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How Does the Changing Role of Women Affect Social Security?

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Abstract

The changing lives of women – increased labor force participation/earnings and reduced marriage rates – have had a significant effect on Social Security benefits. Estimates based on hypothetical workers and on actual workers from the *Health and Retirement Study* and *Modeling Income in the Near Term* show that Social Security replacement rates have dropped sharply and that the decline will continue for future retirees. For all households, the median replacement rate is projected to drop by 13 percentage points between the cohort born in the 1930s and GenXers (born 1966-75). The aggregate changes mask a more complex relationship that varies by marital status and income level. The change in replacement rates is the smallest among the never married and largest for married couples with husbands' earnings in the top tercile. Decomposing the reasons for the decline shows that the increased labor supply and earnings of women explain more than one third. In contrast, the impact of the changes in marital patterns is relatively small. Much of the remaining explanation rests with the increased full retirement age and changing claiming behaviors. Further, the ratio of benefit to contribution has declined with each cohort, extending the life of the trust fund.

1. 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 used to be. Indeed, 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. But replacement rates for actual individuals and households depend on more than Social Security provisions, they also depend on labor force activity and household arrangements.

While an extensive literature has explored how policy changes affect the Social Security program, only a few have focused on the impacts of demographic factors – importantly, the changing role of women.¹ Compared to thirty years ago, women today have higher levels of education, increased labor force participation, more stable career trajectories and higher salaries, and a higher probability of being divorced or never married.

This project explores how the changing lives of women affect Social Security replacement rates and thereby the program's finances. The analysis starts with trends in replacement rates for hypothetical households based on the *Current Population Survey* (CPS). It then turns to the *Health and Retirement Study* (HRS), which contains lifetime earnings profiles of actual workers and provides details of workers' demographics and marital status. Finally, it uses the *Modeling Income in the Near Term* (MINT) microsimulation model to project changes in replacement rates for future cohorts. These rich data sources produce replacement rates across a broad range of cohorts: Depression (born 1931-41), World War II cohorts (1942-47), Early

¹ Some recent examples include Butrica, Iams, and Sandell (1999), Butrica and Iams (2000), and Iams et al. (2009). Earlier work includes Burkhauser and Holden, eds. (1982), Congressional Budget Office (1986), Favreault, Sammartino, and Steuerle (2002), Ferber (1993), Harrington Meyer (1996), Ross and Upp (1993), U.S. Department of Health and Human Services (1985), and U.S. Department of Health, Education, and Welfare (1979).

Baby Boomers (1948-53), Middle Baby Boomers (1954-59), Late Baby Boomers (1960-65), and Generation X (1966-75). Moreover, information on actual workers makes it possible to examine changes in replacement rates within cohorts by marital status and by income distribution. It is also possible to decompose differences across cohorts into contributing factors to isolate the impact of the changing lives of women from other factors. Finally, the estimates can be used to calculate the impact of changing activities of women on the Social Security finances.

This paper focuses on replacement rates – benefits as a percent of pre-retirement earnings. While the level of Social Security benefits has increased overtime, wages have as well; so for measuring both adequacy of benefits and impact on the program, replacement rates are the appropriate concept. Of course, Social Security is only one component of retirement income and therefore Social Security replacement rates alone do not provide a complete measure of retirement income adequacy. But the focus of this study is how the changing lives of women has affected Social Security replacement rates and thereby the cost of the program.

The paper proceeds as follows. Section 2 documents how women's role has changed over time. It also presents a brief overview of prior studies. Section 3 describes the construction of the data and the methodology. Section 4 summarizes the trends in replacement rates across cohorts and within cohorts by marital status. Section 5 discusses the decomposition procedure to identify how much the changing role of women – characterized by both labor force activity and marital patterns – explains the differences in replacement rates across cohorts. It also introduces a third factor, changes in claiming behavior, to determine its separate influence on replacement rates. Section 6 presents estimates of the impact of the changing lives of women on the cost of the social Security program. The final section concludes.

The findings can be summarized as follows. First, the changing role of women has led to a marked decrease in the amount of pre-retirement income Social Security replaces at both the household- and individual-level, and the decline will continue for future retirees. Second, changes at the aggregate level mask the more complex relationship by marital status. The change is modest for the never married, but substantial for married, divorced, and widowed households. And the decline in replacement rates for couples is largest for households with husbands' earnings in the top tercile. At the individual level, the decline in replacement rates is most dramatic for widows, and the decline is more pronounced for women than for men.

Third, the decomposition analysis shows that changes in labor force participation, including increased labor supply and earnings, account for more than a third of the difference in replacement rates between individuals born in the early 1930s and Generation Xers (born 1966 - 1975). While marital patterns have also changed dramatically over time, the impact of this factor is relatively small. However, differences in claiming behaviors across cohorts also explain a significant fraction of the change in replacement rates. Nevertheless, about 10 to 30 percent of the change across all cohorts remains unexplained. These unexplained differences could be driven in part by the underlying assumptions used for the projection, as the explanatory power of the models is significantly higher for consecutive cohorts, especially those who have already claimed Social Security benefits or will do so in the near future.

Fourth, the changing lives of women have led to a decline in the median ratio of real lifetime benefits to contributions with each successive generation. Comparing the oldest and youngest cohorts in our sample shows a decline in the projected median ratio of real lifetime benefits to lifetime payroll taxes. The decline is about 22 percent from the baseline. While the median beneficiary across all cohorts and household types is expected to receive more in benefits

than he or she pays in taxes, the pay-out is projected to decline over time, which has positive implications for Social Security solvency.

