



Are Baby Boomers Saving Enough for Their Retirement?

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A crosscutting team of Urban Institute experts in Social Security, labor markets, savings behavior, tax and budget policy, and micro-simulation modeling ponder the aging of American society.

The aging of America raises many questions about what's in store for future and current retirees and whether society can sustain current systems that support the retired population. Who will prosper? Who won't? Many good things are happening too, like longer life and better health. Although much of the baby boom generation will be better off than those retiring today, many face uncertain prospects. Especially vulnerable are divorced women, single mothers, never-married men, high school dropouts, and lower-income African-Americans and Hispanics. Even Social Security—which tends to equalize the distribution of retirement income by paying low-income people more than they put in and wealthier contributors less—may not make them financially secure.

Uncertainty about whether workers today are saving enough for retirement further complicates the outlook. New trends in employment, employer-sponsored pensions, and health insurance influence retirement decisions and financial security at older ages. And, the sheer number of reform proposals, such as personal retirement accounts to augment traditional Social Security or changes in the Medicare eligibility age, makes solid analyses imperative.

Urban Institute researchers assess how current retirement policies, demographic trends, and private sector practices influence older Americans' security and decision-making. Numerous studies and reports provide objective, nonpartisan guidance for policymakers.

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Abstract

This paper estimates the ratio of post- to pre-retirement consumption to explore how well boomers are prepared for retirement. I show that some of the poorest households are best prepared because they can maintain consumption by relying almost solely on Social Security while many of the most affluent households are poorly prepared because they will experience a decline in consumption upon retiring. Nonetheless, affluent households will be able to maintain a consumption level many times that of poor households. The paper discusses whether equalization of pre- and post-retirement consumption provides a useful adequacy yardstick at all income levels.

Introduction

There is a widespread belief that self-indulgent baby boomers are spending themselves into an impoverished retirement. Like all caricatures, this one contains an element of truth. And, like all caricatures, it greatly oversimplifies the problem.

You cannot decide whether people are saving enough for retirement unless you know how much they will need once they stop working. That seems pretty obvious, but when one attempts to dissect the meaning of “need,” the complexities multiply like a virus. A major problem is that need depends very much on individual tastes. If you are satisfied to tend your garden, read books, and do your own cooking and home repairs, not much is required in retirement. If you like fine wines and an annual trip to Paris, you’d better save like a miser. Data that will be discussed later suggest that many baby boomers do not have France in mind. But many—perhaps most—are prudently preparing for retirement as they make their way toward their “golden years.”

Because it is so common to believe that baby boomers are profligate, a 2003 Congressional Budget Office (CBO) study came as a big surprise. It concluded that baby boomers save about the same amount as their parents and will have about the same ratio of wealth to income on the eve of retirement. At first sight, the conclusion seems astonishing, given the average saving rate has plummeted over the past three decades. According to CBO, one possible explanation of this paradox is that working people are saving about as much as they ever

did, but retired people are on a consumption binge. That view is not without controversy, but, if true, it suggests that today's retired are living pretty well on average. What is more, the standard measure of saving does not include capital gains. Although capital gains do not help fund new physical investment for the nation, they do add to a household's purchasing power. Saving measures including capital gains show no discernable trend over the past 50 years.

The Risks of Retirement

Even if baby boomers are saving as much as their parents, it is reasonable to ask whether they should be saving more. There are, in fact, many reasons for believing that baby boomers should be more cautious than their parents. First, people are living longer. In 1970, a 60-year-old white male could expect to live 16.2 more years. Today, that has risen to over 20 years. If baby boomers want to retire at the same age as their parents, they will have to put away more resources to maintain their lifestyle through a longer retirement. Of course, if they just aim to spend the same number of years in retirement, they can save less of their income because they will be working longer.

Baby boomers will very likely do some of both and will use some of their expected additional years to retire longer and some of them to work longer.¹ The rate at which older people participate in the labor force has been rising for the past 20 years or so, but not enough to shorten the number of years spent in retirement.

Another reason for saving more is that life in retirement has become much riskier, and one's saving plans may differ depending on one's tolerance for risk. The most important risk is related to soaring medical costs. Health care spending grew at an annual rate of over 5 percent a year for the past 15 years after adjusting for inflation. That is far more than the growth in household incomes. Despite considerable support from Medicare and Medicaid, out-of-pocket medical costs for the elderly, which are already substantial, can be expected to continue growing at about the same rate as total health care spending (Johnson and Penner 2004).

¹ This is implied by Bloom, Canning, and Moore (2007).

Retirement planning is complicated further by the fact that medical costs vary hugely from household to household and it is particularly difficult to predict the need for long-term care for oneself and one's spouse. One has to decide whether to prepare for the worst and save a lot or be willing to take the risk of being impoverished and throwing oneself into Medicaid.

A wise baby boomer must also consider the possibility that tax laws and government programs for the elderly will change significantly during or just before his or her retirement. Social Security, Medicare, and Medicaid costs are growing far more rapidly than the economy and tax revenues. That is partly because of increases in expected life, partly because of the need to support the baby boomer bulge in retirement, and, most important, partly because of soaring health costs.

Reform is inevitable, but at this point it is unclear when that might occur and to what extent benefits or tax law will be altered. Although most proposals for reforming benefits hold harmless people who are age 55 and over, that promise might evaporate if Congress allows the fiscal situation to cause a financial crisis and very radical reforms are necessary to calm international financial markets.

