1995, 1998, and 2001 Surveys of Consumer Finances.

rose roughly in proportion to net worth as households aged. For households between 47 and 55, 81% of wealth was financial wealth, while for households between 56 and 64, it was on average 82%, and for households 65 and over, it represented 77% of total wealth (**Table 7** and **Table 8**).

However, financial wealth was very unequally distributed, even more so than total wealth. In 2001, median financial wealth was only about 8% of average wealth. The difference between average and median wealth reflects the fact that 25.5% of households had no or negative financial wealth in 2001 (Table 6). Financial wealth was thus also more unequally distributed than total wealth, which is a result of more broadly

TABLE 7 Household net worth and income by age class, 1983, 1989, 1998, and 2001 (in thousands of 2001 dollars)

					Percentage change[1]		
	1983	1989	1998	2001	1983-89	1989-2001	1983-2001
Ages 47-55							
1. Mean net worth	$342.6	$399.4	$418.5	$524.1	16.6%	31.2%	53.0%
2. Median net worth	89.9	140.1	113.0	127.0	55.8	-9.4	41.2
3. Percent of households with zero or negative net worth	9.5%	8.8%	11.8%	10.4%	-0.7%	1.6%	0.8%
4. Mean income	64.3	77.6	77.6	94.0	20.7	21.1	46.2
5. Median income	44.5	50.0	54.3	55.0	12.5	10.0	23.7
Ages 56-64							
1. Mean net worth	$404.0	$415.9	$581.4	$711.3	3.0%	71.0%	76.1%
2. Median net worth	133.1	125.2	134.4	156.4	-5.9	25.0	17.5
3. Percent of households with zero or negative net worth	7.2%	10.3%	7.4%	9.3%	3.1%	-1.0%	2.1%
4. Mean income	62.3	57.9	74.3	87.5	-7.0	51.1	40.6
5. Median income	38.8	35.7	39.3	44.0	-8.0	23.2	13.4
Ages 65 and over							
1. Mean net worth	$372.7	$387.8	$418.2	$557.6	4.1%	43.8%	49.6%
2. Median net worth	101.9	109.4	145.3	150.8	7.3	37.8	47.9
3. Percent of households with zero or negative net worth	7.1%	7.5%	4.4%	5.0%	0.4%	-2.5%	-2.1%
4. Mean income	36.8	37.4	40.9	46.1	1.7	23.3	25.4
5. Median income	19.3	20.6	22.8	24.0	6.6	16.7	24.4

Note: Households are classified by the age of the head of household.

1. Percentage-point change for lines showing percent of households with zero or negative net worth.

Source: Authors' computations from the 1983, 1989, 1998, and 2001 Survey of Consumer Finances.

distributed homeownership. After all, only 17.6% of households had no or negative housing wealth compared to 25.5% of households with respect to financial wealth.

The wealth picture changes as households age (Table 7). For one, wealth was substantially higher for older households, peaking just before retirement. Households between the ages of 56 and 64 had a median net worth of $156,400 in 2001, more than twice the median for the population at large (Table 6 and Table 7). The same holds true for financial wealth, although the increases with age are not quite as dramatic as

TABLE 8 Household financial wealth by age class, 1983, 1989, 1998, and 2001 (in thousands and 2001 dollars)

					Percentage change[1]		
	1983	1989	1998	2001	1983-89	1989-2001	1983-2001
Ages 47-55							
1. Mean financial wealth	$249.2	$301.7	$338.2	$424.0	21.1%	40.5%	70.1%
2. Median financial wealth	21.1	40.7	52.2	54.2	92.5	33.3	156.6
3. Percent of households with zero or negative financial wealth	23.1%	19.1%	20.0%	17.4%	-4.0%	-1.7%	-5.7%
Ages 56-64							
1. Mean financial wealth	$301.9	$312.8	$479.8	$583.6	3.6%	86.6%	93.3%
2. Median financial wealth	54.0	41.5	61.9	69.1	-23.2	66.6	27.9
3. Percent of households with zero or negative financial wealth	13.8%	18.8%	13.6%	17.4%	5.0%	-1.4%	3.6%
Ages 65 and over							
1. Mean financial wealth	$294.1	$299.5	$314.1	$429.7	1.8%	43.4%	46.1%
2. Median financial wealth	34.8	40.3	49.7	50.8	15.8	25.8	45.8
3. Percent of households with zero or negative financial wealth	13.4%	15.6%	10.5%	11.4%	2.1%	-4.2%	-2.0%

Note: Households are classified by the age of the head of household.

1. Percentage-point change for lines showing percent of households with zero or negative financial wealth.

Source: Authors' computations from the 1983, 1989, 1998, and 2001 Survey of Consumer Finances.

for net worth (Table 8). Median financial wealth for households between the ages of 56 and 64 totaled $69,100 in 2001, as compared to $54,200 for those households between ages 47 and 55.

Further, the distribution of wealth appears somewhat less unequal among older age groups than for all ages taken together. While average wealth for the population at large was 5.2 times the median wealth, the ratio of average to median wealth for each of the three older age groups was less extreme, ranging between 3.7 (for those over 65) to 4.6 among 56- to 64-year olds (Table 7). The same is true for financial wealth, where inequality is even more pronounced, but less so among older

groups. Among all age groups, average financial wealth was 12.9 times the median for financial wealth. In contrast, among the three older age groups, the ratio fell between 7.8 and 8.5 (Table 8).

Another interesting fact about the distribution of wealth among older age groups is that the share of households between 47 and 65 with no or negative net worth is 7 to 8 percentage points smaller than for the population at large. That is, as households grow older, more households are reaching the point where their assets exceed their debts in anticipation of retirement.

Although the typical household saw large percentage gains in financial wealth from 1989 to 2001 (as shown in Table 8), the levels of financial wealth remained modest. For instance, financial wealth grew by 41% for households between the ages of 47 and 55, and by 67% for households between the ages of 56 and 64 from 1989 to 2001 (Table 8). After those sizeable gains, however, the typical household's financial wealth was just $54,200 among 47- to 55-year-olds and just $69,100 among 56- to 64-year olds. The typical household cannot expect their financial wealth to stretch very far in retirement.

The typical household enjoyed little or no gain in home equity between 1989 and 2001. For households between the ages of 47 and 55, median home equity actually fell by 15% between 1989 and 2001. In contrast, home equity rose by 7% for households between the ages of 55 and 64. The slow increases—and even declines—in home equity reflect two factors at work over those 12 years. First, home prices did not rise faster than general inflation for much of the country. Second, many households, especially younger ones, increased their mortgage borrowing relative to the value of their homes (**Table 9**).

Another part of the homeownership story, though, is the rise in the homeownership rate. The share of homeowners among households between the ages of 47 and 55 grew by 1.2 percentage points from 1989 to 2001. In comparison, the homeownership rate for households 65 and older increased by 4.9 percentage points across the same period (Table 9). Among the older age group, homeownership rates reached 82.5% in 2001, making housing wealth a category as widely distributed as financial wealth (Table 8 and Table 9).

The data for 2001 show a dramatic difference in the importance of various sources of retirement income for the retirement preparedness of those nearing retirement. Social Security is the largest wealth holding

TABLE 9 Household homeownership by age class, 1983, 1989, 1998, and 2001 (in thousands of 2001 dollars)

					Percentage change[1]		
	1983	1989	1998	2001	1983-89	1989-2001	1983-2001
Ages 47-55							
1. Mean home equity	$93.4	$97.7	$80.3	$100.0	4.7%	2.3%	7.1%
2. Median home equity	63.1	58.6	48.9	50.0	-7.2	-14.6	-20.8
3. Homeownership rate (in percent)	76.2%	75.4%	74.3%	76.6%	-0.8	1.2	0.5
Ages 56-64							
1. Mean home equity	$102.0	$103.1	$101.5	$127.7	1.1%	23.8%	25.1%
2. Median home equity	76.2	65.7	65.2	70.0	-13.8	6.5	-8.1
3. Homeownership rate (in percent)	77.7	79.2	81.8	82.5	1.5	3.2	4.7
Ages 65 and over							
1. Mean home equity	$78.5	$88.3	$104.1	$127.9	12.4%	44.9%	62.9%
2. Median home equity	53.3	54.3	72.8	82.0	1.7	51.1	53.7
3. Homeownership rate (in percent)	74.3	74.1	79.3	79.0	-0.2	4.9	4.7

Note: Households are classified by the age of the head of household.

1. Percentage point change for lines showing homeownership rate.

Source: Authors' computations from the 1983, 1989, 1998, and 2001 Survey of Consumer Finances.

for typical households nearing retirement and is also the most widely held form of wealth. The typical household in the 55-to-64 age range had Social Security wealth of $203,600, housing wealth of $70,000, private pension wealth of $48,000, and financial wealth of $69,100. Ninety-eight percent of households in the 56-to-64 age range had Social Security wealth, 83% owned homes, and 77% had some form of pension coverage. The low coverage and median value of private pensions reflect the holes with respect to coverage and accumulation outside of Social Security.

Wealth inequality stays high and occasionally increases

Our discussion so far shows three important facts regarding retirement preparedness. First, Social Security's old age benefit, when converted to its expected value at retirement, fulfills its intended role as a solid,

broadly shared retirement benefit. Second, private savings, especially in the form of homeownership, is the second most important retirement savings vehicle. Third, private pensions still leave large gaps in retirement coverage, even after their value grew sharply from 1989 to 2001. An important question to consider when looking at the retirement preparedness of the typical household is the distribution of wealth gains. In particular, were those with lower incomes and wealth more or less likely than their wealthier counterparts to see improvements during a period of general wealth appreciation? (The changes in the distribution of wealth by income and wealth class are illustrated on the next few pages.)

Retirement wealth is quite unequally distributed, although that inequality is somewhat reduced by Social Security. **Table 10** ranks households by their net worth (which excludes the value of both Social Security and defined benefit pensions), with the lowest category valued at under $50,000 and the highest at $1 million and over. Households between ages 47 and 55 in the highest wealth category had, on average, 6.1 times as much wealth as those in the bottom wealth category in 2001, and households between ages 56 and 64 in the highest group had 5.5 times as much wealth as those at the bottom. **Table 11** ranks households in eight categories according to their current income, with those earning less than $25,000 in the lowest group and those earning $250,000 and above in the highest group. The highest income households between the ages of 47 and 55 had 8.0 times as much wealth as the poorest households in this age group. For age group 56 to 64, the ratio increased to 8.5.

Over time, the distribution of wealth changed, although it remained highly unequally distributed. The data show that retirement wealth became more unequally distributed for some age groups (Table 10). Among households 47 to 55, retirement wealth generally rose faster for groups with a higher net worth from 1989 to 2001, with the wealthiest households seeing the largest gains (113.1%).

The pattern of gains is less clear for households between the ages of 56 and 64. The second largest increases in retirement wealth from 1989 to 2001 actually came for households with the smallest net worth—reflecting the effect of Social Security. Not far behind were households with the most net worth. Households in the middle of the wealth distribution saw increases well below the average for their age group. Thus, while retirement wealth among the lowest wealth groups was catching

TABLE 10 Mean retirement wealth by wealth class, 1983, 1989, 1998, and 2001 (in thousands of 2001 dollars)

					Percentage change[1]		
	1983	1989	1998	2001	1983-89	1989-2001	1983-2001
Ages 47-55							
Under $50,000	$137.8	$98.9	$137.9	$124.9	-28.2%	26.3%	-9.4%
$50,000-$99,999	193.8	151.2	201.4	192.1	-22.0	27.1	-0.9
$100-000-$249,999	238.7	188.5	256.0	284.9	-21.0	51.1	19.4
$250,000-$499,999	257.8	232.2	342.5	365.8	-9.9	57.5	41.9
$500,000-$999,999	308.0	288.5	414.6	500.9	-6.3	73.6	62.7
$1,000,000 or over	415.8	359.1	646.3	765.0	-13.6	113.1	84.0
Ages 56-64							
Under $50,000	$175.3	$94.8	$163.2	$185.5	-45.9%	95.8%	5.8%
$50,000-$99,999	256.7	239.9	240.1	255.8	-6.6	6.6	-0.4
$100-000-$249,999	332.1	243.5	275.5	306.0	-26.7	25.7	-7.8
$250,000-$499,999	341.4	318.3	403.8	370.1	-6.8	16.3	8.4
$500,000-$999,999	407.5	438.4	475.8	526.9	7.6	20.2	29.3
$1,000,000 or over	491.2	449.5	1035.6	1012.0	-8.5	125.1	106.0
Ages 65 and over							
Under $50,000	$143.1	$102.6	$130.1	$118.3	-28.3%	15.3%	-17.4%
$50,000-$99,999	189.0	166.3	159.7	150.2	-12.0	-9.7	-20.5
$100-000-$249,999	226.1	173.2	227.9	205.2	-23.4	18.5	-9.3
$250,000-$499,999	260.5	240.8	315.2	292.8	-7.6	21.6	12.4
$500,000-$999,999	298.9	369.0	388.1	348.2	23.5	-5.6	16.5
$1,000,000 or over	355.7	457.7	722.0	647.0	28.7	41.4	81.9

Note: Households are classified by net worth (HDW) in 2001 dollars. Retirement wealth is defined as the sum of pension wealth, DB pension wealth, and Social Security wealth.

