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# WORKING WIVES REDUCE SOCIAL SECURITY REPLACEMENT RATES

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## Introduction

The general perception is that the Social Security program expanded significantly in the 1970s and today benefits are much higher relative to pre-retirement earnings than they were prior to that expansion. Indeed, the *Social Security Trustees Report* shows that the replacement rate — benefits as a percent of pre-retirement earnings — for the average worker rose from about 30 percent in 1970 to about 40 percent in 1980, where it remains today.

Most people, however, retire as married couples, sharing and replacing a common household income. Thus, to understand the role of Social Security in the nation's retirement income system, it is crucial to consider the replacement rate of couples — as opposed to single individuals — and how that rate has changed over time. Indeed, the increasing labor force participation of married women has led to a significant reduction in the replacement rates for couples. Combining the rising replacement rates for individual workers with the declining replacement rates for couples shows the 1970s expansion of Social Security to be less dramatic than generally thought.

Moreover, the rising labor force participation of women will continue to reduce couples' replacement rates for the next twenty years. This downward pressure reinforces other factors — the extension of the Normal Retirement Age, increasing deductions for Medicare premiums, and greater taxation of benefits under the personal income tax — that will lead to a declining role for Social Security in the provision of retirement income.[1]

## Social Security Replacement Rates for Individual Workers

Before exploring replacement rates for couples, it is important to understand how Social Security constructs hypothetical replacement rates for individual workers. The *Social Security Trustees Report* presents projected benefit amounts and replacement rates under current law for workers with low, medium, and high earnings.[2] The replacement rates are derived from hypothetical earnings histories. The hypothetical worker is assumed to enter the labor force at age 21, remain constantly employed until age 65, and earn the average wage, or some percentage thereof, throughout his working career.[3] The average wage is measured by the "Average Wage Index."[4]

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The hypothetical earnings histories are then used to calculate benefits. Calculating benefits at the Normal Retirement Age involves three steps.[5] First, the worker's previous earnings are restated in terms of today's wages by indexing past earnings to wage growth. (Since the hypothetical average worker is assumed to earn the "Average Wage Index" — the series used to restate previous earnings — earnings at retirement are equivalent to AWI when the worker is 64.) Second, indexed earnings for the highest 35 years are then averaged and divided by 12 to calculate Average Indexed Monthly Earnings (AIME). Finally, the benefit is the sum of three separate percentages that are applied to portions of the AIME.[6] By design, this approach provides higher replacement rates for lower earners. The portions of the AIME depend on the year in which a person reaches age 62. Specifically, for workers first becoming eligible for benefits in 2006, their benefit was the sum of:

- 90 percent of the worker's first $656 of AIME, plus
- 32 percent of AIME between $656 and $3,955, plus
- 15 percent of any AIME in excess of $3,955.[7]

The replacement rate is then the ratio of the worker's benefit to his career average indexed earnings.[8] Figure 1 shows both historical and projected replacement rates for the medium earner retiring at age 65. The replacement rate hovered around 30 percent — that is, benefits were equal to 30 percent of earnings — from 1950 to 1970 and then rose during

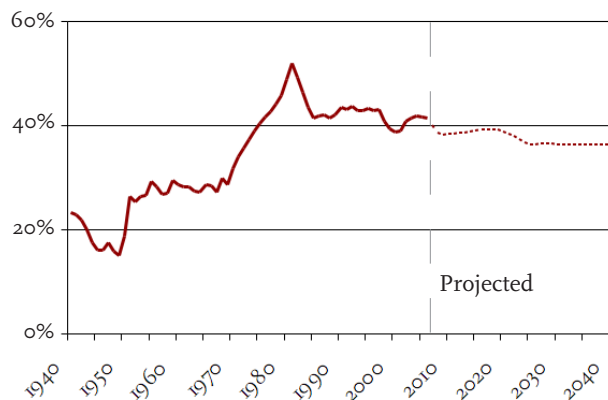*Source*: U.S. Social Security Administration (2007).

the 1970s as a result of 1972 legislation (overshooting a bit due to a technical flaw) to about 40 percent beginning in 1985. In 2007, the replacement rate for the benchmark medium earner was 41.7 percent. For workers who continue to retire at age 65, this replacement rate is slated to decline as the Normal Retirement Age increases from 65 to 67, and benefits claimed early are actuarially reduced.

