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# HOW MUCH ARE WORKERS SAVING?

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## Introduction

It is crucial that today's workers save for retirement for two reasons. First, Social Security replacement rates will decline due to increases in the Normal Retirement Age, rising premiums for Medicare, more personal income taxation, and potential adjustments to restore financial balance to the system. Second, accumulations in 401(k) plans may well be much lower than people anticipate. As such, personal saving will become increasingly necessary for retirement security.

So how much are individuals saving for retirement? The standard measure, the personal saving rate reported in the official U.S. National Income and Product Accounts (NIPA), has fallen dramatically and in 2004 stood at a dismal 1.8 percent of disposable personal income. But is this indicator an accurate measure of saving behavior?

The NIPA personal saving rate is a much beleaguered statistic. Economists complain that 1) consumer durables that generate services over an extended period of time (such as automobiles and dishwashers) are treated as consumption rather than investment; and 2) interest income and outlays are not adjusted for inflation. Analysts interested in retirement security bemoan the exclusion of capital gains, because these gains may help finance post-retirement consumption. This study focuses on a new issue — namely, NIPA combines the saving of the working-age population with the dissaving of retirees. This aggregation would not distort trends in saving if retirees were a constant proportion of the population, but with the retirement of the baby boom generation, their ranks will swell. As a result, even if the saving of each age group remains unchanged, the aggregate saving rate will decline.

This *brief* thus attempts to separate the saving out of current income done by the working-age population (those under age 65) from that undertaken by retirees (those 65 and over). The first section describes the NIPA accounts. The second section estimates the share of NIPA personal saving that belongs to those under age 65. The third section broadens the calculation of household saving to include business saving.

## The Purpose and Derivation of NIPA Saving

The National Income and Product Accounts are designed to measure current production and income derived from that production. Saving in the NIPA measures the extent to which society sets aside currently produced resources for the purpose of increasing its future standard of living. The amount set aside includes: current income not consumed by households; current earnings retained by businesses; and current revenues not spent by government.

This study begins with current income not consumed by households, or "personal saving"— the measure most frequently discussed in the media. In the NIPA, the household sector is defined very broadly. It includes nonprofit institutions that primarily serve households, such as those providing medical care, recreation, education, research, religious and welfare activities. It also includes pension funds, some insurance reserves, private trust funds, and unincorporated businesses.

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In the NIPA framework, personal saving is the difference between personal disposable income and personal outlays. Personal disposable income is personal income less tax from the household sector to government. As shown in Table 1, personal income consists of wages and salaries; supplements to wages and salaries (pensions, health insurance, etc.); proprietors', rental, and asset income (interest and dividends); and transfer payments less contributions for social insurance (Social Security and Medicare). Personal outlays are mainly consumption expenditures on durables, nondurables, and services. In 2004, the personal saving rate equaled personal saving ($151.8 billion) divided by disposable personal income ($8,664.2 billion) or 1.8 percent.

For most of the postwar period, the NIPA personal saving rate displayed a modest upward trend with very little variation (see Figure 1). Since the early 1980s, however, the rate has dropped precipitously from 11.2 percent of personal disposable income in 1982 to 1.8 percent in 2004.

Economists have spent a lot of energy attempting to explain the precipitous drop, but with little success. For example, some researchers point to the rise in the wealth-to-income ratio due to capital gains in the stock and housing markets.[1] Appreciation in the value of existing assets would reduce the need for households to save out of current income. Unfortunately, the rise in the wealth ratio is concentrated in the years after 1994, and therefore does not explain why the saving rate took a nose dive beginning in the early 1980s. Other economists have emphasized mortgage refinancing as a way to withdraw housing equity to finance current consumption.[2] Again, this development is an important phenomenon in the late 1990s, but does little to explain the decline in saving in the earlier years. Thus, the decline remains a puzzle. Although this study was not designed to solve the puzzle, looking at saving by age group does help explain the decline.