As far as those near or in retirement are eventually protected against benefit cutbacks, tax increases become more likely. A new value-added tax is often discussed as an option for financing Medicare growth. Such a tax would be much more painful for retirees than an income or payroll tax increase.

The gradual change in the private sector from defined benefit to defined contribution pension plans also alters retirement risks. Most see defined contribution plans as more risky, but it would be foolish to argue that defined benefit plans are without risk. Ask an airline pilot.

However, more modest defined benefit pensions are guaranteed against firm bankruptcies by the Pension Benefit Guaranty Corporation (PBGC). The PBGC does not insure against unanticipated inflation, and inflation is a major risk for those heavily dependent on non-indexed pensions.

Defined contribution plans, such as 401(k)s, face the risk that they will earn less of a return than expected, although they make it easier to hedge against inflation than many DB plans do. In the past, long-run equity investments of 20 years or more have produced remarkably good returns with a modicum of risk, but there is always the chance that something very bad will happen just before retirement. This risk can be mitigated by investing in life-cycle funds, which gradually move from equities to bonds as one approaches retirement, but then one must accept a considerably lower expected rate of return.

At retirement, it becomes necessary to decide on a spending plan that guards against living much longer than expected. That risk can be avoided by buying an annuity, but that is costly, because annuity markets are far from perfect. Companies selling annuities have to protect themselves from the fact that annuities look particularly attractive to unusually healthy people. Consequently, the price of an annuity is not actuarially fair for an average person.

Some protection from risks during retirement comes from owning a house with a mortgage that has been completely paid off. Economists differ on whether to include housing wealth when considering whether a household is adequately prepared for retirement. After all, everyone has to live somewhere. One might save by moving to more modest housing or to a cheaper region after retirement, but few people do. However, that option exists if faced with unexpected expenses, and selling a home may provide particularly valuable financial resources if one or both spouses are forced to move into a nursing home and no longer need their previous

residence. And, one can draw on home equity by buying a reverse mortgage or using home equity loans.

Beneficial events can also be considerably uncertain. Quite a few baby boomers will receive inheritances, and some will come late in life—perhaps after retirement—because increases in expected life increase the probability that at least one parent will live to a very old age.² The Health and Retirement Survey suggests that 20 percent of pre-baby boomers born between 1931 and 1941 have received inheritances as of 2006. On average, the inheritance is received at age 60.³ The median inheritance is almost \$38,000, and the mean is almost \$121,000. The mean is so much greater than the median because of some very large inheritances received mostly by very affluent heirs. Indeed, both the probability of receiving an inheritance and the median size of the inheritance tend to rise monotonically with income and asset holdings. Although inheritances, therefore, tend to make the very rich even richer, they are not totally irrelevant to those at the bottom of the distribution. People with \$40,000 or less in assets have an 11 percent chance of receiving a bequest, and the median size is almost \$19,000.

Typical retirement planning software programs are not very good at handling risk. For example, one generally has to enter how long one expects to live as though one knows with certainty. One can get some sense of the risks of living longer than expected by inputting different ages, but inputting a range for a variety of variables becomes cumbersome when dealing with a large number of uncertainties—expected life, rates of return, earnings, and so on.

² Gokhale and Kotlikoff (2000) argue that baby-boomer inheritances will be limited relative to total wealth simply because there are so many baby boomers relative to the number of parents. Nothing in my data contradicts that view. Inheritances can still be substantial absolutely, even though they are smaller relatively.

³ The average age is weighted by the size of the inheritance. An unweighted average would probably be younger because larger inheritances tend to be received at later ages.

Savings Targets

If the future were certain, economists generally argue that people should aim to have enough assets to maintain their pre-retirement level of consumption. Again, this raises the question of how much retirees really need to consume. Skinner (2007) refers to savings targets derived from ESPlanner, a commercial program for retirement planning, developed by Jagadeesh Gokhale of the Cato Institute and Lawrence Kotlikoff of Boston University. They consider numerous variables that are important in determining what a retiree might “need.”

For example, a renter needs more than a homeowner who has paid off his or her mortgage. All else equal, people with lower incomes are likely to have a higher portion of their needs financed by Social Security and so have to accumulate fewer assets. Someone having or expecting a bequest needs to save less. A couple that had children and was paying college expenses enjoyed less consumption for their own needs while working and so needs less to maintain their lifestyle in retirement. Someone widowed shortly before retirement needs less than a married couple. One can go on and on citing different circumstances that lead to very different retirement needs. In a most paradoxical finding, a person who saves more while working can get away with having fewer assets on the eve of retirement, because he or she is used to living frugally.

Because of the great diversity in needs, it is not easy to answer the question, “Are people saving enough?” Clearly, simple rules of thumb can be very misleading. For example, it is often stated that a person’s retirement income should be 70 to 80 percent of his or her income just before retirement. That is an estimate of what is required to maintain the same lifestyle, taking note of the fact that one is relieved of work expenses and the need to save for retirement. For

most people, however, it may overstate true needs. Lawrence Kotlikoff (2006) has pointed out that financial institutions probably overstate needs because they would rather manage larger as opposed to smaller retirement accounts.

Just as one observes a great diversity of needs, one sees great diversity in the saving behavior of individuals. One would like to think that those who are saving more are also the ones who need more, but the world is unlikely to be that rational. For example, one would think that a household that has substantial rights to Social Security benefits and a defined benefit pension plan would accumulate less other wealth than a household with lower Social Security and defined benefit income. Bernheim, Skinner, and Weinberg (2001) show that this is not true.