Source: Authors' computations from the 1983, 1989, 1998, and 2001 Survey of Consumer Finances.

up to the middle, the retirement wealth of the highest wealth groups was also moving further ahead of the typical household. Increases in the retirement wealth of the middle class fell behind even the overall average retirement gains for the period from 1989 to 2001.

Breaking the data down by income class also yields a mixed pattern of gains (Table 11). Among households between the ages of 47 and 55, those with annual incomes between $100,000 and $250,000 saw gains of 70.6%, stronger than households with either less or more income. Among households between the ages of 56 and 64, households with

TABLE 11 Mean retirement wealth by age and income class, 1983, 1989, 1998, and 2001 (in thousands of 2001 dollars)

					Percentage change[1]		
	1983	1989	1998	2001	1983-89	1989-2001	1983-2001
Ages 47-55							
Under $25,000	$83.7	$70.9	$99.3	$108.6	-15.3%	53.2%	29.7%
$25-000-$34,999	179.6	112.4	147.9	156.6	-37.4	39.2	-12.8
$35,000-$49,999	195.6	162.1	183.9	227.2	-17.1	40.2	16.2
$50-000-$74,999	242.7	191.8	273.0	265.3	-21.0	38.3	9.3
$75,000-$99,999	313.4	241.5	357.1	368.8	-23.0	52.8	17.7
$100,000-$249,999	314.1	308.1	460.1	525.5	-1.9	70.6	67.3
$250,000 or over	701.5	573.2	772.1	866.8	-18.3	51.2	23.6
Ages 56-64							
Under $25,000	$148.4	$96.6	$134.6	$163.1	-34.9%	68.9%	9.9%
$25-000-$34,999	262.3	195.6	241.8	241.4	-25.4	23.4	-8.0
$35,000-$49,999	303.8	288.5	301.8	307.1	-5.0	6.4	1.1
$50-000-$74,999	354.9	341.2	377.5	434.6	-3.9	27.4	22.5
$75,000-$99,999	399.7	355.4	497.9	415.8	-11.1	17.0	4.0
$100,000-$249,999	538.0	435.1	865.7	661.4	-19.1	52.0	22.9
$250,000 or over	744.7	738.3	1365.0	1389.0	-0.9	88.1	86.5
Ages 65 and over							
Under $25,000	$144.6	$112.7	$134.5	$127.6	-22.1%	13.3%	-11.7%
$25-000-$34,999	269.5	259.9	245.8	224.9	-3.6	-13.4	-16.5
$35,000-$49,999	287.6	243.8	331.7	317.0	-15.2	30.0	10.2
$50-000-$74,999	354.5	370.2	428.9	384.6	4.4	3.9	8.5
$75,000-$99,999	343.0	337.5	481.9	452.1	-1.6	34.0	31.8
$100,000-$249,999	357.3	564.8	695.7	636.0	58.1	12.6	78.0
$250,000 or over	644.6	965.3	1088.8	853.5	49.7	-11.6	32.4

Note: Households are classified by income in 2001 dollars. Retirement wealth is defined as the sum of pension wealth, DB pension wealth, and Social Security wealth.

Source: Authors' computations from the 1983, 1989, 1998, and 2001 Survey of Consumer Finances.

incomes of $250,000 or more saw the largest retirement wealth gains, 88.1%, from 1989 to 2001. However, the second largest wealth gains were seen among households with less than $25,000 annual income, as their retirement wealth rose by 68.9%.

Given all other data trends discussed so far, especially the sharp increases in Social Security wealth, it seems reasonable to assume that the increases in retirement wealth among households nearing retirement

were driven by two separate forces: 1) gains in Social Security wealth as a result of a strong labor market and 2) gains in financial wealth which, in turn, were due to a strong financial market performance. Given the distribution of financial wealth, it is very likely that the former was more of a driving force for lower income households, whereas the latter was more of a factor for higher income households.

Another way to look at the retirement wealth distribution by income groups is to consider how well middle-class families, those with incomes between $25,000 and $75,000, have fared from 1989 to 2001 compared to average wealth gains (Table 4). For households in the 48-to-54 age range, total retirement wealth rose 66%, but middle-class households had gains of no more than 40%. Likewise, while the average gain for the 55-to-64 age range was 57%, the middle-income groups had gains between just 6% and 27%. Higher income groups had much greater gains in retirement wealth and drove up the overall average. Thus, despite the dampening effect of Social Security on inequality of retirement wealth, the 1989 to 2001 period saw a growing gap between the retirement wealth of the middle class and higher income groups.

Strong gains in overall wealth will generally have only a modest effect on retirement income adequacy if households already well prepared for retirement see the largest gains. Unfortunately, with few exceptions, this was the case in the 1989 to 2001 period, with the largest percentage gains in retirement wealth going to the upper ends of the wealth and income distributions. As a result, there was much less improvement in retirement income adequacy over this period than would have occurred if the gains had been more equally distributed across wealth and income classes. Importantly, this holds true only for retirement wealth outside of Social Security wealth. The data show that improvements in Social Security wealth are fairly equally distributed. It is therefore fair to conclude that Social Security improvements had a more broad-based effect on retirement income adequacy than improvements in private pension wealth or other private savings, regardless of whether the changes were smaller or larger on average.

Demographic groups with least adequate retirement income see improvements due to Social Security

How have different demographic groups fared with respect to changes in wealth and retirement income adequacy? In particular, have the groups that had the biggest gaps in retirement income adequacy seen disproportionately high or low gains in retirement income adequacy? Given our discussion so far, is this a result of Social Security improvements? To answer these questions, we analyze retirement wealth and retirement income adequacy by three demographic characteristics: race, family status, and homeownership status.

Race

Despite improvements, minority households still had significantly less wealth accumulated than non-minority households as they approached retirement in 2001. For households between the ages of 47 and 55, the average retirement wealth of non-Hispanic whites was more than two and a half times larger than for minorities (African Americans or Hispanics, as seen in **Table 12**). For households age 56 to 64, the ratio of average retirement wealth is 2.2, and for households 65 and older, it is 1.7. Similar differences exist for total wealth. The ratio of average total wealth of non-Hispanics whites to the average total wealth of minorities is 3.8 for households between the ages of 47 and 55, 3.4 for households between 56 and 64, and 3.1 for households 65 and older (**Table 13**). The difference is even more pronounced for net worth, which highlights once again the equalizing effect of Social Security. In the age group 47 to 55, whites had 5.4 times the net worth of non-whites. In the older age groups, the ratio is 5.4 and 5.0, respectively.

The small gains that minorities made in closing the wealth gap came primarily from Social Security, not from private pension wealth. While median retirement wealth for white households between the ages of 56 and 64 increased by 34% from 1989 to 2001, median retirement wealth for minorities rose by 122% (Table 12). In a similar vein, total wealth for whites between the ages of 56 and 64 rose more slowly than that for minorities (Table 13). That is, the households that were less well prepared for retirement than their counterparts in 1989 saw disproportionately larger gains from 1989 to 2001.

These gains appear attributable to increases in Social Security wealth and not to gains in private pension wealth. While median retire-

TABLE 12 Retirement wealth by race/ethnicity and age class, 1983, 1989, 1998, and 2001 (in thousands of 2001 dollars)

	Mean value				Percentage change		
	1983	1989	1998	2001	1983-89	1989-2001	1983-2001
Non-Hispanic White							
Ages 47-55							
Mean DC plus DB pension wealth	$94.0	$77.1	$112.4	$156.0	-18.0%	102.5%	65.9%
Mean Social Security wealth	132.4	124.6	174.5	191.5	-5.9	53.6	44.6
Mean retirement wealth	226.5	201.7	286.9	347.5	-10.9	72.3	53.4
Median retirement wealth	188.1	165.2	239.9	251.8	-12.2	52.5	33.9
Ages 56-64							
Mean DC plus DB pension wealth	$125.7	$144.1	$195.6	$199.7	14.6%	38.6%	58.9%
Mean Social Security wealth	189.2	143.4	191.7	222.9	-24.2	55.4	17.8
Mean retirement wealth	314.9	287.5	387.3	422.6	-8.7	47.0	34.2
Median retirement wealth	279.0	226.4	272.6	302.7	-18.9	33.7	8.5
Ages 65 and over							
Mean DC plus DB pension wealth	$67.2	$84.7	$125.7	$114.0	26.1%	34.6%	69.7%
Mean Social Security wealth	152.3	120.9	144.3	152.1	-20.6	25.8	-0.2
Mean retirement wealth	219.5	205.6	270.0	266.1	-6.3	29.4	21.2
Median retirement wealth	195.4	164.2	198.0	181.9	-16.0	10.8	-6.9
African American or Hispanic							
Ages 47-55							
Mean DC plus DB pension wealth	$66.9	$45.2	$47.1	$44.4	-32.5%	-1.6%	-33.6%
Mean Social Security wealth	89.7	63.1	102.3	93.9	-29.6	48.7	4.7
Mean retirement wealth	156.6	108.3	149.4	138.3	-30.8	27.7	-11.7
Median retirement wealth	109.8	79.7	117.5	101.7	-27.4	27.5	-7.4
Ages 56-64							
Mean DC plus DB pension wealth	$79.1	$50.1	$81.7	$68.0	-36.7%	35.9%	-14.0%
Mean Social Security wealth	139.5	60.8	125.4	121.5	-56.4	99.8	-12.9
Mean retirement wealth	218.6	110.9	207.1	189.6	-49.3	71.0	-13.3
Median retirement wealth	168.7	61.1	166.8	135.4	-63.8	121.7	-19.7
Ages 65 and over							
Mean DC plus DB pension wealth	$34.5	$51.2	$65.4	$47.8	48.4%	-6.8%	38.3%
Mean Social Security wealth	111.2	48.4	84.4	111.1	-56.5	129.4	-0.1
Mean retirement wealth	145.8	99.7	149.8	158.9	-31.6	59.4	9.0
Median retirement wealth	105.5	58.4	81.4	107.9	-44.7	84.8	2.3

Households are classified by the age of the head of household. Asians and other races are excluded from the table because of small sample sizes.

Key: Retirement Wealth (RW) = DC Pension Accounts + DB Pension Wealth +Social Security Wealth.