# Replacement Rates for Couples

In the old days, when most women did not work, it was very easy to calculate the replacement rate for couples. The wife who claimed at age 65 was entitled to a benefit equal to 50 percent of that of her husband's, so if the replacement rate for the typical worker was 40 percent, the replacement rate for the couple would be 60 percent.[9] As women went to work, however, the calculation became less obvious, since women were entitled to the larger of the spouse's benefit or the benefit they could earn on their own. When women's earnings were modest, their wages increased the couple's pre-retirement income, but their individual earned benefit could fall below the 50 percent spouse's benefit and therefore did not increase the total amount the couple received from Social Security. The net effect would be to reduce the replacement rate on the couple's combined income to something less than the 60 percent cited above.

An example that shows the effect of women's increased work on replacement rates might help to clarify this point. Consider four couples who retired at the Normal Retirement Age in 2006, where the husband made $4,150 a month his entire life.[10] The husband would be entitled to a Social Security benefit of $1,650 and the spousal benefit — 50 percent of the husband's — would equal $825 (see Table 1 on the next page). In Couple A, the wife did not work, so the couple received $1,650 plus the spousal benefit of $825. These benefits divided by the couple's total income of $4,150 produced a replacement rate of 59.6 percent. In Couple B, the wife worked and earned an amount equal to 25 percent of her husband's earnings. But the benefit produced by her earnings was less than the spouse's benefit, so again the couple receives $1,650 and $825 in benefits, but now their pre-retirement earnings are $5,175. With identical benefits and higher earnings, the replacement rate

**Table 1. An Example of the Effect of Wife's Earnings on Couple's Replacement Rate, 2006**

| Couple | Earnings | | | Benefits | | | Couple's Replacement Rate |
|--------|----------|------|----------------------------|----------|-------|-------------------|---------------------------|
|        | Husband  | Wife | Ratio wife to husband      | Husband  | Wife  | Spousal benefit   |                           |
| A      | $4,150   | $0   | 0.0%                       | $1,650   | $0    | $825              | 59.6%                     |
| B      | 4,150    | 1,025| 25.0                       | 1,650    | 725   | 825               | 47.8                      |
| C      | 4,150    | 2,075| 50.0                       | 1,650    | 1,050 | 825               | 43.4                      |
| D      | 4,150    | 4,150| 100.0                      | 1,650    | 1,650 | 825               | 39.8                      |

*Source*: Authors' calculations.

falls to 47.8 percent. In Couple C, the wife earns an amount equal to 50 percent of her husband's earnings, but her benefits only slightly exceed the spousal benefit she would have gotten had she not worked at all. Adding $2,075 to the couple's earnings and little to benefits reduces the couple's replacement rate to 43.4 percent. Finally, in Couple D, the wife earns the same amount as her husband (wife-to-husband ratio is 100 percent) and both husband and wife receive a benefit of $1,650. The couple's replacement rate ends up at 39.8 percent — the same as for a single individual with $4,150 of career average monthly earnings.[11]

The example, which shows the impact on replacement rates of increasing the ratio of the wife's to the husband's earnings at one moment in time, mirrors the increasing ratio of wife's to husband's earnings that has occurred over time (see Figure 2). In the early 1960s, for the average couple, the wife's earnings

**Figure 2. Ratio of Wife's to Husband's Earnings for the Average Couple, 1961-2005**



*Source*: Authors' calculations from the U.S. Census Bureau, *Current Population Survey* (CPS), 1962-2006.
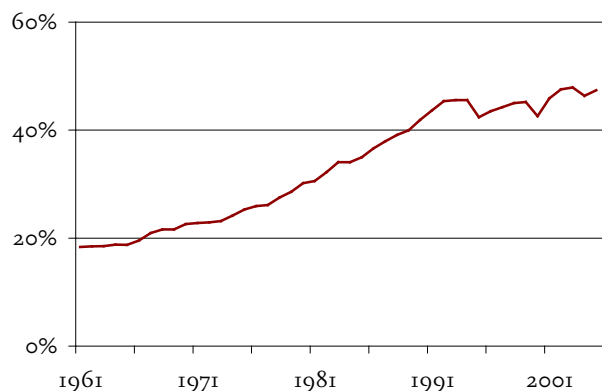
amounted to nearly 20 percent of her husband's. By 2005, that contribution had increased to 47 percent. This increase would be expected to reduce replacement rates over time as wives add substantially more to the couple's pre-retirement earnings than they do to their Social Security benefits. The question is how much wives' increased labor force participation has reduced couples' Social Security replacement rates.

