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THE HOUSE AND LIVING STANDARDS IN RETIREMENT

BY ALICIA H. MUNNELL AND MAURICIO SOTO*

Introduction

Do today's retirees have sufficient income to meet their needs? This brief is the third 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. The second one added employer-sponsored pensions and other financial assets to provide a more comprehensive picture of replacement rates. This brief builds on the previous findings by considering how the addition of housing equity affects replacement rates.

portion of their income for retirement and, in fact, can draw on their accumulated reserves. In addition to contributing to 401(k) plans, 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.

The focus of this study is to determine what replacement rates people are actually receiving.

What Is a Replacement Rate?

A replacement rate is defined as the ratio of post-retirement income to pre-retirement income. Typically people need between 65 and 75 percent of their pre-retirement income to maintain their lifestyle once they stop working.¹ 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

A Recap of Social Security Replacement Rates

The first brief in this series reported Social Security replacement rates for newly retired married couples and single person households.² The key finding was that Social Security benefits on average replaced 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 in determining a worker's Social Security benefits.³

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A Recap of Replacement Rates with Pensions and Non-Pension Financial Assets

The second brief in this series incorporated pensions and non-pension financial assets in the replacement rate calculations. It reported results for two definitions of pre-retirement income: 1) an expanded version of AIME to incorporate household earnings above the Social Security cap and returns from financial assets; and 2) an average of the five years of a household's highest income in the last 10 years before retirement. Adding pensions and the annuitized value of other financial assets to Social Security produced the following results:

- For the two-thirds of households with pensions, replacement rates were 74 percent for couples and 86 percent for single people using the career average measure of pre-retirement earnings and 60 percent for couples and 67 percent for singles using the best five out of ten as the denominator.
- For the one third without pensions, replacement rates averaged about 56 percent for both couples and single persons using the career average measure and 45 percent using the best five out of the last ten.

Including the House as a Source of Retirement Income

The replacement rates calculated up to this point have excluded any recognition of housing. Yet for most families, their house is their largest non-pension asset (see Table 1). The extent to which the house or some part thereof should be included in replacement rate calculations has been the source of considerable controversy. Some authors have thrown up their hands and presented numbers including zero, 50 percent, or 100 percent of home equity as contributing to earnings replacement.⁴ The implication is that these options are equally good, and the choice rests with the reader.

This brief argues that housing consists of two components — the "imputed rent" that will be consumed over the life of the household and the "residual value." The first component, imputed rent, is the amount that the owner would have to pay to rent an equivalent dwelling and is treated as an amount that

TABLE 1. WEALTH HOLDINGS OF A TYPICAL HOUSEHOLD^a AT RETIREMENT, HRS 2002 DOLLARS

Source	Amount	Total
Primary house	\$81,398	16.7 %
Business assets	4,092	0.8
Financial assets	29,451	6.0
Defined contribution ^b	30,222	6.2
Defined benefit	88,180	18.0
Social Security	234,636	48.0
Other non-financial assets	20,730	4.2
Total	488,709	100.0

Source: Authors' calculations based on the Health and Retirement Study.

a. The "typical" household refers to the mean of the middle 20 percent of the sample.

b. IRA assets are included in defined contribution wealth.

the homeowners pay to themselves. The monthly value of imputed rent must be incorporated in the numerator of the replacement rate, because it will be received by the household in retirement. (As discussed below, imputed rent should also be included in the denominator since the household was receiving imputed rent as part of its income before retirement.)

How to treat the second component — the residual value or the amount that the household could access through a reverse mortgage — is more ambiguous. The argument against counting the residual value as available for consumption is that today reverse mortgages are in their infancy and most families do not tap their home equity in retirement. On the other hand, with increasing pressure on retirement programs, it may become more and more difficult not to consider the residual value of housing equity as a source of retirement income. Therefore, on practical grounds, it may be desirable to include in the numerator of replacement rate calculations the annuitized residual value less any outstanding mortgage.

Turning Housing Concepts into Numbers

The challenge is to quantify the two conceptual components of housing equity. This requires determining rents as a percent of home prices and the portion of imputed rent that will be received and consumed in retirement. The starting point is to establish the value of the house. Here an analogy to pricing a stock is useful. In equity valuation, the future flow of dividends determines the current price of the stock. Similarly, the current value of a house should equal the present discounted value of the future rents. The present value of future rents can then be separated into the imputed rent that will be consumed when the household is alive and the rents that will be available after the death of the last member of the household or the "residual value."

As shown in Table 2, the results are very sensitive to the assumption about the rate of appreciation in home prices and rents and the rate used to discount future rents back to the present. The greater the rate of appreciation, the greater the share of rents that will be received in the future and the smaller the portion of rents that will be consumed by the household. On the other hand, the higher the discount rate, the smaller the value of future rents in present discounted terms, and the greater the portion that will be consumed by the household. The following analysis assumes that imputed rent consumed over the life of the household equals 70 percent, which is based on a 6 percent discount rate and a 1 percent appreciation rate (Table 2).