In discussing the adequacy of retirement saving, it is very important to recognize that people can adjust if they approach retirement with less than they now expect to need. Working powerfully affects well-being once retired. One has to finance a shorter time in retirement, and one has a longer time to save out of earnings. Butrica, Smith, and Steuerle (2006) have estimated that each year of additional work raises annual income during retirement by 9 percent. Working an extra five years can raise income 56 percent. The impact tends to be highest at the lower end of the income distribution.

All the above analysis assumes that people can choose when they retire. That is true of most people, but many are forced into retirement earlier than expected because their firm downsizes or because they suffer a debilitating illness. The Health and Retirement Survey (HRS) suggests that 37 percent of respondents are forced to retire (Bender 2004). The living standards of such households can decline substantially.

The left panel of table 1 shows savings targets for specific cases computed using ESPlanner. All figures are shown as 2004 dollars. The calculations are based on an assumption regarding the typical Social Security benefits received by the households described in table 1, but Social Security wealth is not included in the wealth targets and those cases represented in the table do not have defined benefit pension plans. It is assumed that retirement occurs at age 65. An appendix table shows targets for a larger variety of cases, including one case with a defined benefit plan. Skinner was interested in the savings targets for academics, so the incomes used may seem a bit high. In the following section, savings of people with similar incomes will be compared with the ESPlanner targets.

The Data

The data on actual wealth holdings will be examined in two stages. In the first, nonhousing wealth will be compared with savings targets derived from ESPlanner for specific income groups. In the second stage, wealth holdings of the entire population will be described with the population divided into income quartiles.

Wealth of Households at Specific Income Levels

The data on actual wealth come from the Survey of Consumer Finances (SCF) taken in 2004. The respondents are baby boomers age 51 to 55 at the time. The sample consists of households with incomes within \$10,000 of the \$63,716 and \$127,433 income groups described by Skinner and within \$20,000 of the \$191,149 group. The right side of table 1 shows nonhousing asset holdings for the 25th, 50th, and 75th percentile of wealth holdings for each

income group. Nonhousing assets include savings in defined contribution plans such as 401(k)s but not the present value of defined benefit plans or Social Security benefits.

There are obvious problems in comparing the actual wealth holdings derived from the SCF sample with the savings targets on the left side of table 1. The targets are computed using numerous detailed assumptions about household characteristics, whereas the actual data come from a conglomeration of households—some of which have characteristics similar to the households for whom targets are computed, but most of which do not. The detailed assumptions used to compute the targets are described in the note to the appendix table. It would be nice to be able to extract individual observations from the SCF sample that have characteristics exactly matching those used to compute the targets, but that is impossible because the characteristics are so detailed. They involve assumptions regarding the exact terms of mortgages, tax rates, the age and college expenses of children, and so on.

Table 1. Savings Targets and Actual Nonhousing Wealth at Age 51–55 for Specified Income Levels, 2004

Household income	Household type	Savings Targets for Homeowners		Actual Nonhousing Wealth, 2004 by Income Percentile		
		Age 50	Age 55	25th	50th	75th
\$63,716	Single	\$80,582	\$127,433	\$38,350	\$87,920	\$288,380
	Married, two children	\$78,708	\$92,763			
\$127,433	Single	\$469,439	\$596,872	\$105,500	\$266,600	\$572,500
	Married, two children	\$373,865	\$474,124			
\$191,149	Single	\$1,054,129	\$1,297,750	\$155,200	\$391,850	\$681,600
	Married, two children	\$272,668	\$389,794			

Note: Savings targets are from Skinner (2007), adjusted from 2006 to 2004 dollars by the change in the consumer price index, and refer to homeowners. Actual household wealth is from the 2004 Survey of Consumer Finances, for households with a head or spouse age 51–55.

Despite the conceptual problems involved in comparing actual wealth holdings with targets, some useful insights can be gleaned from table 1. A single, 50-year-old homeowner in the \$63,716 income group should have nonhousing wealth of \$80,582 according to ESPlanner, or 1.3 times his or her income level. By the time the person reaches 55, wealth should have grown to \$127,433, or 2 times the income level. A married household with the same income, a house, and two children who went to college should have \$78,708 at age 50 (1.2 times income) and \$92,763 at age 55 (1.5 times income). The households in the SCF sample close to \$63,716 of income actually have \$38,350 in the 25th percentile of wealth holding, \$87,920 at the median, and \$288,380 at the 75th percentile.

The wealth holding of the 25th percentile is considerably below the targets for the single or married household with \$63,716 of income. Although a few households in the 25th percentile and below may will live a comfortable life in retirement because they have a defined benefit plan or because they have other characteristics that significantly reduce needs, it is probably safe to say that almost all with savings this low are woefully unprepared for retirement. They will either have to radically increase their saving between age 55 and retirement, or plan to work longer, or adjust to a very frugal lifestyle in their old age.

At the other extreme, wealth in the 75th percentile is far above the targets in table 1. Those in this percentile and above would seem extremely well prepared for retirement. But again, there will be exceptions. Some will be unlucky with their health, their investments, or other factors and face a substantial decline in living standards upon retirement.

Households in the 50th percentile of wealth holdings have \$87,920. That wealth is between the lower targets for the married couple and higher targets for the single households

shown in table 1 for ages 50 and 55. . Although the 50th percentile households seem pretty well prepared for retirement if they have the characteristics of the households shown in the table, a very large number around the 50th percentile will have especially high or low needs that either make their wealth holdings inadequate or allow their assets to finance a very comfortable lifestyle upon retirement. For example, people who do not own houses, who did not have children in college, or who experience inordinate health costs will need more than the wealth levels shown for the 50th percentile, while those who are in especially good health, who have a defined benefit plan, or who have experienced a frugal lifestyle because of a high saving rate will be on a path toward a potentially pleasant retirement.