Source: Authors' computations from the 1983, 1989, 1998, and 2001 Survey of Consumer Finances.

ment wealth for white households between the ages of 56 and 64 increased by 34% from 1989 to 2001, median retirement wealth for minorities rose by 122% (Table 12). In a similar vein, total wealth for whites between the ages of 56 and 64 rose more slowly than that for minorities (Table 13). That is, the households that were less well pre-

TABLE 13 Income and wealth by race/ethnicity and age class, 1983, 1989, 1998, and 2001 (In thousands of 2001 dollars)

	Mean value				Percentage change		
	1983	1989	1998	2001	1983-89	1989-2001	1983-2001
Non-Hispanic White							
Ages 47-55							
Mean income	$69.9	$87.8	$86.2	$107.9	25.6%	22.9%	54.3%
Mean net worth (HDW)	404.9	464.4	492.8	631.6	14.7	36.0	56.0
Mean augmented wealth	620.7	644.3	710.6	877.2	3.8	36.1	41.3
Median augmented wealth	344.9	341.3	388.3	416.1	-1.0	21.9	20.7
Ages 56-64							
Mean income	$68.7	$67.9	$81.6	$97.5	-1.3%	43.7%	41.9%
Mean net worth (HDW)	461.2	508.5	655.5	825.5	10.3	62.4	79.0
Mean augmented wealth	768.6	775.9	937.3	1116.3	0.9	43.9	45.2
Median augmented wealth	483.1	445.0	434.1	513.7	-7.9	15.4	6.3
Ages 65 and over							
Mean income	$40.0	$42.1	$43.7	$48.8	5.1%	15.9%	21.9%
Mean net worth (HDW)	418.4	460.4	463.2	622.3	10.0	35.2	48.7
Mean augmented wealth	636.0	663.7	693.6	827.7	4.3	24.7	30.1
Median augmented wealth	362.1	333.0	363.3	390.1	-8.0	17.2	7.8
African American or Hispanic							
Ages 47-55							
Mean income	$39.6	$35.2	$39.1	$46.9	-11.1%	33.2%	18.4%
Mean net worth (HDW)	74.1	91.2	93.4	118.2	23.1	29.7	59.7
Mean augmented wealth	226.5	193.7	219.9	234.1	-14.5	20.9	3.4
Median augmented wealth	160.3	103.6	153.3	128.0	-35.4	23.5	-20.2
Ages 56-64							
Mean income	$28.2	$25.6	$38.8	$38.7	-9.4%	51.2%	37.0%
Mean net worth (HDW)	74.9	110.8	221.8	153.5	47.9	38.5	104.9
Mean augmented wealth	291.2	217.6	400.7	325.8	-25.3	49.7	11.9
Median augmented wealth	220.1	89.4	226.0	194.6	-59.4	117.6	-11.6
Ages 65 and over							
Mean income	$16.1	$15.3	$22.7	$26.9	-5.1%	75.6%	66.6%
Mean net worth (HDW)	79.9	50.3	102.1	124.8	-37.1	148.2	56.1
Mean augmented wealth	224.2	150.0	248.3	274.1	-33.1	82.8	22.3
Median augmented wealth	131.3	72.5	118.6	148.3	-44.8	104.6	13.0

Households are classified by the age of the head of household. Asians and other races are excluded from the table because of small sample sizes.

Key: Augmented Wealth = Net Worth less DC (HDWX) + Retirement Wealth (RW).

Source: Authors' computations from the 1983, 1989, and 1998 Survey of Consumer Finances.

pared for retirement than their counterparts in 1989 saw disproportionately larger gains from 1989 to 2001.

These gains appear attributable to increases in Social Security wealth and not to gains in private pension wealth. While Social Security wealth for minority households between the ages of 47 and 55

grew by 49% from 1989 to 2001, private pension wealth actually *declined* by 2%. Also, Social Security wealth rose almost three times as fast as private pension wealth for minority households between the ages of 56 and 64. And again, for minority households 65 and older, private pension wealth declined by 7%, whereas Social Security wealth increased by a stunning 129% (Table 12). This is a reflection of two facts. First, almost everybody is covered by Social Security, while private pension wealth coverage is more spotty, and second, the strong labor market of the late 1990s allowed many minority households to see strong Social Security gains due to more employment and higher wages.

As a result, minority households closed some of the gap in terms of retirement income adequacy from 1989 to 2001, although they were still typically less well prepared than whites. For instance, the expected retirement income grew by 64% between 1989 and 2001 for minority households between the ages of 56 and 64 as compared to 35% for white households (see **Table 18** on p. 39). The share of minority households between the ages of 56 and 64 that could replace less than half of their pre-retirement income declined by 12 percentage points to 29% in 2001. At the same time, the share of white households that could replace less than half of their current income actually increased slightly to 19%, although it remained less than the respective share of minority households (see **Table 20** on p. 41).

Family status

The data are further broken down into levels and trends of retirement wealth and total wealth for married couples, single females, and single males. Our results show that married couples had substantially more retirement wealth and total wealth than single households, and that single-male-headed households had more wealth than single-female-headed households in 2001. Further, single women fell farther behind single men and married couples from 1989 to 2001. Unlike the trends observed with respect to race and ethnicity, single women did not catch up to their counterparts in terms of Social Security wealth, at least not single women nearing retirement. As a result, the retirement preparedness of single women has improved from 1989 to 2001, but not as much as for single men or married couples.

Total accumulated wealth still differed widely by marital status in 2001. Single women typically had less accumulated wealth than single

men, who had less than married couples. The typical single woman over the age of 46 only had between 61% and 72% of the typical retirement wealth of single men (**Table 14**). Also, the typical single woman had between 57% and 71% of the total wealth of single men in the same age groups (**Table 15**).

Single men or women need substantially more than half of what married couples have in retirement wealth to achieve a similar level of retirement income adequacy because housing, transportation, and other costs for two people are less than twice as much as the costs for one person. The data show that single men had approximately half the wealth of married couples and thus would be less prepared for their retirement expenses. Single women have far less wealth than single men and are therefore even farther behind married couples in terms of retirement income adequacy.

Social Security is an important source of retirement wealth for single women. Although single women's Social Security wealth was much lower than that of married couples and single men, their pension wealth lags even further behind. As a result, Social Security wealth accounts for 66% of the retirement wealth for single women ages 47 to 55 and 61% of those 56 to 64. In contrast, it represents just 52% to 56% of the retirement wealth of married couples and single men in those age ranges. Between 1989 and 2001, Social Security wealth improved faster than private pension wealth among women of all ages.

Single women saw the largest improvements in retirement income adequacy, at least if a replacement standard is used. The share of women between the ages of 47 and 64 who were unable to replace at least half of their pre-retirement income in retirement declined by 4.8 percentage points from 1989 to 2001, compared to a decline of 2.4 percentage points for married couples and an increase of 3.9 percentage points for single men (Table 20).

Our figures also highlight one of the shortcomings in using replacement ratios to measure retirement income adequacy. The retirement income adequacy of women improved more than that of their counterparts, not because their savings grew faster, but because of less widespread income gains. One indication of that is that the share of women that could expect to have retirement wealth less than twice the poverty line declined more slowly than for men. For women between the ages of 47 and 64, the share that could expect to have retirement

TABLE 14 Retirement wealth by family status and age class, 1983, 1989, 1998, and 2001 (in thousands of 2001 dollars)

	Mean value				Percentage change		
	1983	1989	1998	2001	1983-89	1989-2001	1983-2001
Married couple							
Ages 47-55							
Mean DC plus DB pension wealth	$99.5	$88.1	$124.1	$183.0	-11.5%	107.7%	83.8%
Mean Social Security wealth	161.1	138.0	207.7	225.0	-14.4	63.1	39.6
Mean retirementwealth	260.7	226.1	331.7	408.0	-13.3	80.5	56.5
Median retirement wealth	217.2	179.9	285.9	311.3	-17.2	73.0	43.3
Ages 56-64							
Mean DC plus DB pension wealth	$139.0	$156.7	$236.1	$236.1	12.8%	50.6%	69.9%
Mean Social Security wealth	235.7	167.2	237.2	259.3	-29.0	55.0	10.0
Mean retirement wealth	374.6	324.0	473.3	495.3	-13.5	52.9	32.2
Median retirement wealth	330.3	263.0	334.3	353.0	-20.4	34.2	6.9
Ages 65 and over							
Mean DC Plus DB Pension Wealth	$65.3	$127.7	$176.4	$162.6	95.6%	27.4%	149.1%
Mean Social Security wealth	232.6	176.4	197.2	199.3	-24.2	13.0	-14.3
Mean Retirement Wealth	297.9	304.1	373.7	361.9	2.1	19.0	21.5
Median Retirement Wealth	281.3	243.6	289.4	275.1	-13.4	12.9	-2.2
Single male							
Ages 47-55							
Mean DC Plus DB Pension Wealth	$47.7	$36.5	$91.7	$98.3	-23.3%	169.1%	106.3%
Mean Social Security Wealth	62.4	56.3	88.6	114.9	-9.7	104.0	84.2
Mean Retirement Wealth	110.1	92.9	180.2	213.3	-15.6	129.6	93.8
Median Retirement Wealth	65.9	69.4	127.5	148.7	5.2	114.4	125.7
Ages 56-64							
Mean DC Plus DB Pension Wealth	$47.9	$68.0	$121.7	$116.7	42.0%	71.7%	143.8%
Mean Social Security Wealth	89.1	64.3	102.8	148.8	-27.8	131.4	67.0
Mean Retirement Wealth	137.0	132.3	224.5	265.6	-3.4	100.7	93.9
Median Retirement Wealth	117.8	105.2	145.8	199.9	-10.6	89.9	69.7
Ages 65 and over							
Mean DC Plus DB Pension Wealth	$39.4	$58.4	$81.3	$81.6	48.2%	39.8%	107.2%
Mean Social Security Wealth	74.9	74.5	101.1	116.1	-0.5	55.8	55.0
Mean Retirement Wealth	114.3	132.9	182.4	197.7	16.3	48.8	73.0
Median Retirement Wealth	102.0	107.5	136.1	131.4	5.3	22.3	28.8
Single female							
Ages 47-55							
Mean DC plus DB pension wealth	$69.2	$32.9	$49.3	$41.1	-52.4%	24.7%	-40.7%
Mean Social Security wealth	49.3	61.0	78.9	80.1	23.8	31.4	62.7
Mean Retirement wealth	118.4	93.9	128.2	121.2	-20.7	29.1	2.3
Median retirement wealth	84.0	81.7	96.5	95.9	-2.7	17.3	14.1
Ages 56-64							
Mean DC plus DB pension wealth	$77.1	$67.3	$76.1	$68.9	-12.8%	2.4%	-10.7%
Mean Social Security wealth	72.4	61.9	89.3	106.0	-14.5	71.3	46.5
Mean Retirement wealth	149.5	129.2	165.4	174.9	-13.6	35.4	17.0
Median retirement wealth	124.6	81.2	119.8	121.4	-34.8	49.5	-2.6
Ages 65 and over							
Mean DC plus DB pension wealth	$60.1	$43.9	$61.2	$28.8	-26.9%	-34.5%	-52.1%
Mean Social Security wealth	58.4	47.0	78.9	79.7	-19.6	69.7	36.5
Mean retirement wealth	118.5	90.9	140.1	108.5	-23.3	19.4	-8.4
Median retirement wealth	98.5	53.4	97.6	94.1	-45.8	76.3	-4.5

Note: Households are classified by the age of the head of household.
Key: Retirement Wealth (RW) = DC Pension Accounts + DB Pension Wealth + Social Security Wealth.

Source: Authors' computations from the 1983, 1989, 1998, and 2001 Survey of Consumer Finances.

