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HOW DOES WOMEN WORKING AFFECT SOCIAL SECURITY REPLACEMENT RATES?

BY APRIL YANYUAN WU, NADIA S. KARAMCHEVA, ALICIA H. MUNNELL, AND PATRICK PURCELL*

Introduction

The *Social Security Trustees Report* states that replacement rates for the medium earner rose from about 30 percent in the 1970s to 40 percent in the 1980s, where they remain today. However, the focus on individual earners is often misleading as many people work and retire as part of a married couple, making the household a more appropriate unit of analysis. And replacement rates for households depend on more than Social Security provisions; they also depend on the labor force activity of each spouse. These dimensions have been changing dramatically with the increased labor force participation of women.

This *brief* reports on a recent study that explores how the changing lives of women affect Social Security replacement rates for households across seven cohorts: Depression Era 1 (born 1931-35), Depression Era 2 (1936-41), War Baby (1942-47), Early Baby Boomers (1948-53), Middle Baby Boomers (1954-59), Late Baby Boomers (1960-65), and Generation Xers (1966-75). The analysis uses *Modeling Income in the Near Term* (MINT), a microsimulation model developed by the Social Security Administration (SSA).

The discussion proceeds as follows. The first section describes how Social Security benefits and replacement rates are determined. The second sec-

tion highlights the changing work force activity of women. The third section summarizes the trends in replacement rates across cohorts, focusing on married households. The fourth section decomposes the decline in replacement rates over the seven cohorts to compare the changing role of women with other factors, such as claiming behavior. The final section concludes that the changing role of women has led to a marked decline in replacement rates that will continue for future retirees.

Social Security Benefits

Before exploring how women's labor force activity affects replacement rates, it helps to understand how Social Security benefits are determined. A retired worker's benefit is based on an individual's earnings history and a progressive benefit formula that replaces a higher share of pre-retirement income for lower income workers.[1] A worker's base benefit is calculated at Social Security's Full Retirement Age (FRA), which is currently 66, and the base amount is then reduced for earlier retirement or increased for later retirement.

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In addition to the worker's benefit, Social Security provides dependent benefits to qualified spouses of retired workers. While these benefits are not gender based, they typically go to women because women tend to work less and earn less than men. Thus, even if a wife has no work history, she is entitled to two types of benefits: 1) a spouse's benefit equal to 50 percent of her husband's base benefit (unadjusted for early or late retirement); and 2) a survivor's benefit equal to 100 percent of her husband's actual benefit (base benefit adjusted for early or late retirement).[2] If a woman is eligible to receive a worker benefit based on her own earnings history that exceeds the spouse's or survivor's benefit, she will receive the larger amount. If her worker benefit is lower, then she is "topped up" to the level of the spouse's or survivor's benefit.

When most women did not work, it was straightforward to calculate replacement rates. The wife who claimed at age 65 was entitled to a benefit equal to 50 percent 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. As women went to work, they increased household earnings more than they increased Social Security benefits, so replacement rates for married couples declined.

An example that shows the effect of women's increased work on replacement rates might help to clarify this point.[3] Consider four couples of the same age who retired at the FRA in 2013, where the husband's career-average earnings were $4,775 a month. The husband would be entitled to a Social Security benefit of $1,910 and the spousal benefit – 50 percent of the husband's – would equal $955 (see Table 1). In Couple A, the wife did not work, so the couple received $1,910 plus the spousal benefit of $955. These benefits divided by the couple's total income of $4,775 produced a replacement rate of 60 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 $1,910 and $955 in benefits, but now their pre-retirement earnings are $5,969. With identical benefits and higher earnings, the replacement rate falls to 45.6 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 that she would have gotten had she not worked at all. Adding $2,387 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 $1,910. The couple's replacement rate ends up at 40 percent — the same as for a single individual with $4,775 of career average monthly earnings.

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 potential effect of increasing the ratio of the wife's to the husband's earnings *over time*.