Oddly enough, the situation deteriorates as we consider incomes above \$63,716. At \$127,433 of income, the 50th percentile wealth holding is below all the specified savings targets. Wealth in the 75 percentile is above the targets for couples, but by a smaller margin than for the \$63,716 couples. It is virtually identical to the age 55 target for the single household.

At the \$191,149 income level, the 50th percentile wealth is more than adequate to meet the target for the married couple with two children but far below the amount required by the single household. For this income level, even the wealth in the 75th percentile is below the targets shown for single households. At the other end of the spectrum, the wealth holding of the 25th percentile for the \$127,433 and \$191,149 income levels is less than one year's income. That is so low that these households and those below the 25th percentile are far below the saving path that would lead to a comfortable retirement except in very special circumstances.

It should be re-emphasized that the wealth holdings shown in table 1 do not include housing wealth. Mid-percentile housing wealth is very important relative to total wealth. It equals about \$90,000 for the \$63,716 household, \$150,000 for those at \$127,433, and \$345,000

for those at \$191,149. It was argued above that retirees may find it convenient to draw down a portion of their home equity in retirement. For many, it can mean the difference between a frugal and a more comfortable retirement. In what follows, the analysis will look at housing, defined benefit, and Social Security wealth in more detail.

Wealth Holdings of the Entire Population

Table 2 and figure 1 show wealth holdings for the whole population. The first column in table 2 distributes households age 51 to 55 to different quartiles according to their income levels. The rows show nonhousing and housing wealth for the 25th, 50th, and 75th percentile of wealth holdings in each quartile. Again, the wealth holdings include the value of defined contribution accounts but not the present value of defined benefit pensions or Social Security benefits. When the entire population is considered, several points leap out of table 2. First, asset holdings vary widely within each income quartile. In all income quartiles, nonhousing wealth in the 75th

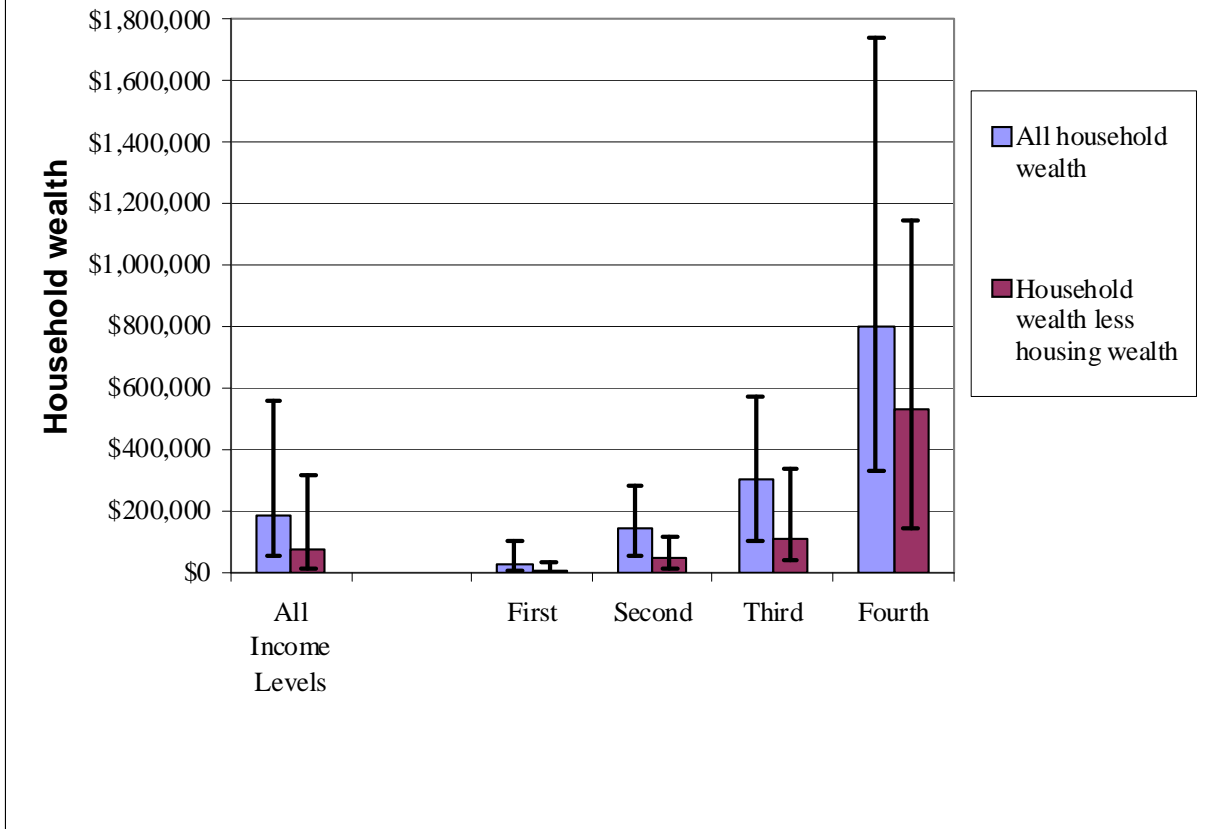
Table 2. Household Wealth at Age 51–55 by Income Quartile, 2004