# Replacement Rate Calculations

To see how the increasing share of household earnings contributed by married women affected the couple's replacement rates, we follow the approach used by the *Social Security Trustees Report* to calculate replacement rates for the average worker. This exercise requires deriving earnings histories for the average husband and wife and using these earnings histories individually to calculate the household's total benefits.

The data come from the 1962 to 2006 March Supplement to the *Current Population Survey*. The first step is to calculate the average earnings of husbands (total husbands' earnings divided by the number of husbands) for each year. The next step is to estimate the average ratio of the wife's earnings to the husband's. This is the ratio of all wives' earnings to all husbands' earnings. Since this ratio has increased steadily over time, it would exaggerate the woman's contribution to the household's lifetime earnings to use the average wife's ratio in the year the couple was retiring. Instead, for each year, the population of couples was broken down into seven age groups. The average wife-to-husband earnings ratio was calculated for each age group, and a "cohort-adjusted" ratio was

TABLE 2. AN EXAMPLE OF THE COHORT ADJUSTMENT FOR THE WIFE-TO-HUSBAND EARNINGS RATIO

| Age | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65 in 2006 |
|---|---|---|---|---|---|---|---|---|
| Years | 1971-75 | 1976-80 | 1981-85 | 1986-90 | 1991-95 | 1996-00 | 2001-05 | Cohort-adjusted |
| Wife-to-husband earnings ratio | 19% | 25% | 31% | 36% | 41% | 39% | 44% | 33% |

*Source*: Authors' calculations from the 1973-2006 CPS.

set equal to the average over the age groups. That is, as shown in Table 2, the wife-to-husband ratio for a couple in their early 60s was 44 percent, but the "cohort adjusted" ratio of a couple retiring in 2006 was 33 percent — the average for the different age spans over the couple's life. The 33 percent is likely a more accurate depiction of the wife's lifetime contri-

FIGURE 3. ESTIMATED REPLACEMENT RATE FOR THE AVERAGE COUPLE CLAIMING AT AGE 65, 1961-2025
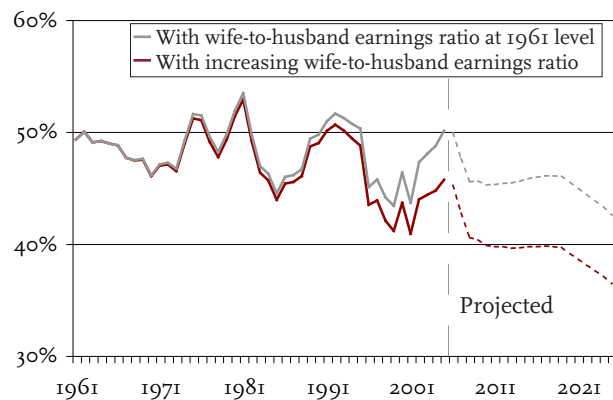


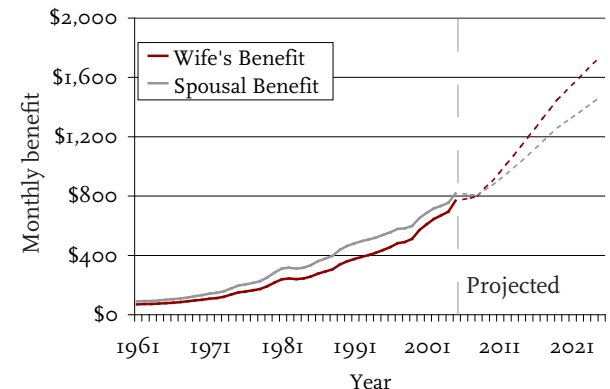*Source*: Authors' calculations from the 1962-2006 CPS.

bution.[12]

To approximate Social Security's replacement rate calculation, the benefit calculation here treats the average husband's income at retirement as the steady income that he made over the course of his life. As an extension to this assumption, we treat the cohort adjusted wife-to-husband ratio of income as a constant over the course of the lifetime as well. These two assumptions produce a set of earning histories for the husband and wife, which can be entered into the benefit formula to determine the benefit for each and the total benefit for the couple.