Table 1. Saving = Income - Taxes - Consumption

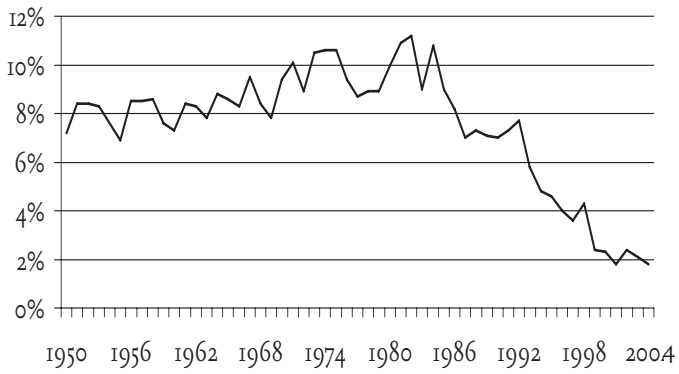
*Derivation of NIPA Personal Saving, 2004, billions of dollars*

| | |
|---|---|
| **Personal Income** | $ 9,713.3 |
| Compensation of employees | 6,687.6 |
| Wages and salaries | 5,389.4 |
| Supplements (pensions, health insurance, etc.) | 1,298.1 |
| Proprietors', rental, interest, and dividend income | 2,420.3 |
| Personal current transfer receipts | 1,427.5 |
| Government benefits | 1,394.5 |
| Transfers from business | 33.0 |
| *Less*: **Contributions for social insurance** | 822.2 |
| *Less*: **Personal current taxes** | 1,049.1 |
| *Equals*: **Diposable personal income** | 8,664.2 |
| *Less*: **Personal outlays** | 8,512.5 |
| *Equals:* **Personal saving** | 151.8 |

*Source:* Bureau of Economic Analysis (2005).

Figure 1. NIPA Personal Saving Has Plummeted Since Early 1980s

*Personal Saving as a Percentage of Disposable Personal Income, 1950-2004*




*Source:* Bureau of Economic Analysis (2005).

# The Saving of the Working-Age Population

A confounding aspect of the personal saving rate is that it combines the saving of the working-age population with the dissaving of those 65 and over. With regard to the question of retirement preparedness, the saving by the working-age population is the key concern. Although the extent to which older people dissave is a source of controversy in the economics literature, the very structure of the accounts virtually ensures that the NIPA saving rate for the elderly will be negative.[3] Specifically, the NIPA includes all contributions and interest and dividend income in employer pension plans, including 401(k) plans, in personal income. Benefits paid from these plans, on the other hand, are not included in the income of retirees but are treated as a drawdown of accumulated savings. That is, much of the money that funds the current consumption of the elderly is not counted as current income. (NIPA treats Social Security just the reverse. Contributions are not included in the income of workers, while benefits are counted in the income of retirees.)

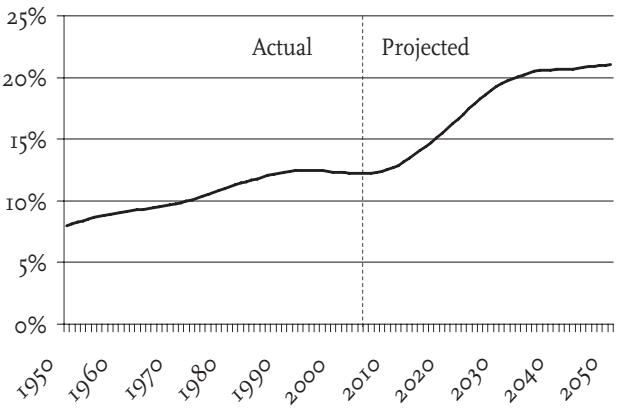
If retirees were a constant portion of the population, the negative saving by the elderly would not help explain the fall in the aggregate saving rate. But the retiree portion of the population has been increasing gradually and will rise sharply with the aging of the baby boomers (see Figure 2). Their increasing proportion means that the dissaving of the elderly will dramatically reduce the NIPA saving rate over time.

By removing retirees' income, taxes and outlays from the calculation of the saving rate, this study adjusts the benchmark personal saving rate reported in the NIPA to provide a more accurate picture of saving for retirement by the working-age population.[4] This exercise is somewhat tenuous. Saving is the small difference between two very large numbers — disposable personal income and personal outlays. Slight modifications in assumptions can have a significant impact on the measured saving rates of the two populations. Thus, the goal of this exercise is not to justify each assumption used to divide income, taxes, and outlays between the working-age and 65 and over components of the population. Rather, it is simply to make the point that workers and retirees have different patterns. And as the population ages, the NIPA saving rate will become an increasingly poor measure of the extent to which the working-age population sets aside resources out of current income to support itself in retirement.