	Nonhousing Wealth by Percentile			Total Wealth (Including Housing) by Percentile		
	25th	50th	75th	25th	50th	75th
All	\$12,650	\$71,230	\$318,100	\$52,330	\$186,500	\$557,230
Income quartile						
First	\$900	\$5,940	\$30,200	\$4,320	\$28,500	\$98,400
Median income \$17,457						
Second	\$14,250	\$45,200	\$113,500	\$50,930	\$143,800	\$277,300
Median income \$46,209						
Third	\$38,990	\$110,940	\$334,900	\$103,500	\$299,800	\$568,520
Median income \$82,150						
Fourth	\$141,900	\$528,600	\$1,147,200	\$331,400	\$799,000	\$1,740,300
Median income \$164,300						

Source: Author's estimates from the 2004 Survey of Consumer Finances, for households with a head or spouse age 51 to 55.

Note: Wealth estimates excludes the value of the home and the expected value of future income from Social Security and defined benefit pensions.

Figure 1. 25th, 50th, and 75th percentile household wealth by income quartiles, 2004 SCF, households where head or spouse is between ages 51 and 55



percentile is eight or more times the wealth in the 25th percentile. Second, including housing wealth is extremely important in raising total wealth in all percentiles and quartiles. Third, in the first and second quartiles, 50th percentile wealth holdings excluding housing are lower than the median income for the quartile. Fourth, only in the third and fourth quartiles is the nonhousing wealth holding of the 75th percentile more than three times the median income of the quartile. In the fourth quartile, median nonhousing wealth is also more than three times the median income of the quartile.

The bottom half of the income distribution. As noted previously, the wealth data in table 2 do not include the present value of Social Security benefits. When lower income groups are considered, the value of Social Security dominates other holdings of wealth for almost all households. Gordon Mermin and Desmond Toohey (forthcoming) have recently imputed the present value of Social Security benefits and defined benefit pensions for households in the SCF. Using their techniques, I have made similar imputations for the sample shown in table 2. The results are shown in table 3, along with the main assumptions underlying the imputations. In the lowest income quartile, the 50th percentile Social Security wealth is \$77,441 for those between age 51 and 55, 4.4 times the median income of \$17,457. For most individual cases in that

Table 3. Defined Benefit and Social Security Wealth for those Aged 51-55 by Income Quartile, 2004

	Defined Benefit Wealth by Percentile			Social Security Wealth by Percentile		
	25th	50th	75th	25th	50th	75th
All	\$0	\$0	\$89,050	\$89,835	\$158,047	\$221,752
Income Quartile						
First Median inc. \$17,457	\$0	\$0	\$0	\$49,014	\$77,441	\$119,189
Second Median inc. \$46,209	\$0	\$0	\$60,465	\$82,917	\$131,845	\$185,774
Third Median inc. \$82,150	\$0	\$46,550	\$207,112	\$141,634	\$185,388	\$236,045
Fourth Median inc. \$164,300	\$0	\$0	\$151,523	\$166,419	\$224,358	\$281,954

Source: Urban Institute calculations from Survey of Consumer Finances and DYNASIM3.

Note: Social Security and defined-benefit pension wealth are the expected present value of future benefits. Social Security benefits are based on earnings histories from the Urban Institute's DYNASIM3 that were statistically matched to the 2004 SCF. Pension benefits are based on what respondents expected to receive or were already receiving at interview. Expected present value calculations use mortality assumptions from the Social Security Board of Trustees and a 3 percent real discount rate.

quartile, that should be sufficient to allow the retiree to maintain pre-retirement consumption levels. Many at the very bottom will also receive welfare payments, such as food stamps and housing assistance.

Looking at Social Security another way, a one-earner, married couple earning the wage indexed equivalent of \$17,457 over a working life and entitled to a spousal benefit would have a before-tax replacement rate of about 86 percent, or more than enough to replace consumption levels while working. If members of the couple each earned half of the \$17,457, the before-tax replacement rate would still be over 80 percent. A single person with the same lifetime income would only have a before-tax replacement rate slightly below 60 percent; but, with numerous tax concessions given the elderly by the federal, state, and local governments, such a person may come very close to sustaining consumption after retirement.

Social Security wealth is still highly significant in the second income quartile, with the 50th percentile totaling almost three times the median income. If a one-earner couple earned the wage-indexed equivalent of \$46,209 over a working life and is entitled to a spousal benefit, the before-tax Social Security benefit would replace about 60 percent of the before-tax wage assuming retirement at the full retirement age of 67. Given the favorable tax treatment of Social Security and the likelihood of being in a lower tax bracket after retirement, the after-tax replacement rate will be somewhat higher. If a couple has the 50th percentile nonhousing wealth for this quartile, it will own \$45,200 in assets. If the couple saves marginally more than 5 percent of its before-tax income and earns a real return of 3 percent on its assets, the couple's nest egg will approximately double in real terms by retirement at 67. If after retirement the couple spends only its 3 percent real return, thus maintaining its principal, its before-tax replacement rate will near 70 percent. Its after-tax replacement rate should be in the 70–80 percent range that some

rough rules of thumb say is adequate for a comfortable retirement, and that is before drawing on any housing wealth. A couple splitting its lifetime earnings would have to save somewhat more to get the same replacement rate.

A single person with the same income and wealth will not do as well as the previously described couple because of considerably lower Social Security benefits. Most singles in the second quartile will need more than the 50th percentile wealth level for an adequate retirement.

