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HOW DO PENSIONS AFFECT REPLACEMENT RATES?

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Introduction

Do today's retirees have sufficient income to meet their needs? One common way to address this question is to determine a household's "replacement rate." The replacement rate gauges the extent to which retirement income allows workers to maintain their pre-retirement standard of living. This *brief* is the second in a series examining replacement rates for current retirees. The first one looked solely at Social Security, the single most important source of retirement income. This *brief* adds employer-sponsored pensions and household saving outside of employer plans to provide a more comprehensive picture of replacement rates. A final *brief* will consider how the addition of housing equity may affect replacement rates.

What Is a Replacement Rate?

Replacement rates are used to assess how well older people can maintain their pre-retirement levels of consumption once they stop working.[1] The most direct approach would be a comparison of household consumption while working with consumption after retirement. But such data are rarely available. An indirect approach is to compare pre- and post-retirement income. Using this method, a replacement rate is defined as the ratio of post-retirement income to pre-retirement income. For example, retirees with an annual income of $35,000 compared to a pre-retirement income of $50,000 would have a replacement rate of 70 percent ($35,000/$50,000). This concept is widely used by analysts and financial planners and is the one adopted in this *brief*.

What level of replacement rate do people need to maintain their standard of living in retirement? Clearly, the answer is less than 100 percent - for three main reasons. First, people pay much less in taxes after retirement. When people are working, their earnings are subject to both Social Security payroll taxes and federal personal income taxes. After retirement, they no longer pay Social Security taxes, and they pay lower federal income taxes because only a portion of Social Security benefits are taxable. Second, they no longer need to save a portion of their income for retirement and, in fact, can draw on their accumulated reserves. In addition, many households try to pay off their mortgage before they retire. Thus, a greater share of their income is available for spending. A final factor often mentioned is that work-related expenses, such as clothing and transportation, are either no longer necessary or are much reduced.

While all analysts cite the same factors for why retirees need less than their full pre-retirement income, they employ different approaches to calculating precisely how much less. Overall, the range of studies that have examined this issue consistently finds that middle class people need between 65 and 75 percent of their pre-retirement earnings to maintain their lifestyle once they stop working.[2] The focus of this study is to determine what replacement rates people are actually receiving.

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A Recap of Social Security Replacement Rates

The previous *brief* in this series reported Social Security replacement rates for newly retired married couples and single person households.[3] The key finding was that Social Security benefits on average replace about 44 percent for both couples and single individuals. The measure of pre-retirement income used in the Social Security analysis was Average Indexed Monthly Earnings (AIME), which is the measure of career earnings used to determine a worker's Social Security benefits.[4]

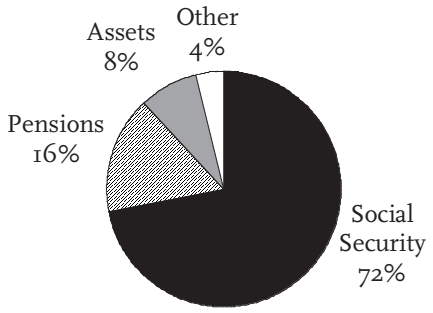
Expanding the Sources of Retirement Income

Most middle and upper income people have a number of sources of retirement income in addition to Social Security. Employer-sponsored pensions are particularly important (see Figure 1). Although pension coverage has shifted toward 401 (k) plans, defined benefit plans still dominate the retirement portfolio of today's retirees and those near retirement. These plans typically replace a portion of the worker's "final earnings," generally the worker's annual earnings during the last three or five years of employment, which tend to be the worker's highest earnings with that employer.

People also hold financial assets in either 401 (k)-type plans or directly. They can use these assets to support themselves in retirement either by living on the returns these assets generate, drawing down the assets, or purchasing an annuity that will guarantee a stream of income for life. The following analysis assumes that people purchase an actuarially fair annuity with their accumulated wealth.

FIGURE 1. EMPLOYER PENSIONS ARE AN IMPORTANT SOURCE OF RETIREMENT INCOME

Non-Earned Retirement Income by Source, Households Aged 65 and Older, Middle Income Quintile, 2002



Source: U.S. Social Security Administration (2005).

Broadening the Concept of Pre-Retirement Earnings

When the focus was Social Security replacement rates alone, it was sensible to use Average Indexed Monthly Earnings as the measure of pre-retirement income. Since this concept of career earnings is used in calculating benefits, it serves as the basis for official numbers on replacement reported by the Social Security Administration. When considering sources beyond Social Security, however, the AIME measure is no longer appropriate as it does not include either wages above the Social Security cap ($90,000 in 2005) or the interest, dividends, and capital gains that households receive on their financial investments. Including these items provides a more comprehensive measure of a household's average income before retirement.

One could also question whether households are really interested in replacing lifetime income or whether they are more interested in replacing the earnings they enjoy immediately prior to retirement. Therefore, the analysis includes an alternative measure of pre-retirement earnings: the average of the highest five out of the last ten years just before retirement. In most cases, such earnings will be higher than average career earnings.

Actual Replacement Rates from Social Security, Pensions, and Financial Assets

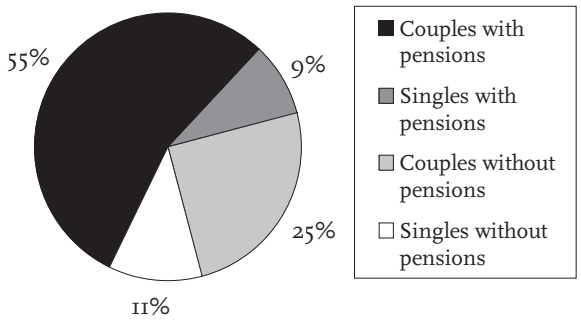
To calculate replacement rates for households, the analysis relies on the Health and Retirement Study (HRS). The HRS is a nationally-representative data set that began in 1992 with about 12,650 individuals from about 7,600 households.[5] This original survey interviewed people age 51-61 and their spouses (regardless of age), and it is re-administered every two years. The HRS contains detailed information on earnings before retirement and on Social Security and pension benefits as well as 401(k) balances and other financial assets, and is thus ideal for this study.