TABLE 15 Income and wealth by family status and age class, 1983, 1989, 1998, and 2001 (in thousands of 2001 dollars)

	Mean value				Percentage change		
	1983	1989	1998	2001	1983-89	1989-2001	1983-2001
Married couple							
Ages 47-55							
Mean income	$79.0	$98.1	$99.0	$117.9	24.3%	20.1%	49.3%
Mean net worth (HDW)	452.1	527.4	547.7	722.7	16.7	37.0	59.9
Mean augmented wealth	700.8	728.3	800.3	1007.5	3.9	38.3	43.8
Median augmented wealth	400.9	370.8	434.6	498.4	-7.5	34.4	24.3
Ages 56-64							
Mean income	$79.4	$77.0	$99.5	$117.0	-3.0%	52.0%	47.4%
Mean net worth (HDW)	534.9	568.1	800.7	968.0	6.2	70.4	81.0
Mean augmented wealth	900.1	871.1	1144.0	1308.3	-3.2	50.2	45.3
Median augmented wealth	559.6	486.2	541.8	591.6	-13.1	21.7	5.7
Ages 65 and over							
Mean income	$53.4	$57.1	$60.8	$62.9	7.0%	10.2%	17.9%
Mean net worth (HDW)	556.0	641.5	613.2	811.1	15.4	26.4	45.9
Mean augmented wealth	850.4	941.8	926.8	1088.4	10.7	15.6	28.0
Median augmented wealth	460.6	430.3	544.8	542.9	-6.6	26.2	17.9
Single male							
Ages 47-55							
Mean income	$35.1	$63.6	$51.0	$95.0	80.9%	49.4%	170.2%
Mean net worth (HDW)	170.7	258.8	268.6	306.1	51.6	18.3	79.4
Mean augmented wealth	276.8	339.7	399.7	469.5	22.7	38.2	69.6
Median augmented wealth	92.6	115.3	169.4	224.2	24.6	94.4	142.2
Ages 56-64							
Mean income	$36.1	$36.3	$57.2	$46.7	0.5%	28.5%	29.1%
Mean Net Worth (HDW)	202.7	207.4	375.9	381.5	2.3	83.9	88.2
Mean Augmented Wealth	339.7	333.6	533.5	586.9	-1.8	75.9	72.8
Median Augmented Wealth	214.8	209.7	198.9	286.2	-2.4	36.5	33.2
Ages 65 and over							
Mean Income	$27.8	$23.4	$32.9	$45.5	-15.8%	94.6%	63.8%
Mean Net Worth (HDW)	211.2	177.5	461.2	528.5	-16.0	197.8	150.3
Mean Augmented Wealth	325.5	310.4	613.8	692.8	-4.6	123.2	112.9
Median Augmented Wealth	135.5	153.1	275.1	283.4	12.9	85.2	109.1
Single female							
Ages 47-55							
Mean Income	$35.2	$27.1	$34.0	$38.1	-23.0%	40.6%	8.3%
Mean Net Worth (HDW)	116.0	102.9	149.2	219.2	-11.2	112.9	89.0
Mean Augmented Wealth	230.3	194.1	252.5	315.4	-15.7	62.4	36.9
Median Augmented Wealth	138.6	123.3	144.1	128.5	-11.0	4.2	-7.3
Ages 56-64							
Mean Income	$28.0	$26.4	$28.0	$35.7	-5.8%	35.1%	27.3%
Mean Net Worth (HDW)	141.6	183.8	200.2	241.5	29.8	31.4	70.5
Mean Augmented Wealth	289.4	301.3	336.5	381.6	4.1	26.6	31.9
Median Augmented Wealth	206.6	160.1	200.3	204.5	-22.5	27.7	-1.0
Ages 65 and over							
Mean Income	$19.3	$20.2	$20.8	$20.9	5.0%	3.5%	8.6%
Mean net worth (HDW)	181.8	172.7	190.9	185.8	-5.0	7.5	2.2
Mean augmented wealth	300.2	263.1	322.2	279.3	-12.4	6.1	-7.0
Median augmented wealth	188.3	162.3	208.0	163.0	-13.8	0.4	-13.4

Note: Households are classified by the age of the head of household.
Key: Augmented Wealth = Net Worth less DC (HDWX) + Retirement Wealth (RW)

Source: Authors' computations from the 1983, 1989, 1998, and 2001 Survey of Consumer Finances.

income less than twice the poverty line declined by 6.3 percentage points, almost identical to the 6.0 percentage point decline for married couples, and less than one-third that of single men (**Table 19**).

Homeownership

The data show that renters have much less wealth than homeowners, that Social Security accounts for a larger share of renters' retirement wealth, and that Social Security wealth rose more rapidly for renters than their other forms of wealth. As a result, renters have narrowed the gap in terms of retirement income adequacy relative to homeowners.

There is a relatively large gap in retirement wealth between homeowners and renters. In 2001, the average retirement wealth of homeowners was typically more than twice that of renters (**Table 16**), and average total wealth was approximately four times the average total wealth of renters (**Table 17**).

Social Security accounted for 77% of the retirement wealth of renters of both pre-retirement age groups, but just 54% for homeowners 47 to 55 and 51% for those 56 to 64 (Table 16).

Among the 47-to-54 age group, both the mean and median wealth of renters rose more slowly than for homeowners. On the other hand, among the 55-to-64 age group, strong growth of Social Security wealth caused both mean and median retirement wealth for renters to improve faster than for homeowners (Table 16).

Despite the fact that average wealth improved less for renters than for homeowners, renters' retirement income adequacy improved faster. The share of renters that could expect to have retirement incomes below twice the poverty line declined by 8.0 percentage points, compared to 5.5 percentage points for homeowners (Table 19). Also, the share of renters that were unable to replace at least half of their pre-retirement income dropped by 9.7 percentage points, compared to a virtually unchanged share for homeowners.

TABLE 16 Retirement wealth by homeowner status and age class, 1983, 1989, 1998, and 2001 (in thousands of 2001 dollars)

	Mean value				Percentage change		
	1983	1989	1998	2001	1983-89	1989-2001	1983-2001
Homeowners							
Ages 47-55							
Mean DC plus DB pension wealth	$99.9	$83.3	$121.2	$160.9	-16.6%	93.1%	61.0%
Mean Social Security wealth	135.8	123.8	182.4	187.6	-8.8	51.6	38.2
Mean retirement wealth	235.7	207.1	303.6	348.5	-12.1	68.3	47.9
Median retirement wealth	193.0	171.9	249.9	255.6	-10.9	48.6	32.4
Ages 56-64							
Mean DC plus DB pension wealth	$131.9	$141.9	$203.6	$207.1	7.6%	45.9%	57.0%
Mean Social Security wealth	197.2	139.5	190.6	218.4	-29.3	56.6	10.7
Mean retirement wealth	329.1	281.4	394.2	425.5	-14.5	51.2	29.3
Median retirement wealth	292.3	220.6	275.1	297.8	-24.5	35.0	1.9
Ages 65 and over							
Mean DC plus DB pension wealth	$68.3	$93.6	$135.7	$123.4	37.0%	31.8%	80.6%
Mean Social Security wealth	158.4	123.4	148.0	158.3	-22.1	28.2	-0.1
Mean retirement wealth	226.7	217.0	283.7	281.6	-4.3	29.8	24.2
Median retirement wealth	200.4	174.2	207.1	194.5	-13.1	11.6	-3.0
Renters							
Ages 47-55							
Mean DC plus DB pension wealth	$50.9	$27.9	$48.9	$31.5	-45.3%	13.2%	-38.1%
Mean Social Security wealth	88.1	74.1	102.4	104.5	-15.9	41.0	18.6
Mean retirement wealth	139.1	102.0	151.3	136.1	-26.7	33.4	-2.2
Median retirement wealth	119.0	85.3	108.9	106.4	-28.3	24.8	-10.6
Ages 56-64							
Mean DC plus DB pension wealth	$63.6	$37.6	$60.4	$44.8	-40.9%	19.1%	-29.6%
Mean Social Security wealth	123.7	68.3	131.1	152.5	-44.8	123.3	23.3
Mean retirement wealth	187.3	105.9	191.5	197.3	-43.5	86.3	5.3
Median retirement wealth	134.0	67.8	148.6	142.3	-49.4	109.8	6.2
Ages 65 and over							
Mean DC plus DB pension wealth	$44.8	$55.1	$48.4	$36.1	22.9%	-34.5%	-19.5%
Mean Social Security wealth	114.9	67.3	94.8	101.7	-41.4	51.3	-11.4
Mean retirement wealth	159.7	122.4	143.2	137.8	-23.4	12.6	-13.7
Median retirement wealth	115.6	74.6	104.1	102.7	-35.5	37.6	-11.2

Note: Households are classified by the age of the head of household.

Key: Retirement Wealth (RW) = DC Pension Accounts + DB Pension Wealth + Social Security Wealth.

Source: Authors' computations from the 1983, 1989, 1998, and 2001 Survey of Consumer Finances.

TABLE 17 Income and wealth by homeowner status and age class, 1983, 1989, 1998, and 2001 (in thousands of 2001 dollars)

	Mean value				Percentage change		
	1983	1989	1998	2001	1983-89	1989-2001	1983-2001
Homeowners							
Ages 47-55							
Mean income	$74.6	$89.2	$92.0	$111.5	19.6%	25.0%	49.5%
Mean net worth (HDW)	437.4	481.9	534.6	655.8	10.2	36.1	49.9
Mean augmented wealth	661.5	667.4	759.4	899.4	0.9	34.8	36.0
Median augmented wealth	384.9	358.7	411.0	435.1	-6.8	21.3	13.0
Ages 56-64							
Mean income	$71.2	$66.5	$85.0	$99.3	-6.6%	49.3%	39.4%
Mean net worth (HDW)	499.7	510.2	699.0	847.0	2.1	66.0	69.5
Mean augmented wealth	820.5	771.9	982.7	1138.3	-5.9	47.5	38.7
Median augmented wealth	513.5	441.6	472.1	529.3	-14.0	19.9	3.1
Ages 65 and over							
Mean income	$42.6	$42.8	$46.5	$51.5	0.5%	20.5%	21.1%
Mean net worth (HDW)	465.6	477.5	504.1	672.8	2.6	40.9	44.5
Mean augmented wealth	689.9	692.5	747.2	891.5	0.4	28.7	29.2
Median augmented wealth	392.1	357.6	403.9	429.0	-8.8	20.0	9.4
Renters							
Ages 47-55							
Mean income	$31.4	$40.8	$35.8	$31.1	29.9%	-23.9%	-1.1%
Mean net worth (HDW)	38.9	137.5	82.7	49.7	253.8	-63.9	27.9
Mean Augmented Wealth	175.9	231.2	218.3	168.6	31.4	-27.1	-4.1
Median Augmented Wealth	136.5	99.1	108.6	107.1	-27.4	8.0	-21.6
Ages 56-64							
Mean Income	$30.5	$24.4	$26.3	$30.4	-20.0%	24.6%	-0.4%
Mean Net Worth (HDW)	65.1	48.7	54.2	53.6	-25.2	10.1	-17.7
Mean augmented wealth	251.0	150.9	224.9	240.9	-39.9	59.6	-4.0
Median augmented wealth	171.7	80.2	151.3	159.7	-53.3	99.0	-7.0
Ages 65 and over							
Mean income	$19.9	$22.0	$19.4	$25.2	10.1%	15.0%	26.6%
Mean net worth (HDW)	101.9	128.8	89.4	112.6	26.4	-12.6	10.5
Mean augmented wealth	261.6	249.4	218.5	233.1	-4.7	-6.5	-10.9
Median augmented wealth	133.3	108.6	122.2	119.3	-18.5	9.8	-10.5

Note: Households are classified by the age of the head of household.

Key: Augmented Wealth = Net Worth less DC (HDWX) + Retirement Wealth (RW)

Source: Authors' computations from the 1983, 1989, 1998, and 2001 Survey of Consumer Finances.