Calculating the saving rate for the working-age population involves the use of government household surveys of income, wealth, and expenditures to divide each component of NIPA income and outlays between the under 65 and 65 and over population.

FIGURE 2. U.S. POPULATION WILL AGE RAPIDLY AS BABY BOOMERS RETIRE

*Percent of Population 65 and Over, 1950-2050*




*Source:* Social Security Administration (2005).

The gruesome details of the calculations for 2001 [5] are described in the working paper from which this brief is derived; the following simply provides the flavor of the process.[6] For example, the major component of NIPA personal income is compensation of employees. Here the allocation is straightforward. Total compensation of employees is divided between the two age groups based on compensation by age reported in the Department of Labor's Consumer Expenditure Survey. The second largest component — proprietors', rental, interest, and dividend income — is difficult and messy to allocate, requiring wealth holdings by age from the Federal Reserve's Survey of Consumer Finances and asset data from the Flow of Funds. The third largest component of personal income — government benefits — consists mainly of Social Security, Medicare and Medicaid. Again the allocation is straightforward, based on data by age from the relevant agencies.

*Elderly dissaving will dramatically reduce the NIPA saving rate over time.*

Personal taxes are divided between the elderly and non-elderly population using tax payments by age from the Consumer Expenditure Survey.

On the outlays side, most of the expenditures are divided between those 65 and over and the working-age population based on data by age in the Consumer Expenditure Survey. The major challenge on the expenditure side is medical care, because the NIPA includes costs paid by health insurance companies and the household surveys report only out-of-pocket expenses. Thus, data on national health expenditures were used as the basis for determining the amount of NIPA medical care expenditures belonging to those below 65 and those 65 and over.

Table 2 displays the NIPA personal saving rate for the working-age population, those 65 and over, and the total population in 2001. According to our estimates, in 2001 the reported NIPA saving rate of 1.8 percent for the nation consists of a positive rate of 4.4 percent for the working-age population and a negative rate of -11.9 percent for those 65 and over.

Figure 3 applies the same methodology for separating the income, taxes and outlays for the two age groups for the period 1980 through 2003. Once the elderly are separated out of the NIPA accounts, the

Table 2. Aging Population Means Fewer Savers and More Dissavers

*Personal Saving for Those of Working-Age, Those 65 and over, and the Total Population, 2001, billions of dollars*

| Item | Working Age | 65 and over | Total |
|---|---|---|---|
| Disposable Personal Income | $ 6,278 | $1,209 | $7,487 |
| Personal Outlays | 6,001 | 1,353 | 7,355 |
| Saving | 277 | -144 | 133 |
| Addendum: Personal Saving Rate | 4.4% | -11.9% | 1.8% |

*Source:* Bureau of Economic Analysis (2004) and authors' calculations.

Note: For details, see Appendix 1 of Munnell, et al. (2005 forthcoming).

decline in saving is much less dramatic. The divergence between the saving rate for the working-age population and the total rate increases over time. Today, the saving rate for the working-age population appears to be heading towards six percent as the total rate hovers around two percent.

One obvious question is why the saving rate for the working-age population and the total personal saving rate appear to increasingly diverge. The answer appears to hinge on the dramatic decline in the saving rate of those 65 and over (see Figure 4).

Figure 3. Focusing on Workers Improves Saving Picture Considerably

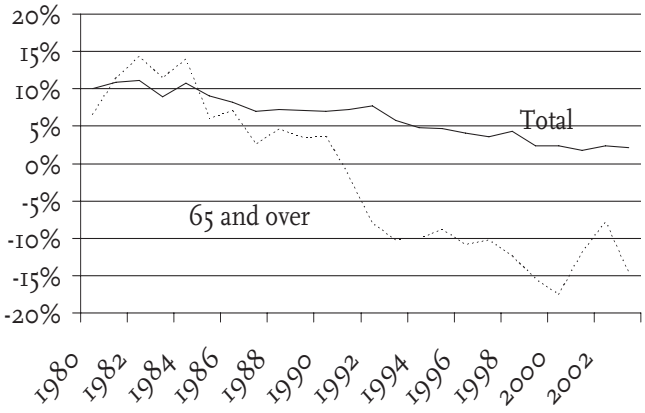
*NIPA Personal Saving Rate: Total and Working-Age Populations, 1980-2003*


*Source:* Bureau of Economic Analysis (2004) and authors' calculations.