Table 1 reports the median replacement rates for newly retired couples and single individuals using the two definitions of earnings just described. [6] The first is an expanded version of career earnings and the other is the best five out of ten immediately before retirement. In each case, replacement rates are reported with Social Security alone, then adding pensions (including defined benefit plans, 401 (k) plans and Individual Retirement Accounts), and finally adding non-pension financial assets.

The results show the following. First, adding pensions to Social Security produces replacement rates of 63 percent for couples and 70 percent for single people using the career average measure of pre-retirement earnings and 52 percent for couples and 56 percent for singles using the best five out of ten as the denominator. Adding the annuitized value of financial assets outside pensions boost these numbers further. Whether they meet the target levels of replacement (65 percent to 75 percent) depends on the measure of pre-retirement earnings — slightly above using career earnings and slightly below using best five out of the last ten.

Figure 2. Two Thirds of Retiree Households Have Pension Coverage; One Third Does Not

Composition of Households in HRS Analysis, by Household Type and Pension Coverage



Source: Authors' calculations from the *Health and Retirement Study*.

Table 1. Pension Coverage Determines Whether Retirees Are Secure or Struggling

Median Replacement Rates for Couples and Single Individuals with and without Pensions

Replacement income source	Couples		Single individuals	
	Without pensions	With pensions	Without pensions	With pensions
Denominator = AIME Plus Earnings Above the Cap + Returns on Financial Assets				
Social Security[a]	43.0	37.7	46.2	38.0
Social Security + pensions[b]	43.0	63.3	46.2	70.4
Social Security + pensions[b] + financial assets[c]	55.3	73.8	57.6	86.3
Denominator = Inflation Indexed - Top 5 House Household Pre-Retirement Earnings + Returns on Financial Assets				
Social Security	34.4	29.5	32.8	27.8
Social Security + pensions[b]	34.4	51.5	32.8	55.7
Social Security + pensions[b] + financial assets[c]	45.4	60.1	44.4	66.9
Addendum: Percent of retiring population[d]	25	55	11	9

Source: Authors' calculations from the *Health and Retirement Study*.

a. Given the broader definitions of pre-retirement income used in this table, the replacement rates for Social Security are lower than those reported earlier (which used Average Indexed Monthly Earnings).
b. For those with pension coverage, IRA assets are included in defined contribution wealth; for those without pension coverage, IRA assets are classified as part of financial assets.
c. Financial assets are annuitized using a factor of 13.86 for households; 11.27 for single men; and 12.45 for single women.
d. In the case of couples, the 55 percent consists of 15 percent of retirees with a defined contribution plan only, 24 percent with a defined benefit plan only, and 16 percent with both. The 9 percent of retirees who are single and covered by a pension consists of 3 percent with a defined contribution plan only, 4.5 percent with a defined benefit plan only, and 1.5 percent with both.

Second, for those without pensions, replacement rates are very low — even including income from financial assets. They average about 55 percent for both couples and single persons using the career average measure and 45 percent using the best five out of the last ten.

Third, two-thirds of newly retired households have some type of pension coverage and one third do not (see Figure 2).

Conclusion

The central finding that emerges from this analysis is that the majority of households retiring today are in pretty good shape. Regardless of how retirement income and pre-retirement income are defined, households with pensions approximate the 65-75 percent threshold of adequacy, and this group represents about two-thirds of all households. When deciding how sanguine to be about these results, it is important to keep four factors in mind. First, one-third of households does not have pensions and does not fare well. Second, the replacement rates are reported for newly retired workers and will decline over time as inflation erodes the real value of pension income. Third, the calculations assume that people buy an actuarially fair annuity. This assumption produces the maximum income stream, but does not reflect actual behavior. Finally, the current situation represents the "golden age" of retirement income. The landscape is changing for the coming wave of baby boom retirees, who will see lower replacement rates from Social Security and less certain income from employer pensions.

Endnotes

1 Technically, people are interested in smoothing marginal utility, not consumption. To the extent that they get pleasure from leisure in retirement, they can maintain overall utility with lower levels of consumption after they stop working. The enjoyment of leisure may explain what the literature calls the "retirement-consumption puzzle" — namely, the fact that consumption appears to drop as people retire. See Bernheim, Skinner and Weinberg (2001), Banks, Blundell and Tanner (1998), and Hurd and Rohwedder (2003).

2 For example, Palmer (2001) finds that single workers earning $50,000 need to replace 74 percent of their income while couples with the same total income need 76 percent.

3 Munnell and Soto (2005b).

4 The AIME is determined in two steps. First, the worker's annual taxable earnings after age 22 (or 1950) are updated, or indexed, to reflect the general wage level at age 60. Second, Social Security takes the highest 35 years of wage-indexed earnings between ages 22 and 62 and divides that total by the number of months in that period.

5 The HRS is conducted by the Institute for Social Research (ISR) at the University of Michigan and is made possible by funding from the National Institute on Aging. More information is available at the ISR website: http://hrsonline.isr.umich.edu/. See Juster and Suzman (1995) for a detailed overview of the survey.

6 For a full description of the findings of this analysis, see Munnell and Soto (2005a).

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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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