TABLE 18 Expected mean retirement income based on wealth holdings, expected pension benefits, and expected Social Security benefits, 1989 and 2001 (in thousands of 2001 dollars)

	From financial wealth holdings only			From marketable wealth holdings only			From marketable wealth and expected retirement benefits		
			Percent change 1989-2001			Percent change 1989-2001			Percent change 1989-2001
	1989	2001		1989	2001		1989	2001	
By age									
All ages 47-64	$21.7	$34.2	57%	$28.7	$41.9	46%	$51.2	$70.6	38%
Age 47-55	21.5	29.8	38	28.3	36.7	30	51.9	67.1	29
Age 56-64	22.0	41.0	86	29.2	49.8	71	50.6	76.0	50
Age 47-49	$20.2	$22.2	10%	$26.0	$27.8	7%	$50.0	$54.6	9%
Age 50-52	23.5	31.2	33	30.9	37.9	23	55.7	70.2	26
Age 53-55	20.9	38.1	83	27.8	47.1	69	50.2	80.0	60
Age 56-58	18.9	37.0	96	25.6	45.4	77	45.0	72.5	61
Age 59-61	26.2	47.5	82	33.3	57.4	72	55.2	84.9	54
Age 62-64	20.8	38.8	86	28.6	47.3	65	51.2	70.8	38
By race/ethnicity[1]									
Non-Hispanic white									
All ages 47-64	$26.3	$41.0	56%	$34.3	$49.8	45%	$59.1	$80.8	37%
Age 47-55	25.3	36.2	43	32.9	44.3	34	58.2	78.3	35
Age 56-64	27.4	47.8	74	35.7	57.8	62	60.2	84.5	40
African American or Hispanic									
All ages 47-64	$4.0	$6.6	65%	$7.1	$9.2	30%	$22.2	$28.1	27%
Age 47-55	3.5	5.9	68	6.4	8.4	31	24.5	26.0	6
Age 56-64	4.5	8.1	78	7.8	10.8	38	19.7	32.3	64
By family status									
Married couple									
All ages 47-64	$29.9	$47.8	60%	$38.5	$57.7	50%	$67.5	$93.7	39%
Age 47-55	29.0	41.4	43	37.4	50.6	35	66.9	89.5	34
Age 56-64	31.0	56.7	83	39.8	67.8	70	68.2	99.7	46
Single male									
All ages 47-64	$11.6	$18.2	57%	$16.1	$23.4	46%	$29.3	$49.7	70%
Age 47-55	14.1	16.8	19	18.1	21.5	19	33.6	50.1	49
Age 56-64	10.0	20.7	107	14.7	26.8	82	26.6	48.9	84
Single female									
All ages 47-64	$6.1	$12.0	98%	$10.0	$16.0	59%	$20.7	$28.5	38%
Age 47-55	4.0	12.0	196	7.2	15.4	114	17.8	27.1	52
Age 56-64	8.1	12.2	50	12.9	16.9	31	23.6	30.6	30
By homeowner status									
Homeowners									
All ages 47-64	$25.9	$41.8	61%	$34.9	$51.4	47%	$61.0	$83.2	37%
Age 47-55	25.2	37.0	47	34.1	45.9	35	61.6	80.6	31
Age 56-64	26.7	48.6	82	35.7	59.3	66	60.3	87.1	44
Renters									
All ages 47-64	$7.1	$3.7	-48%	$7.0	$3.7	-47%	$17.3	$19.8	14%
Age 47-55	9.9	3.7	-63	9.7	3.7	-62	20.9	18.4	-12
Age 56-64	3.6	3.9	6	3.6	3.9	7	12.9	22.5	75

Note: Households are classified by the age of the head of household. A 7% real return on assets is assumed for financial wealth and net worth.

1. Asian and other races are excluded from the table because of small sample sizes.

Source: Authors' computations from the 1989 and 2001 Survey of Consumer Finances.

TABLE 19 Percent of households with expected retirement income less than twice the poverty line based on wealth holdings, and expected pension and Social Security benefits, 1989 and 2001 (in percentage points)

	From financial wealth holdings only			From marketable wealth holdings only			From marketable wealth and expected retirement benefits		
			Percent change 1989-2001			Percent change 1989-2001			Percent change 1989-2001
	1989	2001		1989	2001		1989	2001	
By age									
All ages 47-64	81.9	63.7	-18.2	75.3	50.3	-24.9	37.0	29.7	-7.3
Age 47-55	82.6	64.9	-17.7	75.9	52.2	-23.7	33.1	31.5	-1.6
Age 56-64	81.2	61.8	-19.4	74.6	47.5	-27.1	41.2	27.0	-14.2
Age 47-49	81.2	63.6	-17.6	78.5	56.1	-22.5	36.5	34.7	-1.8
Age 50-52	84.7	70.9	-13.8	76.6	54.8	-21.8	32.3	32.0	-0.3
Age 53-55	81.8	60.7	-21.1	73.3	44.6	-28.7	31.2	26.9	-4.2
Age 56-58	86.4	61.5	-24.9	82.1	45.3	-36.9	45.7	28.2	-17.6
Age 59-61	79.5	58.5	-21.0	72.6	42.6	-30.0	43.0	21.0	-22.0
Age 62-64	78.4	66.0	-12.5	70.1	55.9	-14.3	35.7	32.0	-3.7
By race/ethnicity[1]									
Non-Hispanic white									
All ages 47-64	79.1	58.8	-20.2	70.4	44.6	-25.8	27.9	23.2	-4.7
Age 47-55	80.6	59.4	-21.1	71.8	45.7	-26.1	24.8	23.9	-0.9
Age 56-64	77.5	58.0	-19.5	68.8	43.0	-25.8	31.2	22.1	-9.0
African American or Hispanic									
All ages 47-64	95.1	84.0	-11.1	94.9	76.2	-18.6	68.2	56.6	-11.6
Age 47-55	95.6	85.0	-10.6	95.6	76.6	-19.1	65.1	59.0	-6.0
Age 56-64	94.4	82.0	-12.4	94.0	75.5	-18.5	71.6	51.8	-19.8
By family status									
Married couple									
All ages 47-64	77.0	54.4	-22.6	70.3	39.4	-30.8	22.3	16.2	-6.0
Age 47-55	77.0	54.0	-23.1	71.3	39.1	-32.1	19.0	15.1	-3.9
Age 56-64	77.0	55.0	-22.0	69.1	39.9	-29.2	26.3	17.8	-8.4
Single male									
All ages 47-64	85.9	71.8	-14.1	82.6	59.9	-22.7	52.8	33.3	-19.5
Age 47-55	83.7	71.5	-12.2	79.8	61.0	-18.8	47.6	36.5	-11.1
Age 56-64	87.3	72.4	-14.9	84.3	58.0	-26.3	56.1	27.5	-28.5
Single female									
All ages 47-64	92.4	80.8	-11.5	84.5	70.4	-14.1	66.5	60.2	-6.3
Age 47-55	97.2	85.5	-11.6	87.0	76.2	-10.9	66.1	66.0	-0.1
Age 56-64	87.5	73.1	-14.4	82.0	61.1	-20.9	66.9	50.9	-16.0
By homeowner status									
Homeowner									
All ages 47-64	78.2	56.5	-21.7	69.7	39.8	-29.8	25.0	19.5	-5.5
Age 47-55	79.0	57.5	-21.6	70.1	41.3	-28.9	19.4	20.2	0.9
Age 56-64	77.4	55.1	-22.4	69.2	37.8	-31.3	30.6	18.3	-12.3
Renter									
All ages 47-64	94.8	92.6	-2.2	95.0	92.6	-2.4	79.0	71.0	-8.0
Age 47-55	93.8	91.6	-2.2	94.2	91.6	-2.6	76.6	72.1	-4.5
Age 56-64	96.0	94.6	-1.5	96.0	94.6	-1.5	82.1	68.9	-13.2

Note: Households are classified by the age of the head of household. A 7% real return on assets is assumed for financial wealth and net worth.

1. Asian and other races are excluded from the table because of small sample sizes.

Source: Authors' computations from the 1989 and 2001 Survey of Consumer Finances.

TABLE 20 Percent of households with expected replacement income less than one-half of current income based on wealth holdings and expected pension and Social Security benefits, 1989 and 2001 (in percentage points)

	From financial wealth holdings only			From marketable wealth holdings only			From marketable wealth and expected retirement benefits		
			Percent change 1989-2001			Percent change 1989-2001			Percent change 1989-2001
	1989	2001		1989	2001		1989	2001	
By age									
All ages 47-64	89.3	86.2	-3.1	80.3	77.9	-2.4	30.5	28.1	-2.3
Age 47-55	90.8	89.0	-1.8	83.3	82.6	-0.7	37.4	32.7	-4.6
Age 56-64	87.7	81.9	-5.8	77.1	70.7	-6.3	23.1	21.1	-2.0
Age 47-49	89.2	88.5	-0.8	83.3	83.0	-0.3	43.7	35.8	-7.9
Age 50-52	91.0	91.9	0.9	85.4	85.5	0.2	40.0	35.0	-4.9
Age 53-55	91.9	87.0	-4.9	81.5	79.2	-2.4	30.5	26.5	-4.0
Age 56-58	95.8	85.8	-10.0	86.2	74.7	-11.5	26.5	24.8	-1.6
Age 59-61	86.0	76.4	-9.6	73.5	65.9	-7.6	28.9	18.1	-10.9
Age 62-64	82.5	83.1	0.6	72.5	70.8	-1.7	15.1	19.7	4.6
By race/ethnicity[1]									
Non-Hispanic white									
All ages 47-64	87.9	83.8	-4.1	77.0	74.6	-2.4	27.3	25.4	-2.0
Age 47-55	90.2	87.4	-2.8	81.2	79.8	-1.3	36.2	29.6	-6.6
Age 56-64	85.4	78.5	-6.9	72.6	67.1	-5.6	17.8	19.2	1.3
African American or Hispanic									
All ages 47-64	95.3	96.7	1.4	91.5	92.9	1.4	42.1	40.0	-2.1
Age 47-55	94.0	96.3	2.3	91.4	95.1	3.7	42.6	45.5	2.9
Age 56-64	96.7	97.3	0.7	91.5	88.6	-2.9	41.5	29.0	-12.4
By family status									
Married couple									
All ages 47-64	88.7	84.1	-4.5	80.5	76.4	-4.1	26.5	24.1	-2.4
Age 47-55	90.3	87.4	-2.9	84.0	81.5	-2.5	34.2	27.6	-6.6
Age 56-64	86.8	79.5	-7.3	76.3	69.1	-7.2	17.4	19.3	1.8
Single male									
All ages 47-64	86.4	89.0	2.5	76.6	80.4	3.9	22.6	26.5	3.9
Age 47-55	80.3	90.5	10.2	74.4	82.0	7.6	27.0	33.8	6.9
Age 56-64	90.4	86.2	-4.1	78.0	77.7	-0.2	19.8	13.4	-6.4
Single female									
All ages 47-64	92.3	89.5	-2.8	81.4	79.8	-1.6	43.8	39.0	-4.8
Age 47-55	96.0	91.8	-4.3	84.5	85.5	0.9	49.7	43.9	-5.8
Age 56-64	88.5	85.7	-2.8	78.2	70.5	-7.7	37.9	31.1	-6.8
By Homeowner status									
Homeowner									
All ages 47-64	88.1	84.1	-4.1	76.5	73.6	-2.8	24.9	25.1	0.2
Age 47-55	90.8	87.6	-3.3	80.9	79.3	-1.6	31.7	30.9	-0.8
Age 56-64	85.4	79.0	-6.4	72.0	65.5	-6.5	18.0	16.9	-1.1
Renter									
All ages 47-64	93.5	94.9	1.4	93.5	94.9	1.4	49.8	40.1	-9.7
Age 47-55	90.8	94.3	3.5	90.8	94.3	3.5	55.3	39.3	-16.0
Age 56-64	96.9	96.2	-0.7	96.9	96.2	-0.7	42.9	41.8	-1.2

Note: Households are classified by the age of the head of household. A 7% real return on assets is assumed for financial wealth and net worth.

1. Asian and other races are excluded from the table because of small sample sizes.

Source: author's computations from the 1989 and 2001 Survey of Consumer Finances. Households are classified by the age of the head of household.

TABLE 21 Distribution of households ages 47-64 by expected replacement rates based on wealth holdings and expected pension and Social Security benefits, 1989 and 2001 (in percentage points)

	Income replacement rates, 1989				Income replacement rates, 2001			
	< 25%	< 50%	< 75%	< 100%	< 25%	< 50%	< 75%	< 100%
All ages 47-64	8.1	30.5	56.8	72.5	5.4	28.1	52.2	67.5
Age 47-55	8.6	37.4	62.8	77.7	7.0	32.7	57.5	71.6
Age 56-64	7.6	23.1	50.4	67.0	3.0	21.1	44.1	61.2
Non-Hispanic white	5.6	27.3	53.7	70.1	4.0	25.4	49.8	66.3
African American or Hispanic	8.9	42.1	54.2	68.5	6.9	40.0	52.2	65.6
Married couple	3.7	26.5	56.2	73.8	3.1	24.1	50.7	65.7
Single male	6.2	22.6	51.1	63.1	6.2	26.5	47.6	67.3
Single female	20.0	43.8	60.9	73.6	10.6	39.0	58.9	72.0
Homeowner	4.1	24.9	51.7	69.8	3.4	25.1	49.5	65.6
Renter	22.1	49.8	74.7	82.2	13.5	40.1	62.9	74.9

Note: Households are classified by the age of the head of household. A 7% real return on assets is assumed for financial wealth and net worth.