Here three factors play an important role. First, on the income side, pension income as a percent of total income of households 65 and over has increased from 14 percent of the total in 1980 to 19 percent in 2002 (Chen 1992 and U.S. Social Security Administration 2002). As noted above, pension benefits are not counted as part of NIPA income. Assuming that all pension benefits are consumed, the increase in importance of this non-counted source would reduce the saving rate of those 65 and over by 5 percentage points.

Figure 4. Saving for Retirees Has Dropped Rapidly

*NIPA Personal Saving Rate: Total and 65 and over Populations, 1980-2003*




*Source:* Bureau of Economic Analysis (2004) and authors' calculations.

The second factor, also on the income side, is the decline in nominal interest income as inflationary pressures waned in the 1980s. The NIPA saving rate is calculated using nominal values of income and outlays. If inflation simply scaled up the value of these components, it would have little effect on the saving rate. Inflation, however, tends to raise interest income more than the change in the general price level.[7] As a result the saving rate varies with the rate of inflation. Because the household sector tends to be a net lender to other sectors, net interest income, and therefore saving rates, tend to be high when inflation is high and to decline as inflation drops. The decline in inflation has a disproportionately large effect on the saving rate of those 65 and over, because they receive a large percentage of interest income.

The third important factor contributing to the decline in the saving rate for those 65 and over occurs on the outlay side. Health care expenditures for households as a whole increased from 11.6 percent of total outlays in 1980 to 19.5 percent in 2003.

## BEWARE OF DOUBLE COUNTING!!

Sometimes when researchers and commentators assess saving for retirement, they cite Social Security, employer-sponsored pensions, and personal saving as if these are three independent sources of retirement income. The problem with this assessment is that much of personal saving in the NIPA is pension contributions and earnings on accumulated pension assets. Thus, commentators may well be double counting.

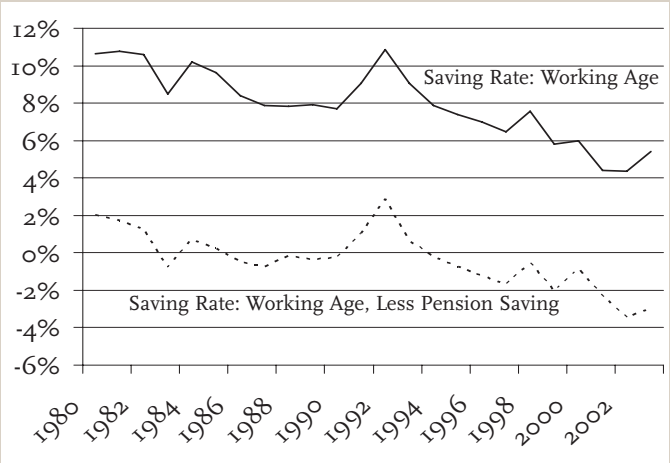
To estimate NIPA personal saving excluding saving in employer-sponsored plans requires the subtraction of three amounts: 1) employer contributions to both defined benefit and defined contribution plans; 2) employee contributions, primarily to 401(k) plans; and 3) the earnings on the accumulated plan assets. Employer contributions and earnings on pension assets come right out of the NIPA accounts — pro-rated to reflect the proportion attributable to the working-age population. An estimate of employee 401 (k) contributions is derived by subtracting NIPA employer contributions from total contributions as reported in the Department of Labor's Form 5500. Once the saving figure is reduced to exclude pension saving, it is divided by personal disposable income to derive the non-pension saving rate for the working-age population.