The Changing Work Patterns of Women

The data for this study come from the MINT model, which links individuals' demographic information and marital histories from the *Survey of Income and Program Participation* (SIPP) with their earnings and benefit histories from SSA administrative data. Based on these data, MINT estimates each retiree's income from Social Security benefits, pensions, assets, and earnings (for working beneficiaries). MINT can be

TABLE 1. AN EXAMPLE OF THE EFFECT OF WIFE'S EARNINGS ON COUPLE'S REPLACEMENT RATE, 2013

Couple	Earnings			Benefits			Couple's replacement rate
	Husband	Wife	Ratio: wife to husband	Husband	Wife	Spousal benefit	
A	$4,775	$0	0.0 %	$1,910	$0	$955	60.0 %
B	$4,775	$1,194	25.0	$1,910	$813	$142	45.6
C	$4,775	$2,387	50.0	$1,910	$1,195	$0	43.4
D	$4,775	$4,775	100.0	$1,910	$1,910	$0	40.0

Source: Authors' calculations.

used to estimate benefits for households that are already retired and to project benefits for those that have not yet retired.[4]

Data from MINT show how women's economic lives have changed across birth cohorts. First, women's labor force participation has risen dramatically (see Figure 1). For women of Generation X, 73 percent were in the labor force at age 25-34, more than twice the rate of women born in the early 1930s. This increase in labor force participation has occurred mostly among married women. As evident in the figure, labor force participation rates have now leveled off.
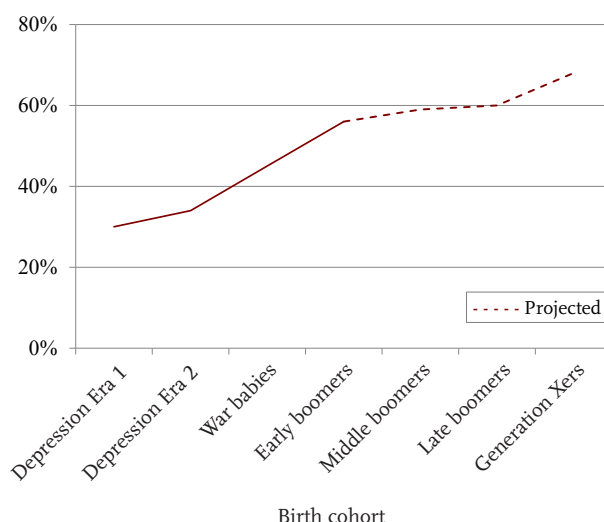
FIGURE 1. LABOR FORCE PARTICIPATION OF WOMEN AGES 25-34, BY BIRTH COHORT AND MARITAL STATUS
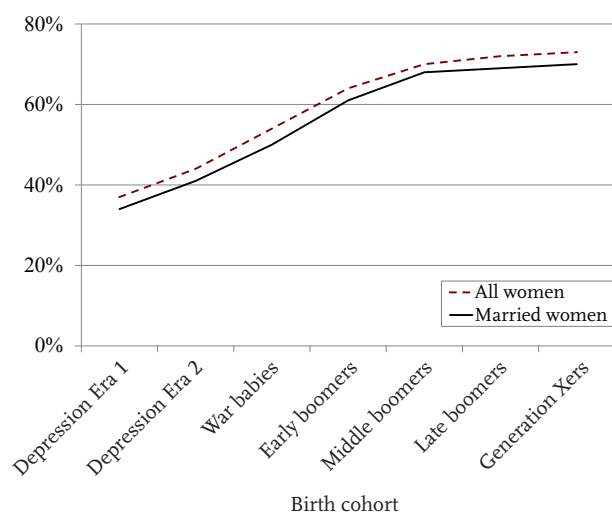
Source: Wu et al. (2013).