Source: Authors' computations from the 1989 and 2001 Survey of Consumer Finances.

Conclusion

The discussion over the future of Social Security has gained new momentum in 2005 with the president's insistence on dismantling the traditional Social Security program. However, a well-informed discussion over the future of this retirement insurance program cannot ignore the larger framework of all retirement savings, which includes private pensions as well as additional private savings—in particular, the wealth that comes from homeownership.

When the debate over Social Security's future is put in a larger context, some trends in retirement wealth for households over the age of 47 from 1983 to 2001 begin to emerge. Our analysis shows a number of important findings.

Private pensions leave large gaps in preparing households for retirement. In 2001, many households still had to rely on Social Security as the sole source of their retirement income. More than 20% of all households nearing retirement had no private pension plans in 2001, even after private pensions showed strong improvements from 1989 to 2001. In fact, for the typical household nearing retirement, private pension wealth was stagnating below $50,000, well below the (also stagnant) home equity of $70,000. For the typical household, Social Security promised the largest amount of effective wealth, worth $203,600. The effect of private pensions on retirement income adequacy was further reduced by the fact that private pension wealth remained very unevenly distributed. Whites, married couples, single men, and homeowners had substantially larger wealth accumulations than their respective counterparts.

Social Security offers almost universal coverage. Most of the groups with less wealth narrowed the gap in retirement income adequacy somewhat from 1989 to 2001. Almost all of these gains were due to improvements in Social Security wealth and not private pension wealth. In addition, Social Security's benefits depend solely on one's earnings record, so as the labor market improved in the 1990s during the longest economic expansion in the United States, wages grew faster and boosted the expected Social Security retirement income. As a result, estimated Social Security wealth also saw large gains. Moreover, these gains were likely to be more equally distributed than income gains or other wealth gains because Social Security redistributes wealth to lower lifetime earners. In other words, as many new job opportunities opened up for low-wage workers in the late 1990s, Social Security wealth increased, especially for those with less wealth in other forms and at greater risk of inadequate retirement income.

Still, our data include a sobering note with respect to retirement income adequacy. Assuming that a replacement ratio of 75% of pre-retirement income is a threshold for retirement income adequacy, less than half of African American households, single women, and renters are likely to reach this target.

Public policy still has a long way to go before all retirees can be assured an adequate level of retirement income. First and foremost, retirement income adequacy cannot depend solely on Social Security, despite the fact that it is an important source of retirement income adequacy and of gains in retirement wealth for vulnerable groups. Private pension coverage needs to be broadened and deepened. Second, private pension wealth and increases to that wealth over time are very unequally distributed. This is to a large extent a consequence of the transformation of the private pension system from traditional Defined Benefit plans to the newer Defined Contribution plans such as 401(k)s. Consequently, future improvements in retirement income adequacy will likely depend on ensuring more widely held private pension wealth. Specifically, federal tax expenditures to subsidize savings in 401(k) plans and other defined contribution plans should be directed at the middle- and low-income families that have the most difficulty saving. Today, those subsidies are exploited primarily by the wealthier families that need them the least.

Further, the data presented here have covered a period of sustained financial market gains. As the stock market has recently continued to

remain below the levels of a few years ago and the labor market has experienced a long period of subdued incomes, it is unclear whether the improvements in retirement income adequacy observed in 2001 have been sustained. Since the probability of declining retirement wealth in the years after early 2001 is very likely, public policy should do more to stabilize the fluctuations in retirement wealth. Against this larger backdrop, the discussion over benefit cuts for middle-class families as part of Social Security privatization seems to be misplaced, as it would hurt those middle-class families for which private pensions have not filled the supplemental income role that they were always intended to play. Lastly, because large improvements in retirement income adequacy came primarily from more Social Security wealth as a result of a tight labor market in the late 1990s, public policy should focus on increasing employment and lowering unemployment as a way not only to lift current living standards, but also the living standards of future retirees.

Appendix 1: Methodology

General methodology

The imputation of both DB pension and Social Security wealth involves a large number of steps, which are summarized below.

Pension wealth

For retirees (r) the procedure is straightforward. Let PB be the DB pension benefit currently being received by the retiree. The SCF questionnaire indicates how many pension plans each spouse is involved in and what the expected (or current) pension benefit is. The SCF questionnaire also indicates whether the pension benefits remain fixed in nominal terms over time for a particular beneficiary or are indexed for inflation. In the case of the former, the (gross) pension wealth is given by:

$$(1a) \quad DB_r = \int_0 PB(1 - m_t)e^{-\delta t}dt$$

where m_t is the mortality rate at time t conditional on age, gender, and race; the nominal discount rate, for which the (nominal) 10-year treasury bill rate is used; and the integration runs from the current year to age 109. In the latter case,

$$(1b) \quad DB_r = \int_0 PB(1 - m_t)e^{-\delta^* t}dt$$

and * is the real 10-year treasury bill rate, estimated as the current nominal rate less the Social Security Plan II-B assumption of 4.0% annual increase of the Consumer Price Index (CPI).

Among current workers (w) the procedure is somewhat more complex. The SCF provides detailed information on pension coverage among current workers, including the type of plan, the formula used to determine the benefit amount (for example, a fixed percentage of the average of the last five years' earnings), the retirement age when the benefits are effective, the likely retirement age of the worker, and vesting requirements. Information is provided not only for the current job (or jobs) of each spouse but for up to five past jobs as well. On the basis of the information provided in the SCF and on projected future earnings, future expected pension benefits (EPB_w) are then projected to the year of retirement or the first year of eligibility for the pension. Then the present value of pension wealth for current workers (w) is given by:

$$(2) \quad DB_w = \int_{LR} EPB(1 - m_t)e^{-\delta t}dt$$

where RA is the expected age of retirement and LR = A - RA is the number of years to retirement. As above, the integration runs from the expected age of retirement to age 109.[8]

Social Security wealth
For current Social Security beneficiaries (r), the procedure is again straightforward. Let SSB be the Social Security benefit currently being received by the retiree. Again, the SCF provides information for both husband and wife. Since Social Security benefits are indexed for inflation, (gross) Social Security wealth is given by:

$$(3) \qquad SSW_r = \int_0 SSB(1 - m_t)e^{-\delta^* t}dt$$

where it is assumed that the current social security rules remain in effect indefinitely.[9]

The imputation of Social Security wealth among current workers is based on the worker's projected earnings history estimated by regression equation. First, coverage is assigned based on whether the individual expects to receive Social Security benefits and on whether the individual was salaried or self-employed. Second, on the basis of the person's earnings history, the person's Average Indexed Monthly Earnings (AIME) is computed. Third, on the basis of existing rules, the person's Primary Insurance Amount (PIA) is derived from AIME. Fourth, Social Security wealth for current workers is given by

$$(4) \qquad SSW_w = \int_{LR} PIA(1 - m_t)e^{-\delta^* t}dt \, .$$

As with pension wealth, the integration runs from the expected age of retirement to age 109.[10]

Methodology in the 1983 Survey of Consumer Finances

We follow the methodology (with a few modifications indicated below for subsequent years) laid out in the 1983 Survey of Consumer Finances codebook. This allows consistency with the estimates of both pension and Social Security wealth already provided in the 1983 Survey of Consumer Finances. The computations of retirement wealth in 1983 followed the following steps:

Pension wealth
Total gross pension wealth consists of two main components.[11]

1. Gross present value of pensions from past jobs: The sum of the present value of past job pensions for household head and spouse.
2. Gross present value of pensions from current jobs: The sum of the gross present value of current job non-thrift benefits for household head and spouse. Expectations data are used for calculations.

The procedure is as follows. Pension coverage is first ascertained for current jobs. There are five possible categories:

1. Covered and vested, anticipates benefits.
2. Covered but not vested yet, anticipates benefits.
3. Covered but not vested yet, does not anticipate benefits.
4. Not covered, anticipates will be. Age when expected to be covered is ascertained.
5. Not covered, never will be.

For those who are covered by a pension plan or expect coverage, the person is asked how many distinct pensions plans he or she is covered by. For each plan, the age at which the pension benefits are expected to be given is then asked.

The actual expected annual retirement benefit is then determined using the following steps. First, the age at which the respondent will be vested in each plan is determined. Second, the age at which the respondent could retire with full benefits is ascertained. Third, the respondent was asked the nature of the formula used to determine the retirement benefits. There are six possibilities:

1. Retirement formula based on age.
2. Retirement formula based on years of service.
3. Retirement formula based on meeting both age and years of service criteria.
4. Retirement formula based on the sum or age and years of service.
5. Retirement formula based on meeting either age or years of service criteria.
6. Other combinations or formulas.

Fourth, the age at which the respondent could retire with some benefits was asked. The same six choices of the formula used were then given. Fifth, the age at which the respondent expected benefits to start was then asked.

Sixth, the expected retirement benefit was computed depending on the type of formula. This consists of three possibilities.

1. Annual pay in the final year of the job was computed. This variable, used in pension benefit calculations, is computed by projecting current pay to the year respondents say they will leave the job or retire. Wage growth is assumed to have three components: (i) occupation specific (adjusted for age) taken from the slopes in the CPS log-wage regressions (for high-income observations this is assumed to be zero); (ii) a Social Security Plan II-B assumption of 1.5% annual economy wide real wage growth; and (iii) a Social Security Plan II-B assumption of 4.0% inflation.

2. In some cases, the respondent reported expected retirement benefits. This variable is the expected dollar retirement benefits in the first year of eligibility as answered by the respondent. For some observations the dollar amount was reported directly, but for others it was computed by multiplying reported benefits as a percentage times the calculated projected final wage. The variable is given as an annual amount except when a lump sum is expected (in which case the lump sum amount is given).

3. In some cases, the respondent reported expected retirement benefits as a percentage of final pay. This variable is the expected retirement benefits in the first year of eligibility as answered by the respondent, expressed as a percent of their projected wages in their final year of work. For some observations the percent was reported directly, but for others it was computed by dividing the reported dollar benefit by the calculated projected final wage.

Seventh, on the basis of the responses above, the present value of pension benefits from each current and past plan applicable to both head and spouse was then computed. This variable is measured assuming an annual (or lump sum) pension benefit as given above, starting in the year of first benefits. Benefits for that and each succeeding year are adjusted for the probability of death and are discounted back to 1983. Sex-based Social Security mortality tables are used to compute the probabilities of death (standard for each year). These are capped at 109 years. Spousal survival benefits are assumed to be opted for 75% the time and are randomly assigned when appropriate. Spousal survival benefits are also adjusted for death probabilities. Benefits are discounted at the 1983 long-term U.S. government bond rate of 10.85%.

Eighth, pension wealth was also computed for those individuals currently receiving pension benefits from past jobs. This was based on the following responses: (1) number of years receiving benefits and (2) amount of pension benefit received in 1982. For pensions already being received, the nominal value of the pension is assumed to be fixed, and is indexed to the year it started by the actual price changes observed as measured by the CPI. The present value of pension benefits from each job is then measured assuming an annual pension benefit as given starting in the year of first benefits (or 1983). Benefits for that and each succeeding year (adjusted for probability of receipt) are discounted back to 1983. Sex-based Social Security mortality tables are used to compute the probabilities of dying each year and/or living to receive any benefits. These are capped at 109 years. Spousal survival benefits are assumed to be opted for 75% of the time and are randomly assigned when appropriate. Spouse mortality tables are also used. Benefits are discounted at the 1983 long-term U.S. government bond rate of 10.85%.

Social Security wealth

The gross present value of social security benefits is defined as the sum of the gross present value of Social Security benefits for household head and spouse. Social Security formula and current receipts were used for calculations.

Among current Social Security benefit recipients, the steps are as follows: First, the kind of Social Security benefit received was determined. The possibilities are:

1. Retirement.
2. Disability.
3. Both retirement and disability.
4. Other.

Second, the respondent was asked the number of years receiving Social Security benefits. Third, both head and spouse were asked the amount received in 1982.