Going back to table 2, in the second quartile, nonhousing assets in the 25th percentile are less than one-third the level in the 50th percentile. It is conceivable that a few households in the 25th percentile and below can achieve an adequate retirement using Social Security and a portion of their housing wealth, but it must be precious few.

Nonhousing wealth in the 75th percentile of the second quartile is 2.5 times that in the 50th. Add some Social Security and a small draw on housing wealth and it is probable that almost all households in the 75th percentile and above will enjoy an adequate retirement. Defined benefit pension wealth begins to be significant for some of the population in the second quartile. At the 75th percentile of the defined benefit distribution, it totals \$60,465.

The top half of the income distribution. In the third quartile, the 50th percentile nonhousing wealth is \$110,940 or about 1.3 times median income (table 2). The 50th percentile of Social Security wealth is even greater at \$185,388 (table 3), while the same percentile of defined benefit wealth is \$46,550 and housing wealth is almost \$100,000. With these additional asset classes, most married couples with children with wealth around the 50th percentile should be well off in retirement. The prospects of singles and childless couples are somewhat more uncertain, and the adequacy of their retirement will depend on their specific needs.

Nonhousing wealth at the 25th percentile of the third quartile is less than half of median income. Again, only a tiny portion at this percentile and below are adequately preparing for retirement. The 75th percentile of nonhousing wealth is \$334,900, or 4 times the median income of the quartile. Almost all households in this group and above are headed for a fine retirement. The 75th percentile of defined benefit wealth is a substantial \$207,112.

A very similar story can be told for the fourth income quartile. Almost all households in the 75th percentile and above seem to be marching toward an affluent retirement, while almost all in the 25th percentile and below are in dubious shape. There is considerable ambiguity at the 50th percentile with married couples with children who had been in college doing quite well while singles and childless couples face more uncertain futures.

Although Social Security wealth is much lower relative to income at the top than in lower quartiles of the distribution, it is considerably higher absolutely, with a value in the 50th percentile of \$224,358. The 75th percentile of defined benefit wealth equals \$151,523. None shows up in the 50th percentile and below.

A Comparison with Other Findings in the Literature

How do these findings compare with others in the literature? The aforementioned CBO study surveyed 17 articles on the topic, most of which applied the standard that consumption in retirement should approximate that during a working life. CBO concluded that there was a consensus that half of baby boomers were prepared by this standard. However, I believe that the literature is not sufficiently sensitive to the enormous diversity of needs within the baby boomer population and that diversity makes it extremely difficult to interpret aggregate data.

Nevertheless, I shall commit the same sin and add some speculation to see if any conclusions are possible. A very large part of the lowest income quartile will be able to maintain pre-retirement consumption levels based on the support households get from Social Security and other welfare payments. Let us be conservative and say that three-quarters of households in the lowest quartile are adequately supported by Social Security. That amounts to 19 percent of the population. In the top three quartiles, almost all the 75th wealth percentile is well prepared. The few exceptions are those with particularly high needs. Let us suppose that 90 percent of households above the 75th percentile are in good shape, or 17 percent of the population. That gives us 36 percent of the population. There is more uncertainty between the 25th percentile and the 75th percentile wealth holders in the top three quartiles, but a lot of married couples with children will be quite well prepared and some singles and married with defined benefit plans will not need a lot of savings. Whether one can find enough people in this group who are well prepared to bring the total to CBO's 50 percent is uncertain, but most likely. In any case, our data are at least as optimistic as Gale's (1997). He concluded that one-third of the population was clearly well prepared, one third was badly prepared, and the other third was "just hanging in there." Munnell, Webb, and Golub-Sass (2007) reach a similar conclusion, saying that the lower 35 percent of the distribution of younger baby boomers is definitely poorly prepared. They draw from a wider age range than is used in our sample and they point out that the situation is worse for younger as opposed to older baby boomers.

The literature implies that those at the top of the income scale are best prepared. That is not my finding. A large portion of those who are prepared are at the bottom, relying almost entirely on Social Security, while the very top reports so little wealth that one must suspect underreporting.

Another aspect of CBO's conclusions is interesting. CBO concluded that baby boomers are saving as much as their parents. Yet, it concluded that only half were prepared for retirement. This suggests that only half of baby boomer parents were prepared for retirement. And yet the HRS suggests that only 19 percent of the current generation of retirees respond that they suffered a fall in their standard of living after they stopped working. In addition, poverty rates of the elderly have declined over time, and average incomes have grown. This seems to either confirm the notion that assets are widely underreported or that commonly accepted savings targets are overstated. But it should also be noted that pre-baby boomers were very lucky. They benefited greatly from the postwar boom, they earned especially high rates of return on equity investments, and they probably received higher Social Security and Medicare benefits than they expected early in life. This good luck may account for their apparent happiness.

Since the CBO report, some papers have painted a rosier picture. The rosier comes from Scholtz and Seshardi (2008). Analyzing the age group studied in this paper, they conclude that only about 10 percent have inadequate savings and that earlier age cohorts tend to be even better prepared. The difference between their conclusion and mine stems not from a significantly different view of the asset holdings of the baby boomers, but from a very different view of what the target should be. Their target for the median household in the baby boomer age group is only \$26,831, including housing wealth. That is less than one-third of the target, excluding housing wealth, derived above from ESPlanner for a couple with two children and a house. If I had assumed such a low target, I too would have concluded that almost all people in the age group studied are well prepared. I suspect that the tastes implied by the utility function these authors assumed are somewhat unrealistic.