Second, women's wages have increased, a trend evident in the rising ratio of the wife's to husband's lifetime earnings by birth cohort. Generation X wives are projected to earn about 68 percent of their husbands' wage, compared to 30 percent for wives born in the early 1930s (see Figure 2). As more women enter the labor force and their earnings increase relative to their husbands' earnings, a larger percentage of women qualify for worker-only benefits and a smaller percentage receive only spousal or widows' benefits.

FIGURE 2. MEDIAN RATIO OF WIFE'S TO HUSBAND'S LIFETIME EARNINGS, BY BIRTH COHORT

Note: Lifetime earnings are measured using Social Security's average indexed monthly earnings.
Source: Wu et al. (2013).

The question is the extent to which the increased labor force participation and rising wages of women have affected Social Security replacement rates across cohorts.

Replacement Rates Across Cohorts

Replacement rates are estimated for each cohort using MINT (see Table 2 on the next page). Since MINT can project rates for cohorts that are not yet retired, replacement rates are available for all birth cohorts in the analysis.[5] The results discussed below include all households and, separately, married households broken down by single-earner and dual-earner couples. A single-earner couple is one in which only one spouse works long enough to qualify for Social Security worker benefits.

Three conclusions emerge from these numbers. First, starting with the four oldest cohorts, who have generally already retired,[6] replacement rates have

TABLE 2. MEDIAN REPLACEMENT RATES BY BIRTH COHORT

Household type	Actuals				Projections		
	Depression Era 1 (1931-35)	Depression Era 2 (1936-41)	War Babies (1942-47)	Early Boomers (1948-53)	Middle Boomers (1954-59)	Late Boomers (1960-65)	Generation Xers (1966-75)
All households	50	47	45	45	44	39	39
Married	47	45	42	42	41	37	37
Single earner	53	54	54	54	48	39	38
Dual earner	45	43	41	41	40	36	37

Note: Single-earner households are defined as those in which only one spouse qualifies for benefits based on their own earnings history. Dual-earner households are defined as those in which both spouses qualify for benefits based on their own earnings history.
Source: Wu et al. (2013).

declined for all households – from 50 percent to 45 percent – and for married households – from 47 percent to 42 percent. As expected, the decline for married households is driven by dual-earner couples, reflecting the growing labor force activity of women.

Second, projections from MINT indicate that the replacement rate will continue to decline for future retirees; for all households, the rate drops from 45 percent for the Early Boomers to 39 percent for Generation Xers.

Third, and surprisingly, MINT projects that replacement rates among younger cohorts will decline more for single-earner couples than dual-earner couples. This result is primarily driven by projected changes in the nature of single-earner households. The percent of these households in which wives receive benefits based solely on their husband's earnings record is projected to drop sharply for the Late Boomers and Generation Xers, while the share of households in which husbands receive benefits based on their wife's work history will increase. This latter

type of household tends to have lower replacement rates, because a husband who is not eligible for Social Security benefits based on his own working history usually has worked more and earned more than a non-eligible wife. As a result, a non-eligible husband ends up contributing more to the denominator of the household replacement rate.

For both the older and younger cohorts, the decline in replacement rates occurs across all income groups, but is a bit more pronounced in the highest income tercile (see Table 3). This pattern reflects the influx of highly educated women into the workforce among dual-earner couples.

What Share of the Decline Is Due to Women?

In addition to women's labor force activity, several other factors, such as marital status, other demographics, and claiming behavior, could affect trends