Among future recipients, the steps are as follows. First, both head and spouse were asked to report the age at which they expected to receive Social Security benefits (zero if he or she does not expect benefits). Second, the age at which Social Security benefits were expected to start was asked. Third, the number of years until the start of Social Security benefits was determined. Fourth, the respondent was asked the total number of years on Social Security jobs to current date. If this was not answered, then an estimate of Social Security coverage was used, summing over current and the three possible past jobs. Fifth, an estimate of future years on Social Security jobs was computed from retirement years indicated by head and spouse.

Sixth, data on number of years on Social Security jobs, wage rates for each known job, estimates of retirement dates, and dates of starting benefits were used as inputs to Social Security formulas to compute benefits. Seventh, estimates of Social Security benefits were provided. A calculated value was based on current job wage. All persons were assumed to work continuously until their stated age of full-time retirement, and then part-time until their stated age of final retirement. All persons were assumed to retire no later than 72 or age + 1 if currently over 72. Persons not currently working and over 50 were assumed not to work again. Wages were calculated by projecting current wages by the same method used to calculate final wages. Wage growth was assumed to have three components: (1) occupation-specific (adjusted for age) taken from the slopes in the CPS log-wage spline regressions; (2) a Social Security Plan II-B assumption of 1.5% annual economy wide real wage growth; and (3) a Social Security Plan II-B assumption of 4.0% inflation. Part-time years (if currently working full-time) were assigned wages equal to one-half the projected full-time wages or the maximum amount allowable for full benefit receipt allowed by Social Security, whichever was smaller.

Eighth, the Social Security AIME (Average Indexed Monthly Earnings) was used as the basis of computing the Social Security benefit base. The

variable is the average covered Social Security earnings per month (including zeros) for all years from 1951 or age 22 (which ever is later) to age 60. These are indexed by a Social Security wage index to the year respondent is 60. Years after 60 can be substituted at nominal value. The five lowest years are dropped before an average AIME is computed. These procedures are mimicked using the SCF data on job earnings and future retirement plans to estimate an AIME value. Past and current job wages are projected back (and forward) to estimate earnings for each known year of work. These projections assume within-occupation real wage adjustments as taken from the CPS regressions (see past/current job), and economy-wide productivity growth and inflation as occurred or is projected to occur under the Social Security Plan II-B. Other years of unknown jobs are filled in with terms from the closest known job to fill in the total number of Social Security covered years. Wages are then capped at the actual or projected Social Security maximum and minimum coverage amounts. The AIME was then computed using actual or projected Social Security wage indices. The variable is currently estimated for all persons projected to have future Social Security benefits.

Ninth, the Social Security PIA (Primary Insurance Amount) on an annual basis is the basis of the calculation of Social Security benefits. It is computed from the AIME. In 1982 the monthly PIA was computed as 90% of the first $254 of AIME plus 32% of the next $1,274 plus 15% of the amount above. Calculations here take account of legislatively planned changes in this formula. The PIA is currently computed for all non-receivers projected to have future Social Security benefits.

Tenth, the present value of Social Security benefits is then computed assuming an annual benefit as given by the PIA estimate and starting in the year of first benefits (or 1983). Benefits for that and each succeeding year (adjusted for probability of receipt) are discounted back to 1983. Sex-based Social Security mortality tables are used to compute the probabilities of dying each year and/or living to receive any benefits. These are capped at 109 years. Benefits are discounted at the 1983 long-term U.S. government bond rate of 10.85%.

Eleventh, spousal benefits are also assumed at 50% of the primary benefit if a spouse is present. However, this variable will be zero if no spousal benefits are expected (such as when the individual's own benefits are larger than their spousal benefits). The age at which spousal benefits begin is estimated. Spouse mortality tables are also used for these calculations. The age at which widows benefits first could be drawn is also estimated. It is an estimate of the age at which the individual could start to receive Social Security widows benefits upon the death of their spouse. This variable will be zero if widows' benefits could never be drawn. An adjustment is also made if it appeared that the recipient's benefits had been reduced because of work. Benefits are discounted at the 1983 long-term U.S. government bond rate of 10.85%.

Modifications for years after 1983

A few changes were made in the procedures for computing both pension and Social Security wealth after 1983. First, the regression equations used to compute future earnings were modified as follows:

Human capital earnings functions are estimated by gender, race, and schooling level. In particular, the sample is divided into 16 groups by the following characteristics: (i) white and Asian versus African American and Hispanic; (ii) male and female; and (iii) less than 12 years of schooling, 12 years of schooling, 13 to 15 years of schooling, and 16 or more years. For each group, an earnings equation is estimated as follows:

$$\text{Log}(E_i) = b_0 + b_1 \text{Log}(H_i) + b_2 X_i + b_3 X_i^2 + b_4 SE_i +$$

$$\Sigma_j b_j \text{OCCUP}_{ij} + b_{10} \text{MAR}_i + b_{11} \text{AS}_I + \varepsilon_i,$$

where log is the natural logarithm; E_i is the current earnings of individual I; H_i is annual hours worked in the current year; X_i is years of experience at current age (estimated as age minus years of schooling minus 5); SE_i is a dummy variable indicating whether the person is self-employed or working for someone else, OCCUP is a set of five dummy variables indicating occupation of employment ((a) professional and managerial; (b) technical, sales, or administrative support,: (c) service; (d) craft, and (e) other blue-collar, with farming the omitted category); MAR is a dummy variable indicating whether the person is married or not married; AS is a dummy variable indicating whether the person is Asian or not (used only for regressions on the first racial category); and e is a stochastic error term. Future earnings are projected on the basis of the regression coefficients.[12]

Second, the 10-year treasury bond rate prevailing for each individual year (1989, 1998, and 2001) was used as the discount factor.

Third, we have used mortality rates by age, gender, and race instead of by age and gender alone in the computation of the present value of both pensions and social security wealth.

Fourth, for consistency with 1983, we have continued to employ the Social Security Plan II-B assumption of 1.5% annual economy wide real wage growth, even though this seems too high in comparison with the actual post-1973 growth in annual earnings (which has averaged about 0.2% per year). We have also used the Social Security Plan II-B assumption of 4.0% annual inflation, even though this seems too high.

Questions on work history

Following is a sample of questions on work history drawn from the 1989 SCF codebook that are used to calculate the earnings profile of both household head and spouse and to calculate the AIME for each:

1. Including any periods of self-employment, the military, and your current job, since you were 18, how many years have you worked full time for all or most of the year?
2. Not counting your current job, have you ever had a full-time job that lasted for three years or more?
3. I want to know about the longest such job you had. Did you work for someone else, were you self-employed, or what?
4. When did you start working at that job?
5. When did you stop working at that job?
6. Since you were 18, have there been years when you only worked part time for all or most of the year?
7. About how many years in total did you work part time for all or most of the year?
8. Thinking now of the future, when do you expect to stop working full time?
9. Do you expect to work part time after that?
10. When do you expect to stop working altogether?

Appendix 2: Literature review

A survey of the literature shows a number of themes common to a variety of studies. First, household wealth is unequally distributed, although retirement wealth, especially Social Security, tends to play an equalizing role. Second, the amount of wealth amassed by the median household approaching retirement is generally small, although the exact estimates vary. Third, a large share, if not the majority of households nearing retirement, are inadequately prepared for retirement.

Our study expands the existing literature by extending the timeframe to 2001 and by including comprehensive measures of household wealth that account for changes in financial wealth, housing wealth, pension wealth, and Social Security wealth. In addition, we use our estimates for household wealth to generate projections of how well households nearing retirement were prepared for retirement.

Household wealth

The composition of retirement wealth has changed markedly over the past 20 years, as coverage by traditional Defined Benefit plans declined and coverage by Defined Contribution plans, such as 401(k) plans, grew. Further, there is some evidence that the rise in DC plans did not displace DB plans, even after 1992. These trends raise the possibility that the adequacy of retirement wealth for households grew as total retirement wealth increased. However, the empirical evidence derived from the Survey of Consumer Finances (SCF) on this question (discussed later in this appendix) suggests that, despite a robust rise in retirement wealth for many households, the adequacy of retirement savings for the median household grew much more slowly, and even declined for many households.

Previous work has focused on just one or a few of the aspects of the adequacy of retirement income or wealth. For instance, a number of papers have presented estimates of Social Security and/or pension wealth. The seminal paper on this topic is by Martin Feldstein (1974), who introduced the concept of Social Security wealth and developed its methodology. His main interest was the aggregate level of Social Security wealth and its effect on aggregate savings and retirement patterns. In a follow-up paper, Feldstein (1976), using the Federal Reserve Board's 1962 Survey of Financial Characteristics of Consumers (SFCC), considered the effects of Social Security wealth on the overall distribution of wealth. He found that the inclusion of Social Security wealth had a major effect on lowering the overall inequality of (total) household wealth.

Edward Wolff followed up Feldstein (1976) by examining the distributional implications of both Social Security and private pension wealth. These studies include Wolff (1987), which used the 1969 Measurement of Economic and Social Performance (MESP) database and was the first paper to add estimates of private pension wealth and examine their effects on the overall distribution of wealth. The paper showed that, while Social Security wealth had a pronounced equalizing effect on the distribution of "augmented wealth" (defined as the sum of marketable wealth and retirement wealth), pension wealth had a disequalizing effect. The sum of Social Security and pension wealth has, on net, an equalizing effect on the distribution of augmented wealth. Wolff (1988) examined the implications of including both Social Security and pension wealth for estimating the life-cycle model of savings; Wolff (1992) addressed the methodological issues in estimating both Social Security and pension wealth; Wolff (1993a, 1993b) extended the estimates of Social Security and pension wealth to the 1962 SFCC and the 1983 SCF; and Chernick and Wolff (1996) examined the levels of Social Security benefits and Social Security wealth on the basis of the 1989 SCF by age group, lifetime earnings quintile, and family structure. Wolff (2002a) re-examined the distributional effects of retirement wealth based on the SCF from 1983 to 1998 and found that Social Security continued to have a mitigating distributional effect. With respect to Defined Contribution wealth, however, Wolff (2005) found that the rise in DC wealth has led to greater wealth inequality.

Work on the effects of Social Security and pension wealth on the overall distribution of wealth was also conducted by Arthur Kennickell and Annika Sunden (1999), who based their study on the 1989 and 1992 SCF. They found a net equalizing effect from the inclusion of these two forms of retirement wealth in calculating total household wealth. Interestingly, they found that there is a negative effect of both DB plan coverage and Social Security wealth on non-pension net worth, but that the effects of DC plans, such as 401(k) plans, are insignificant.

Several papers have used the Health and Retirement Survey (HRS) to measure retirement wealth. Alan Gustman, Olivia Mitchell, Andrew Samwick, and Thomas Steinmeier (1997) found that, in 1992 among households in the HRS, pensions, Social Security, and health insurance accounted for half of the wealth for those age 51 to 61. Additionally, these three components made up 60% of total wealth for those in wealth percentiles 45 to 55; and for 48% of wealth for those in wealth percentiles 90 to 95. In a follow-up study focusing on the role of pensions in forming retirement wealth, Gustman and Steinmeier (1998) used data from the HRS to examine the composition and distribution of total wealth for a group of 51- to 61-year-olds. They found that pension coverage was widespread, covering two-thirds of households and accounting for one-quarter of accumulated wealth on average. Social Security benefits accounted for another quarter of total wealth. They also found that the ratio of wealth (excluding pensions) to lifetime earnings was the same for those indi-

viduals with pensions and for those without, which they interpreted as evidence that pensions cause very limited displacement of other forms of wealth.

Several studies have documented changes in pension coverage in the United States, particularly the decline in defined benefit pension coverage among workers over the last two decades. Laurence Kotlikoff and Daniel Smith (1983), in one of the most comprehensive treatments of pension coverage, showed that the proportion of U.S. private wage-and-salary workers covered by pensions more than doubled between 1950 and 1979. David Bloom and Richard Freeman (1992), using Current Population Surveys (CPS) for 1979 and 1988, were among the first to call attention to the decline in DB pension coverage. They reported that the percentage of all workers age 25 to 64 covered by these plans fell from 63% to 57% over this period. Among male workers in this age group, the share dropped from 70% to 61%, while among females it remained constant at 53%. Among studies by William Even and David Macpherson (1994a, 1994b, 1994c, and 1994d), the 1994c study showed a particularly pronounced drop in Defined Benefit pension coverage among workers with low levels of education; the 1994d study showed a convergence in pension coverage rates among female and male workers between 1979 and 1998.