As shown in Figure 5, pension saving for most of the period since 1980 accounts for virtually all the saving of the working-age population. Since the mid-1990s, saving outside of pensions for the working-age population has actually been negative. This pattern most likely reflects the "wealth effect" created by the enormous run-up in the stock market in the second half of the 1990s and more recently the tapping of housing equity in the wake of the housing boom. In each case, households see an increase in their wealth that does not arise from current income and therefore is not reflected in NIPA income. However, the increase in wealth causes households to spend more and thereby reduces the NIPA saving rate.

The key point is that adding the saving of the working-age population to pension saving results in double counting saving through employer-sponsored plans.

FIGURE 5. WORKERS SAVE NOTHING OUTSIDE OF PENSION PLANS

*NIPA Personal Saving Rate: Working-Age Population with and without Pensions, 1980-2003*




*Source*: Bureau of Economic Analysis (2005) and authors' calculations.

Note: For details, see Appendix 2 of Munnell, et al. (2005 forthcoming).

Since the elderly account for a disproportionate share of these outlays, the increase disproportionately raised their outlays and lowered their saving rate.

In short, a number of factors have combined to bring down the saving rate of those 65 and over. The result has been that the total NIPA personal saving rate increasingly understates the saving of the working-age population. As noted above, the discrepancy will only increase as the share of the population 65 and over rises. Therefore, to understand the extent to which current workers are saving for retirement it will become increasingly important to separate the saving of those 65 and over from that of the working-age population.

# Business Saving and the Saving Rate

So far, the analysis has focused on "personal saving" — current income not consumed by households. As noted above, the second major component of national saving in the NIPA is "business saving" — current income retained by businesses.[8] Together, personal and business saving comprise "private saving."

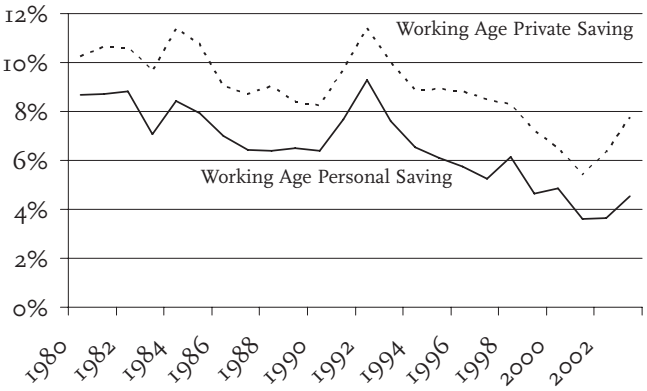
Focusing only on the personal saving rate understates the extent to which households are squirreling away nuts for tomorrow. First, the distinction between personal and business saving is somewhat arbitrary. For example, for NIPA purposes, any time a company goes from a sole proprietorship or partnership to a corporate form its saving moves from the household to the business sector. Second, saving by business (whether incorporated or unincorporated) adds to personal wealth since households are the ultimate owners of business assets.

The inclusion of business saving also partially addresses a major complaint raised by various analysts against the NIPA saving rate — the exclusion of capital gains from the measure. As noted above, the NIPA is designed to measure the amount of current output available for investment and thus does not include appreciation in the value of existing assets arising from price changes as part of income or saving. Yet capital gains clearly make households better able to support themselves in retirement. Business saving, which NIPA does measure, is an important component of the rising value of corporate stock. So including business saving produces a better estimate of saving for retirement by the working-age population within the NIPA framework.

Since the focus of this study is the saving of the working-age population, the next step is to allocate total business saving between those over and under age 65. The allocation of direct equity holdings is based on holdings by age as reported in the Federal Reserve's Survey of Consumer Finances. Equities held in pensions are allocated between the young and old based on population. The definition of income also has to be broadened to the concept of "national income" to reflect the addition of business income. Figure 6 shows, for the working-age population, the "private" saving rate, which includes business as well as personal saving. In this case, national income — rather than personal disposable income — serves as the denominator. Because of the addition of business saving, working-age private saving exceeds working-age personal saving by 2 to 4 percentage points. This measure of private saving most accurately reflects the extent to which the working-age population is saving out of current income.

FIGURE 6. ADDING BUSINESS SAVING IMPROVES THE PICTURE SOMEWHAT

*NIPA Saving Rate: Personal and Private Saving for Working-Age Population, 1980-2003*




*Source:* Bureau of Economic Analysis (2005) and authors' calculations.