A somewhat less optimistic conclusion comes from Hurd and Rohwedder (2008), but it is happier than the CBO consensus. They take note of the fact that it is optimum for consumption to decline with age during retirement and that the rate of decline should depend on a particular group's mortality rate. They ask whether wealth at retirement is sufficient to finance the optimum level of consumption, and, given the assumed rate of decline of consumption, they compute a probability that people will exhaust all their wealth before dying. In some ways, their conclusions are similar to mine. In particular, they find that married couples tend to be better off than singles. However, they assume a very high proportion of households are well prepared—83 percent of married couples, 43 percent of single women, and 63 percent of single men. They are looking at an older group than I am, and other studies suggest that preparedness declines at younger ages. I also suspect that more of their older group has generous defined benefit plans. Nevertheless, it is likely that the group that I observe in their early 50s will have to save vigorously before retirement in order to attain the levels of preparedness implied by Hurd and Rohwedder.

Conclusions

A great paradox emerges from these results. If the only criterion used to measure a household's preparedness for retirement is the ratio of post-retirement consumption to pre-retirement consumption, then some of the poorest households in the country are best prepared because they can maintain their consumption by relying almost solely on Social Security. At the same time, many very affluent households are said to be poorly prepared because they will suffer a decline in consumption upon retiring.

This conclusion is so out of line with ordinary perceptions that it casts considerable doubt on using the criterion that pre- and post-retirement should be equalized. If one focuses on the top quartile, the 50th percentile nonhousing asset holding is \$528,600. By the usual standard, that is marginal with it probably being adequate for most married couples, but dubious for singles. But it is sufficient to support a very comfortable lifestyle that would please most in the second or third quartile of the distribution, especially if combined with a small draw on housing wealth and a defined benefit pension. And it implies a consumption level many times that of the poor household that is said to be well prepared for retirement.

In other words, it is very difficult to argue that very many of the more affluent who are not prepared for retirement by the usual standard present a very serious social problem. It is hard to be concerned about someone who has saved “only” \$1 million when economists say that he or she should have saved \$1.2 million. These households may even be plotting their course rationally, deciding that they want to have their fun while they are young. Of course, it is more likely that they just lacked self-discipline, but it did not impoverish them. Just as a vast majority of today’s retirees say that they are happy despite some apparent lack of saving, we may find that a vast majority of retired baby boomers turn out to be pretty happy without having as much as economists say they should have. At the same time, it is legitimate to be concerned about those at the bottom, whether or not they have the same consumption levels while retired as when they were working. Looking only at the absolute level of their lifetime earnings, it can be said that they were prepared neither for their retirement nor for their working life. They should be a societal concern both for humanitarian reasons and for the more selfish reason that they are very likely to require welfare at some point and be a burden on the taxpayer.

It was noted in the beginning of this paper that there may be good reason to increase one's saving targets above those of earlier generations because the financial risks faced in retirement, particularly those related to out-of-pocket medical expenditures, have risen significantly. The amounts of money involved are growing relative to other consumption expenditures, and they are very high. The relatively affluent couple shown at the bottom of the appendix table should have \$600,000 more in saving on the eve of retirement if it expects uninsured nursing home expenditures than if it doesn't.

I think it safe to say that not many households increase their saving sufficiently to cover the worst possible health cost risks. It would not be rational for them to do so. It is reasonable to accept some risk that one will be thrown into Medicaid and left living on only Social Security. The question is, how much risk? To my knowledge, not much work has been done on the typical retiree's tolerance for risk. It is a topic worthy of further research.

One aspect of the wealth of baby boomer households has not been emphasized in this study. The SCF data indicate that the distribution of assets is highly unequal. The 75th percentile of the top quartile has more than 1,000 times the assets of the 25th percentile of the first quartile. A projection of the well-being of the retired population in 2020 implies that the distribution of wealth and income among retirees will be considerably more unequal than it is today (Toder et al. 2002). Nevertheless, retirees will live better than today's retirees on average, and their poverty rate will be lower.

The increased inequality of income is partly due to the breakup of the American family. Divorcees do not typically do well economically, whether retired or not, and there will be many

more divorced retirees in 2020. Similarly, single mothers do not fare well, neither while working nor while retired, and there will also be many more of them in 2020's retired population.

So whether because of changes in family structure or insufficient saving while working, many retirees will be living on the edge in coming decades. Different studies differ on exactly how many will find themselves in difficult circumstances, but with the exception of Scholtz and Seshardi, almost all agree that there will be a lot.

Appendix Table. Target Measures of Nonhousing Wealth Using ESPlanner (thousands of dollars)

<i>Row</i>	<i>Marital status, income, other variables</i>	<i>Age 40</i>	<i>Age 45</i>	<i>Age 50</i>	<i>Age 55</i>	<i>Age 60</i>	<i>At retirement</i>
1	Single, \$68,000, house	14	46	86	136	201	272
2	Married, \$68,000, house, two children	39	78	84	99	156	221
3	Single, \$136,000, house	282	382	501	637	804	964
4	Single, \$136,000, no house	580	719	871	1,040	1,226	1,357
5	Married, \$136,000, house, two children	167	315	399	506	693	850
6	Married, \$136,000, house, two children, defined benefit plan	40	67	32	3	30	95
7	Single, \$204,000, house	702	897	1,125	1,385	1,694	1,972
8	Married, \$204,000, house, two children	118	219	291	416	669	924
9	Married, \$204,000, house, two children, 1% return	430	532	594	704	925	1,120
10	Married, \$272,000, house, two children	316	469	590	807	1,170	1,533
11	Single, \$136,000, house, two children (0.7 equivalent)	18	78	101	200	394	585
12	Married, \$204,000, two children, nursing home expenses	477	633	764	955	1,282	1,609
13	Married, \$204,000, two children, nursing home expenses, 15% saving	138	320	481	699	1,059	1,427