TABLE 3. REPLACEMENT RATES FOR MARRIED COUPLES BY HUSBAND'S EARNINGS TERCILE AND BIRTH COHORT

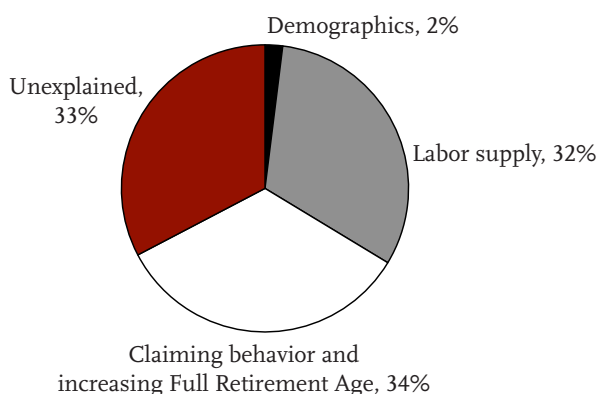| Husband's earnings	Actuals				Projections		
	Depression Era 1 (1931-35)	Depression Era 2 (1936-41)	War Baby (1942-47)	Early Boomers (1948-53)	Middle Boomers (1954-59)	Late Boomers (1960-65)	Generation Xers (1966-75)
Low	58	57	54	53	50	45	47
Middle	46	44	41	42	41	36	37
High	42	39	37	36	36	31	30

Source: Wu et al. (2013).

in Social Security replacement rates. Claiming behavior could be particularly important because, as a result of the 1983 Amendments, Social Security's FRA is gradually moving from 65 to 67. Thus, even if households work longer than in the past, they may fall increasingly short of qualifying for full benefits.

An Oaxaca-Blinder decomposition is used to examine how much of the gap in replacement rates between birth cohorts can be explained by differences in each observable factor.[7] The results of the decomposition exercise are shown in Figure 3.[8] Changes in labor supply mostly due to women (including labor force attachment and lifetime earnings) and claiming behavior given the extension of the FRA over time are very important factors, each explaining about one third of the difference in replacement rates between the oldest and youngest cohorts. As anticipated, the reason for the effect of claiming behavior is that even though the younger generations are projected to retire later, this delay is not sufficient to keep pace with the increase in the FRA. Demographics, which include marital status, have only a small effect. The remaining 33 percent of the change is unexplained.

FIGURE 3. CONTRIBUTION OF VARIOUS FACTORS TO DECLINE IN SOCIAL SECURITY REPLACEMENT RATE FROM DEPRESSION ERA 1 TO GENERATION XERS

Source: Authors' calculations based on Wu et al. (2013).

Conclusion

The increased labor force activity of women has led to a marked decrease in the amount of pre-retirement income that Social Security replaces. Moreover, this labor force trend will continue to put downward pressure on replacement rates for years to come. This outcome is positive for Social Security's finances. However, from a household's standpoint, the drop in replacement rates for couples will lead to a declining role for Social Security. As people are living longer but many are still retiring in their early 60s, this declining role for Social Security implies that retirees will have to rely increasingly on other sources of retirement income.

Endnotes

1 The benefit calculation is based on a worker's highest 35 years of earnings, indexed for wage growth.

2 Dependent divorced spouses are entitled to benefits if their marriage lasted at least 10 years. A person with a previous marriage that ended in widowhood is also eligible if the deceased spouse was fully insured.

3 This example was adapted from Munnell, Sanzenbacher, and Soto (2007).

4 To ensure that the cohort estimates are representative, and to minimize survival bias, this analysis uses two versions of the MINT model – MINT 5 and MINT 6. Statistics related to the older members of the Depression Era cohort (1931-1935) are derived from MINT 5, while the rest of the cohorts are extracted from MINT 6. MINT 5 derives data from the 1990-1996 SIPP, while MINT 6 uses the 2001 and 2004 panels of the SIPP. For descriptions of MINT 5 and 6, see Smith et al. (2007, 2010).

5 Given the nature of projections, caution is necessary in interpreting the results for the three cohorts who are still of prime working age: Middle Boomers, Late Boomers, and Generation Xers.

6 While the Early Baby Boomers have begun moving into retirement, many in this cohort are still in the labor force. Thus, the results for this cohort include projections for those still working as well as actual data on earnings and retirement benefits for those already retired.

7 See Oaxaca (1973) and Blinder (1973) for a discussion of the decomposition technique.

8 See Wu et al. (2013) for a full discussion of the methodology and results.

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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 educational tools and forge a strong link between the academic community and decision-makers 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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