Note: For details, see Appendix 3 of Munnell, et al. (2005 forthcoming).

# Conclusion

Three conclusions emerge from this analysis. First, adjusting the NIPA personal saving rate shows that personal saving by the working-age population is significantly higher than the reported national rate. Moreover, allocating a portion of business saving to working-age households further raises their saving rate. The pattern of saving over time is also easy to understand. It remains more or less steady until the

last half of the 1990s, at which point it declines in response to the run-up in the stock market. When the bubble burst, the NIPA saving rate rebounded as people no longer had capital gains to spend.

Second, commentators should be careful not to double count saving through employer-sponsored plans by referring to pension saving and personal saving as if they are different components. In fact, for most of the time between 1980 and 2003, pension saving accounted for all of personal saving, and, today at least, saving outside of pensions is negative for the working-age population.

Finally, the analysis (inadvertently) helps explain the puzzle surrounding the collapse of the total NIPA personal saving rate beginning in the early 1980s. While capital gains were part of the story in the 1990s, most of the downward trend can be explained by changes in the saving rate of those 65 and over. Three factors conspire to make their saving increasingly negative. Pension income — not counted in the NIPA — has become an increasingly important source of the income of those 65 and over. The decline in nominal interest income as inflationary pressures waned in the 1980s reduced saving rates for the whole population, but had a particularly large effect on those 65 and over, who receive a disproportionate share of the interest. And the rising cost of health care boosted expenditures — again particularly for those 65 and over, who bear a disproportionate share of the burden.

In short, the total NIPA personal saving rate increasingly understates the saving of the working-age population, and the discrepancy will only increase as the share of the population 65 and over rises. However, a significant NIPA saving rate by the working-age population does not necessarily mean that they are adequately preparing for retirement since virtually all of personal saving, and most of private saving, consists of saving through pension plans.

# Endnotes

1 Gale and Sabelhaus (1999).

2 Catte et al. (2004).

3 In examining the extent to which households dissave in retirement, economists have focused primarily on non-annuitized wealth — that is, they tend to ignore pensions and Social Security benefits. A series of studies looking at panel data for the 1960s, 1970s, and early 1980s finds that the elderly draw down their non-annuitized financial assets at a relatively slow rate of between 1 and 5 percent per year. The results for the late 1980s and 1990s differ from the earlier studies in that they show either no change or increases in non-annuitized assets. For a summary of the literature, see Haider et al. (2000).

4 A note of caution is important here. The NIPA saving rate is not necessarily a measure of retirement adequacy — a high saving rate does not guarantee a comfortable retirement. Investment choice and investment performance are also important.

5 The year 2001 was selected as the starting point for the project because it is the date of the most recent Survey of Consumer Finances, which contains crucial wealth data.

6 For full details of the methodology in constructing a saving measure for the working-age population, see Appendix 1 in Munnell, et al.

7 The required adjustment to the nominal interest rate to leave consumers as well off in an inflationary economy as they were in a noninflationary economy is equal to p + pi, where p is where is the rate of inflation and i is the interest generated by the asset. The first term compensates for the loss of purchasing power on the value of the asset and the second term compensates for the loss of purchasing power on the interest generated by the asset (Perozek and Reinsdorf 2002).

8 Specifically, business saving in the NIPA is the undistributed profits of corporations, which consist of after-tax profits less dividends paid out to shareholders. It also consists of an inventory valuation adjustment applied to the book value of inventories and a capital consumption adjustment applied to the book value of plant and equipment. These adjustments make the undistributed profits measure consistent with the replacement cost concept that underlies the NIPA (see Gale and Sabelhaus 1999).

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CENTER FOR RETIREMENT RESEARCH AT BOSTON COLLEGE

## About the Center

The Center for Retirement Research at Boston College was established in 1998 through a grant from the Social Security Administration. The Center's mission is to produce first-class research and forge a strong link between the academic community and decisionmakers in the public and private sectors around an issue of critical importance to the nation's future. To achieve this mission, the Center sponsors a wide variety of research projects, transmits new findings to a broad audience, trains new scholars, and broadens access to valuable data sources. Since its inception, the Center has established a reputation as an authoritative source of information on all major aspects of the retirement income debate.

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