Figure 3 shows the replacement rates for average married couples claiming benefits between 1961 and 2025. Two lines are shown. The first uses actual cohort-adjusted ratios. The second assumes that the

wife-to-husband ratio of income remains at the 1961 level. The difference between these lines corresponds to the drop in the couple's replacement rate due to the increased contributions of wives to the household income. The reason for the decline is that the wife's increase in income does not increase the couple's benefit. Over the last forty years, the replacement rate for the average couple has declined from 50 percent to 45 percent — about 4 percentage points lower than it would have been had the wife-to-husband's earnings ratio remained at the 1961 level.

Moreover, the decline is not over. As women spend increasingly large portions of their lives in the labor force, the "cohort-adjusted" ratio of wife's-to-husband's earnings is projected to increase from 33 percent today to 45 percent in 2025, where it most likely will level off.[13] As this ratio increases, the replacement rate for the average couple will continue to decline. By 2025, the drop in the household replacement rate will amount to 6 percentage points. The couple's replacement rate, however, will decline at a slower pace than in the past, because the average wife's benefit will exceed the spousal benefit, so additional work will increase the wife's benefit (see Figure 4).

FIGURE 4. ESTIMATED AND PROJECTED WIFE'S AND SPOUSAL BENEFIT FOR THE AVERAGE COUPLE, 1961-2025



*Source*: Authors' calculations.

FIGURE 5. REPLACEMENT RATES FOR THE AVERAGE
HOUSEHOLD CLAIMING AT AGE 65, 1979-2025
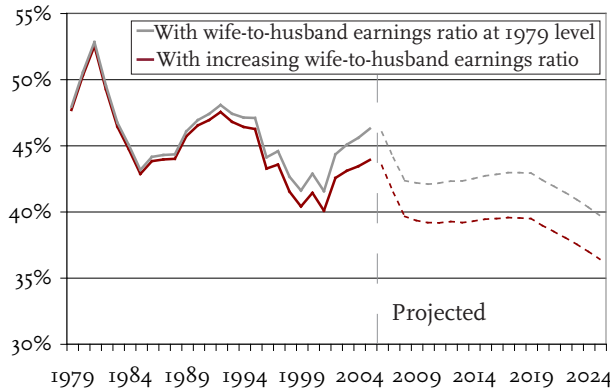
*Source*: Authors' calculations.

Finally, it is possible to combine the information on individuals' and couples' benefits to produce a measure of average household benefits. This calculation involves weighting the replacement rate for the medium earner by the percent of total households retiring as individuals — approximately 45 percent — and weighting the replacement rate for the average couple by the percent of households retiring as couples — approximately 55 percent.[14] Figure 5 shows two seperate calculations. One assumes that the ratio of wife's to husband's earnings remains at the 1979 level; the other assumes that the ratio increases as described earlier. (The calculation begins in 1979 so that the law remains consistent.) The results show that the increasing ratio of wife's to husband's earnings has offset a significant part of the expansion of Social Security benefits that occurred during the 1970s.

# Conclusion

The increasing labor force participation of women has led to a marked decrease in the amount of pre-retirement income Social Security replaces. This decline offset about 40 percent of the expansion of benefits that occurred between 1970 and 1980. Moreover, the increasing labor force participation of women will continue to put downward pressure on Social Security replacement rates for the next twenty years.

The drop in replacement rates for couples is just one more factor that will lead to a declining role for Social Security. Others include the increase in the Normal Retirement Age from 65 to 67, which is equivalent to an across-the-board cut; the sharp increase in deductions for Medicare Part B and D premiums; and the increased taxation of benefits under the personal income tax, as the exemption amounts are not indexed to inflation.

The declining role for Social Security coincides with a number of other developments that will make providing for a secure retirement more of a challenge in the future than it has been in the past. People are living longer and still retiring in their early 60s. They will have to rely increasingly on rather modest 401(k) balances. They have virtually no financial saving outside of their employer-sponsored plans. And they will face soaring health care costs.

# Endnotes

1  Munnell (2003).

2  A fourth worker represents someone who has earned the maximum taxable earnings throughout his career.  This hypothetical worker is assumed to enter the labor force at age 22.