A related topic of interest is whether Defined Contribution plans have substituted for Defined Benefit plans. Leslie Papke (1999), using employer data (5,500 filings) for 1992, found that, indeed, 401(k) and other DC plans have substituted for terminated DB plans and that the offering of a DC plan raises the chance of a termination in DB coverage. On the other hand, James Poterba, Steven Venti, and David Wise (1998), using HRS data for 1993, found that the growth of 401(k) plans did not substitute for other forms of household wealth and, in fact, raised household net worth relative to what it would have been without these plans.

Several studies have looked at the overall economic status of the elderly. Michael Hurd (1994) showed that the mean income of households age 65 and over increased sharply between 1970 and 1975 but only moderately from 1975 to 1987. As a fraction of the overall mean household income, average elderly income rose from 54% in 1970 to 61% in 1975 and then to only 63% by 1987. James Smith (1997), using 1994 HRS data, found that median financial wealth among white households age 70 and over was only $15,600; for white households age 51 to 61, it was $23,400; and for black and Hispanic households in the two age groups, it was zero. Venti and Wise (1998), using HRS data for 1992, estimated a high degree of wealth dispersion among persons age 51 to 61, even after controlling for lifetime earnings.

A Department of Labor report issued in 2000 found that a large proportion of workers, especially low-wage, part-time, and minority workers, were not covered by private pensions. The coverage rate of all private-sector wage-and-salary workers was 44% in 1997. The low coverage for part-time, temporary, and low-wage workers appeared to be ascribable to the proliferation of 401(k) plans and the frequent requirement for employee contributions to such

plans. The report also found important racial differences, with 47% of white workers participating but only 27% of Hispanics. Another important distinction was union membership, with 70% of unionized workers covered by a pension plan but only 41% of non-unionized workers. Moreover, pension participation was found to be highly correlated with wages. While only 6% of workers earning less than $200 per week were involved in a pension plan, 76% of workers earning more than $1,000 per week participated.

Retirement income adequacy

Calculations of retirement income adequacy typically relate retirement consumption to pre-retirement consumption in three possible ways. First, a household may be considered adequately prepared for retirement if it can maintain a similar real level of consumption as during its working years. Usually, 75-80% of pre-retirement income is thus considered adequate since the income needs of retirees are likely to be lower than those of workers (Aon 2001). Households no longer need to save for retirement, taxes are lower, work-related expenses disappear, the family size of retirees is smaller than that of workers, and households eventually pay off their debt (McGill et al. 1996). Second, retirement income adequacy may be defined as a constant nominal level of consumption during retirement as during working years. This means that consumption needs are expected to decline during retirement over time, but in a somewhat arbitrary fashion. Third, real consumption may decline if the marginal utility of consumption is held constant and uncertainty about income and life expectancy are introduced (Engen et al. 1999). As households must consider an uncertain future, their marginal utility of certain consumption today is higher than the marginal utility of uncertain consumption in the future.

So, which one is the best income adequacy standard to use? There is little reason *a priori* to assume that retirees will require less income over time. In fact, retirement income needs may rise with age as health care needs grow. Prices for important consumption items of seniors, such as prescription drugs and long-term care, have risen. While their consumption of other items may decline, it seems entirely reasonable to think that health care cost increases will more than offset those declines. Thus, a fixed real replacement rate of 75% to 80% seems more appropriate in considerations of retirement income adequacy.

A number of studies have analyzed retirement savings adequacy, with differing results. For instance, Gustman and Steinmeier (1998) found, using the Health and Retirement Survey (HRS) that the average household could replace 60% of pre-retirement income in real terms and 86% of pre-retirement income in nominal terms. The finding for the nominal replacement ratio led the authors to conclude that households on average were adequately prepared for retirement. Engen et al. (1999) found, using the Survey of Income and Program Participation (SIPP) and the Survey of Consumer Finance (SCF),

that 40% to 50% of households fell short of what they needed for adequate retirement income. But as their calculations are based on a stochastic model, only 50% of households should be expected to meet the target retirement savings. The average replacement ratio for the median income quintile household calculated by Engen et al. (1999) is still 72%, leading the authors to conclude that households are close to being adequately prepared for retirement. In an updated study, Engen et al. (2003) found that the upswing in stock prices from 1995 to 1998 did not substantially alter their earlier findings on retirement income. This suggests that much of the increase in retirement wealth was concentrated among households who were already adequately prepared for retirement. Further, Haveman et al. (2003), using Social Security's New Beneficiary Data System (NBDS), found that retired beneficiaries had a median replacement ratio of about 80%, and that only 30% of households had a replacement ratio of less than 70% in 1982.

By contrast, several studies concluded that households were inadequately prepared for retirement. For instance, Moore and Mitchell (2000) found, using the 1992 HRS, that the median wealth household would have to save an additional 16% annually of earnings if it were to retire at age 62 and an additional 7% annually for retirement at age 65 to finance an adequate real replacement ratio. Their estimate of a savings rate of 7.3% for households wishing to retire at age 65 was three times as much as what households actually saved (Moore and Mitchell 1997). This meant that households had an average of 75% to 88%—depending on marital status—of what they needed when retiring at 65 in 1992 (Mitchell and Moore 1998). Similarly, Bernheim (1993) calculated that on average baby-boomer households were only saving at 34% of their target savings rate. Also, Gustman and Steinmeier's (1999) figures show that, based on real replacement ratios, the average household had 28% less than adequate retirement savings. Lastly, Wolff (2002b) concluded that 61% of households could not replace 75% of their pre-retirement income in retirement based on data from 1998, up from 56% of households in 1989.

One issue to consider, though, is what a shortfall relative to adequate savings means. In some cases, a shortfall will still allow households to finance most of their expected consumption. Engen et al. (1999) point out that the households used in Moore and Mitchell (1997) could still finance more than 90% of the consumption prescribed by their model with no additional savings. Similarly, Haveman et al.'s (2003) study shows that about 20% of households have a replacement ratio between 70% and 80%. That is, one-fifth of households have more than 90%, but less than 100%, of what is generally assumed for retirement income adequacy—80% of pre-retirement earnings. One of the issues not considered in these studies, though, is the fact that the gap may grow over time as families exhaust their savings outside of Social Security.

As wealth is unequally distributed, there may be a large share of households for which the shortfalls are larger. Engen et al. (1999) calculated that households in the 75th percentile—the closest income percentile for *average*

(not median) income—had 121% to 172% of what they needed for retirement. For the median household, the same ratios ranged from 47% to 124%. Thus, the median household reached only 62% of the preparedness of the average household in 1992. Moreover, Wolff (2002a) documented that the gap between average wealth and median wealth to income ratios increased further by 1998. Following the unequal distribution of wealth, a large share of households is likely to experience retirement consumption shortfalls.[13] Gustman and Steinmeier (1999) found that households in the bottom quartile had nominal replacement ratios of 50% and real replacement rates of 33%, compared to nominal replacements of 121% and real replacement rates of 81% for the top quartile. Also, Wolff (2002b) found that 16% of households could replace less than 25% of their pre-retirement income, and that 43% of households could replace less than half of their pre-retirement income during retirement in 1998.[14] Lastly, Haveman et al. (2003) found that single men were more likely be inadequately prepared than single women, who were in turn less likely than married couples to be adequately prepared for retirement. That is, there can be substantial shortfalls in retirement income adequacy for specific groups, even if the shortfalls are modest on average.

To make ends meet in retirement, when facing an income shortfall, households will have to curtail their retirement consumption. In fact, one of the distinguishing features between studies that conclude that households are adequately prepared for retirement and those that do not is the consumption pattern in retirement. For instance, Engen et al. (1999) and Gustman and Steinmeier (1999) conclude that households are adequately prepared for retirement based on the fact that real retirement consumption declines with age in their models. Similarly, Haveman et al. (2003) base their conclusions on the assumption of declining consumption in retirement, albeit at a slower pace than Gustman and Steinmeier (1999).

In the past few years, a number of studies have looked at the changes of retirement income adequacy over time. Wolff (2002b) was the first study to systematically look at changes in retirement income adequacy over time. This study found that the share of households between the ages of 47 and 64 that could replace less than 75% of their current income in retirement rose from 56.1% in 1989 to 61.2% in 1998. In comparison, in their follow-up study to Engen et al. (1999), the authors found that retirement income adequacy by their stochastic definition had changed little from 1995 to 1998 (Engen et al. 2003). Lastly, Smith (2003) found using data from the Panel Study of Income Dynamics (PSID) and the Current Population Survey (CPS) that median after-tax income replacement ratios in retirement showed an increasing trend, particularly since the early 1990s.

Endnotes

1. The calculation of DC wealth does not include projections for future accumulations. Any such attempt would, by definition, be unrealistic because not only would future earnings have to be forecast, but also employee savings, portfolio allocation, and rates of return would too. This would likely understate the actual accumulation in DC plans that households will have by the time they retire. However, it is important to keep two things in mind. First, this should have little effect on changes over time, since the same methodology is used in every year. Second, our primary measure for retirement income adequacy relates wealth to present income and not future income and thus likely understates what households will need in retirement since incomes will probably rise as well. That is, we compensate for the understatement of the savings accumulation in DC accounts by underestimating the level of retirement income that households will likely need.

2. The data sources used here are the 1983, 1989, 1998, and 2001 Survey of Consumer Finances (SCF), conducted by the Federal Reserve Board every three years. Each survey consists of a core representative sample combined with a high-income supplement. The supplement is drawn from the Internal Revenue Service's Statistics of Income data file. The advantage of the high-income supplement is that it provides a much richer sample of high-income and, therefore, potentially very wealthy families than other surveys of household wealth.

3. Although they are quite distinct financial instruments, we combine DC and DB plan under private pensions as both are employer sponsored savings initiatives with the explicit purpose to save for retirement.

4. For a discussion of how retirement income adequacy is defined in the literature see the literature review in the appendix.

5. See the appendix for a more detailed examination of replacement rates.

6. In general, incomes are skewed toward high-income earners in the SCF compared to the CPS due to oversampling of the rich and the fact that income values are not top-coded. Thus, income growth in the SCF is much faster than income growth in the CPS.

7. Because of the aging of different cohorts during our observation period, these data suggest that older cohorts had more coverage than younger cohorts. As baby boomers are moving into the 56- to 64-year-old category, they may bump up coverage for this age group. If this is correct, the figures also suggest that coverage for those between 56 and 64 will eventually stabilize, similar to the trend in coverage ratios for households between 47 and 55.

8. Technically speaking, the mortality rate m_t associated with the year of retirement is the probability of surviving from the current age to the age of retirement.

9. Separate imputations are performed for husband and wife and an adjustment in the Social Security benefit is made for the surviving spouse.

10. As with pension wealth, the mortality rate m_t associated with the year of retirement is the probability of surviving from the current age to the age of retirement.

11. A third, though minor component is also provided: pensions from other non-specified sources.

12. This implicitly assumes that deviations from the regression line in the current year are a result of a transitory component to current income only. This procedure follows the conventions of the 1983 SCF codebook.

13. Shortfalls in retirement savings vary with household demographics. Mitchell et al. (2000) and Engen et al. (1999) found that black and Hispanic married households experienced a larger shortfall in retirement income adequacy than white households, and that less education resulted in a worsening of retirement income adequacy. Mitchell and Moore (1998) also found that single households were less adequately prepared than married ones.

14. In comparing these figures with findings of other studies, e.g. Haveman et al. (2003), it needs to be kept in mind that, for instance, Haveman et al. (2003) only considered Social Security earnings for their replacement ratio calculations, thus understating the level of household income. Also, Wolff (2002) considered wealth of households nearing retirement, whereas Haveman et al. (2003) considered wealth for those who were retired. Obviously households can increase their savings before entering retirement and occasionally while in retirement.

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