Notes: All calculations performed using ESPlanner. Baseline parameter values: Inflation rate 3 percent; nominal return 6 percent; saving rate 5 percent in a 401(k), 2.5 percent in non-tax-preferred assets (split evenly between money market and stocks); house value is 2.5 times household income; mortgage balance is 2.0 times household income; property tax rate is 0.68 times house value (Ladd and Bradbury 1988); mortgage payments for 20-year loan at 6.5 percent (\$632 a month per \$100,000 mortgage). For defined benefit plan, payments are 30 percent of final-year income. The home mortgage is assumed paid off by age 60. Two children are age 8 and 10 when adult is age 40; equivalence scales for children are 0.25 (as in Attanasio et al. 1999); \$20,000 a year of college expenses in 2006 dollars for incomes of \$136,000 or more, \$10,000 a year for incomes of \$68,000. In the medical expenses scenario, there are tax-deductible out-of-pocket expenditures for a nursing home stay for the last five years of a spouse's life. These are assumed to be \$40,000 annually (in 2006) but in each year such costs rise at a 3 percent real annual rate, so by 2056, they are \$175,000 for each of the five years. The household is assumed to reside in Pennsylvania for state tax purposes. Single scenario: Single, life expectancy of 95. Married scenario: Equivalence scale of 0.6 for spouse; life expectancy of male is 85; life expectancy of female is 95; \$250,000 is held in a term life insurance policy.

References

- Attanasio, Orazio, James Banks, Costas Meghir, and Guglielmo Weber. 1999. "Humps and Bumps in Lifetime Consumption." *Journal of Business & Economic Statistics* 17(1): 22–35.
- Bender, Keith A. 2004. "The Well-Being of Retirees: Evidence Using Subjective Data." Working Paper 2004-24. Boston, MA: Center for Retirement Research, Boston College.
- Bernheim, B. Douglas, Jonathan Skinner, and Stephen Weinberg. 2001. "What Accounts for the Variation in Retirement Wealth among U.S. Households?" *American Economic Review* 91(4): 832–57.
- Bloom, David, David Canning, and Michael Moore. 2007. "A Theory of Retirement." Working Paper 13630. Cambridge, MA: National Bureau of Economic Research.
- Butrica, Barbara, Karen E. Smith, and C. Eugene Steuerle. 2006. "Working for a Good Retirement." Discussion Paper 06-03. Washington, DC: The Urban Institute.
http://www.urban.org/retirement_policy/url.cfm?ID=311333
- Congressional Budget Office. 2003. "Baby Boomers Retirement Prospects: An Overview." <http://www.cbo.gov/ftpdocs/48xx/doc4863/11-26-BabyBoomers.pdf> (accessed June 26, 2008).
- Gale, William D. 1997. "The Aging of America: Will the Baby Boom Be Ready for Retirement?" Washington, DC: The Brookings Institution.
http://www.brookings.edu/articles/1997/summer_saving_gale.aspx (accessed June 26, 2008).
- Gokhale, Jagadeesh, and Lawrence J. Kotlikoff. 2001. "The Babyboomers' Mega Inheritance – Myth or Reality." Economic Commentary. Cleveland, OH: Federal Reserve Bank of Cleveland.
- Hurd, Michael, and Susan Rohwedder. 2008. "Adequacy of Resources in Retirement." Paper presented at the 10th Annual Joint Conference of the Retirement Research Consortium, August 8–9.
- Johnson, Richard W., and Rudolph G. Penner. 2004. "Will Health Care Costs Erode Retirement Security?" Issue Brief 23. Boston, MA: Center for Retirement Research, Boston College.
- Kotlikoff, Laurence. 2006. "Is Conventional Financial Planning Good for Your Financial Health?" Unpublished paper, February 2006.
- Ladd, Helen F. and Katherine L. Bradbury. 1988. "City Taxes and Property Tax Bases." *National Tax Journal* 41 (4): 503–23.
- Mermin, Gordon B. and Desmond Toohey. Forthcoming. "Retirement Wealth Accumulation over the Life Cycle." Washington, DC: The Urban Institute.

- Munnell, Alicia H., Anthony Webb, and Francesca Golub-Sass. 2007. "Is There Really a Retirement Saving Crisis? An NRRI Analysis." No. 7-11. Chestnut Hill, MA: Center for Retirement Research at Boston College.
- Scholtz, John, and Ananth Seshardi. 2008. "Are All Americans Saving 'Optimally' for Retirement?" Paper presented at the 10th Annual Joint Conference of Retirement Research Consortium, August 8–9.
- Skinner, Jonathan. 2007. "Are You Sure You're Saving Enough for Retirement?" *Journal of Economic Perspectives* 21(3): 59–80.
- Toder, Eric, Lawrence H. Thompson, Melissa Favreault, Richard W. Johnson, Kevin Perese, Caroline Ratcliffe, Karen E. Smith, et al. 2002. "Modeling Income in the Near Term: Revised Projections of Retirement Income through 2020 for the 1931–1960 Birth Cohorts." Washington, DC: The Urban Institute. www.urban.org/url.cfm?ID=410609.