3  The hypothetical earnings histories result in career average earnings equal to the national average wage, or some percentage thereof, in the year prior to retirement.  Under the more recent methodology, the shape of the earnings profile has changed to make the pattern more realistic.  That is, as workers age, their earnings tend to rise in line with their increased experience and ability and, at around age 50, earnings tend to decline as skills erode or workers reduce their hours.  But for calculating hypothetical replacement rates the pattern of earnings is not important.  The evolution of earnings, however, is quite important for the analysis of individual accounts and the "money's worth" of Social Security benefits (as contributions made early on are significantly more important than those made later in life).  As these issues gained prominence, the Social Security Administration created earnings profiles that more accurately defined earnings across the work span. Scaled factors determine the shape of the hypothetical wage profiles.  See Clingman and Nichols (2004).

4  Interestingly, the "average wage index" (AWI) is *not* calculated by dividing annual total wages by the number of workers.  Rather, the benchmark is the average of all wages reported to SSA in the first quarter, which are all wages up to the annual taxable maximum earnings, multiplied by 4 for the period between 1973 and 1977.  That is, for the period 1973-77, the AWI is simply the sum of taxable earnings reported to the Social Security Administration during the first quarter of the year divided by the number of taxpaying workers and multiplied by four to get an annual figure.  The fact that it did not include earnings above the taxable maximum was not viewed as particularly important since few workers earned over the maximum taxable earnings in the first quarter.  In the years after 1977, the AWI is adjusted each year in line with the growth of all earnings, as reported on the IRS W-2 forms.  See Donkar (1981).

5  For additional details on calculating Social Security benefits, see U.S. Social Security Administration (2006a).

6  Benefits are adjusted for inflation after age 62.  See U.S. Social Security Administration (2006a).

7  For more information on the "bend points" used in calculating AIME, see U.S. Social Security Administration (2006b).  The basic Social Security benefit, known as the Primary Insurance Amount, is continually recalculated so long as the individual remains employed.  It is indexed to prices from age 62.  The final benefit is  reduced for claiming before the Normal Retirement Age and increased for claiming after it.

8  The medium hypothetical worker earns the average wage throughout his working career.  His career average earnings, indexed by the growth of wages to the year prior to retirement, equal the national average wage in the year prior to retirement.  For low and high hypothetical workers, the career average earnings are a percentage of the national average wage in the year prior to retirement.

9  Technically, the wife claiming at the Normal Retirement Age is entitled to a benefit equal to 50 percent of her husband's Primary Insurance Amount.  If she claims before the Normal Retirement Age, her percentage will be reduced.

10  This example illustrates the effects of the wife's earnings on the couple's replacement rate.  There are two factors that affect replacement rates.  The first factor is the relative erosion of the spousal benefit. From Couple A to Couple B in Table 1, for example, the wife's earnings do not increase the couple's benefit but do increase the couple's career average earnings — the denominator in the replacement rate. The erosion of the spousal benefit continues until the wife's earnings are about one third of the husband's earnings.  At this point, the wife's own benefit is equal to the spousal benefit.  The second factor is the progressivity of the benefit formula.  The effects from this factor are evident in the bottom two rows of the table.  From C to D, for example, the woman is claiming her own benefit and the spousal benefit is no longer relevant.  The increase in earnings, however, puts some of her income above the highest bend point, over which each additional dollar is replaced at only 15 percent.  From B to C, both factors are at work since the spousal benefit is completely eroded and her additional income is replaced at only the 32 percent level.

11 This amount is assumed to be the career average earnings for married males retiring in 2006. The average is calculated from the *Current Population Survey* by taking the total earnings of all married men and dividing by the total number of married men in 2005.

12 Since the CPS only goes back to 1961, the female contribution to the household income was assumed to be constant at the 1961 level for years before 1961.

13 The projections assume that the wife-to-husband's career-earnings ratios for future cohorts will eventually converge to the 2005 cross section of wife-to-husband's ratios by age. This assumption implies that the wife-to-husband's earning ratios will converge to about 45 percent (see Figures 2 and 4).

14 Of the population age 60-65, roughly 70 percent are married and 30 percent are single. But, for this exercise, the relevant figure is the distribution of households, not individuals.

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