TABLE 2. IMPUTED RENT CONSUMED IN RETIREMENT AS A PERCENT OF TOTAL HOUSE VALUE

Discount Rate	Appreciation Rate		
	0.5 %	1.0 %	1.5 %
3 %	45.3 %	38.3 %	30.3 %
5	65.9	61.5	56.6
6	73.0	69.5	65.6
7	78.6	75.8	72.7
9	86.4	84.7	82.7

Source: Authors' estimates.

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. When the focus was Social Security, pensions, and non-pension financial assets, it was necessary to include wages above the Social Security cap of \$90,000 and the interest, dividends and capital gains that households receive on their financial investments. For consistency, when considering the house, the value of "imputed rent" enjoyed before retirement belongs in the denominator of the replacement rate calculation.

As before, one could also question whether households are really interested in replacing lifetime income or whether they are more interested in replacing the income they enjoy immediately prior to retirement. Therefore, the analysis includes the highest five out of the last ten years just before retirement as well as the lifetime measure.

Replacement Rates Including Imputed Rent

Table 3 presents replacement rates as the definition of retirement income is expanded to include imputed rent and finally the annuitized value of residual owner-occupied housing less mortgage debt. In the first case, pre-retirement income is defined in terms of AIME including earnings above the Social Security maximum, returns on financial assets, and imputed rent. In the second case, pre-retirement earnings is equal to the highest five of the last ten years prior to retirement indexed by prices to the year of retirement. The bottom line is that once imputed rent is added to the numerator and denominator, median replacement rates for couples and singles with pensions meet or exceed the 65-75 percent test of adequate replacement, depending on the definition of pre-retirement income. For those households without pensions, the median replacement rates fall below the adequacy threshold — the shortfall is modest when pre-retirement earnings are defined in terms of AIME and more substantial when defined as the best out of the last ten.

TABLE 3. MEDIAN REPLACEMENT RATES INCLUDING HOUSING FOR COUPLES AND SINGLES BY PENSION COVERAGE

Replacement income source ^a	Couples		Singles	
	Without pensions	With pensions	Without pensions	With pensions
Denominator = AIME plus earnings above the cap + Returns on Financial Assets + Imputed Rent				
Social Security + Pensions ^b + Financial Assets ^c	48.9 %	66.8 %	48.8 %	71.4 %
Social Security + Pensions ^b + Financial Assets ^c + Imputed Rent	60.2	76.2	62.2	87.9
Social Security + Pensions ^b + Financial Assets ^c + Imputed Rent + Residual Housing Wealth	62.3	78.5	63.3	89.3
Denominator = CPI Indexed - Top 5 Households Pre-Retirement Earnings + Returns on Financial Assets + Imputed Rent				
Social Security + Pensions ^b + Financial Assets ^c	41.8	55.2	39.1	59.1
Social Security + Pensions ^b + Financial Assets ^c + Imputed Rent	50.2	63.1	50.8	70.0
Social Security + Pensions ^b + Financial Assets ^c + Imputed Rent + Residual Housing Wealth	52.1	64.9	52.8	72.1
Addendum: Percent of retiring population	25	55	11	9

Source: Authors' calculations based on the Health and Retirement Study.

a. Assets are annuitized using a factor of 13.86 for households; 11.27 for single men; and 12.45 for single women.

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. The real return on financial assets is assumed to be 2.6 percent.

Conclusion

The house is a major asset for most households. And the monthly value of imputed rent produced by the house that will be consumed over the life of the household should be incorporated in the numerator of the replacement rate since it will be used to support consumption in retirement. For consistency, imputed rent should also be included in the denominator since the household was receiving imputed rent as part of its income before retirement. Making this adjustment produces replacement rates that are slightly higher than previously reported. The results are not startlingly different because the same number is entered into both the numerator and denominator of the replacement rate. Adding the annuitized payments from the "residual value" — the amount that could be accessed from a reverse mortgage — raises

replacement rates another few percentage points. The central finding that emerges from this series of briefs exploring actual replacement rates that people have as they enter retirement is that regardless of how retirement income and pre-retirement income are defined, households with pensions are in good shape, and this group represents about two-thirds of all households. But one-third of households do not have pensions and do not fare well, even after taking housing into consideration. Moreover, 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 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.

2 Munnell and Soto (2005b).

3 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.

4 The Congressional Budget Office (1993) includes housing wealth in the set of assets that can be used to finance retirement. Moore and Mitchell (1997) also include housing wealth with other wealth. On the other hand, Bernheim (1992) excludes housing wealth in considering whether the baby boom generation is preparing adequately for retirement. Those letting the reader decide include Engen, Gale and Uccello (1999) who offer zero, 50 percent, and 100 percent of housing equity as options and Gustman and Steinmeier (1999) who conduct their analyses using zero and 100 percent of housing equity.

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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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