2. Background

2.1. Social Security Program

Social Security benefits, which nearly a third of beneficiaries aged 65 or older depend on for 90 percent or more of their total income, are programmatically linked to both earnings and marital histories (SSA 2011, Table 9.A1). Social Security pays retired-worker benefits to individuals who have accumulated 40 or more quarters of earnings in covered employment over their lives. Calculating benefits at the Full Retirement Age (FRA) involves three steps. First, a worker's previous earnings are restated in terms of today's wages by indexing past earnings up to age 60 to wage growth. Second, indexed earnings for the highest 35 years are then averaged and divided by 12 to calculate Average Indexed Monthly Earnings (AIME). Finally, the Primary Insurance Amount (PIA) is the sum of applying three separate percentages to portions of the AIME (SSA 2011). The bend points in the benefit formula are indexed to wage growth, and thus depend on the year in which a person reaches age 62. Specifically, for workers first becoming eligible for benefits in 2012, their PIA is the sum of:

- 90 percent of the worker's first \$767 of AIME, plus
- 32 percent of AIME between \$749 and \$4,624, plus
- 15 percent of any AIME in excess of \$4,624.

This PIA is recalculated as long as the individual remains employed; it is indexed to prices from age 62. The benefit actually paid depends on when the worker claims. Benefits paid

at age 62 are actuarially reduced, and benefits paid between the full retirement age and 70 are actuarially increased.

In addition to the worker's benefit, Social Security provides dependent benefits to qualified spouses of retired workers. While they are not gender based, they typically go to women. Thus, a wife is entitled to two types of benefits: 1) a spouse's benefit that will top up her own retirement benefit to 50 percent of her husband's PIA (unreduced for early retirement); and 2) a survivor's benefit that will top up her own benefit to 100 percent of her husband's benefit (reduced for early retirement). 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 spouse was fully insured.

When most people retired as married couples and 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, 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. Further, over time, the share of never-married and ever-divorced women reaching retirement has increased and will continue to rise. The following section discusses changes in women's economic and social lives and their implications for Social Security replacement rates.

2.2. Women's Economic and Social Lives: Striking Changes and Their Implications

On virtually every dimension, women's economic and social lives have changed, and these changes are remaking the current and future profile of the U.S. retiree population. This

section describes the changing role of women from two key aspects: labor force participation and marital status.

Labor market trends

Women's labor force participation has risen dramatically over the last five decades. While only 37 percent of women age 20-64 worked in 1950, more than 71 percent worked by 2011. Figure 1 describes the labor force participation rate of women age 25-34 by cohort. For women of Generation X, 73 percent were in the labor force at age 25-34, twice the rate of women born in the early 1930s.

This increase in labor force participation has occurred mostly among married women: between 1970 and 2010, the percentage of married women in the labor market rose from 40 percent to 61 percent (Census Bureau, 2011). By cohort, 34 percent of married women age 25-34 born in the early 1930s were in the labor force; the percentage has more than doubled for married women of Generation X (Figure 1).

Participation levels do not tell the whole story: type of occupation and pay scale are also important to fully understand how labor market trends affect the economic status of women. With respect to job type, women are moving away from lower paying jobs towards managerial and professional positions with higher wage rates. Currently, 40 percent of women are in managerial and professional jobs, compared to just 18 percent in 1975 (U.S. Department of Labor, 2009).

The gender distinction in wages has endured, but it is declining. Women who work full time are now earning 80 percent of the male wage compared to 44 percent in 1950 (Social Security Administration, 2011). Figure 2 describes the median ratio of the wife's to husband's AIME by cohort. Generation X wives are projected to earn about 68 percent of their husbands'

wage, which is 2.5 times the ratio for wives born in the early 1930s. As more women enter the labor force and women's earnings increase relative to their husbands', more women qualify for worker-only benefits. Similarly, the proportion of women receiving only spousal or widows' benefits will decline over time.

Marriage trends

Dramatic changes in family formation have occurred in the last four decades. Two family formation behaviors – marriage and divorce – are critical to determining Social Security outcomes and adequacy.

Marriage rates have fallen sharply over the past few decades. Figure 3 summarizes marriage trends for women by cohort and age. While 83 percent of women born in the early 1930s were married at age 25-34, the proportion declines to less than 60 percent for Generation Xers. While about 70 percent of women in the oldest cohort stayed married up to age 55-64, the number is projected to decline for Generation Xers to only about 55 percent. Along with changing marriage rates, the average age at first marriage has also increased from 22.0 to 25.1 over the same period (Census, 2012).

Divorce rates increased rapidly from 1960, peaked in 1979, and have remained flat since the mid-1980s. Although the divorce rate has leveled off, the characteristics of divorce have been changing. In particular, the duration of marriages ending in divorce appears to have declined among more recent cohorts of women. Among first marriages, the share of those who remained married at their tenth anniversaries declined from 82.8 percent for those married in 1960–1964 to 74.5 percent for those married in 1990–1994 (Kreider and Ellis 2011).

As a result of trends in marriage, divorce, and marriage duration, a higher percentage of women are likely to enter retirement without having married or having been married only for a

short time, which has important implications for their retirement security generally and their Social Security benefits specifically.

2.3. Literature to Date

While an extensive literature has explored how policy changes affect the Social Security program, only a few studies have focused on the impact of demographic factors – particularly the changing lives of women. Using MINT, Butrica, Iams, and Smith (2007, 2012) examine how sweeping demographic/economic changes, including rising educational attainment, changing marital patterns, changes in female and male labor force participation and earnings, and the increasing share of immigrants and minorities impact retirement income across generations. They find that total income replacement rates will decline and that Baby Boomers and Generation Xers are less likely to have enough postretirement income to maintain their preretirement standard of living compared with current retirees.

A few studies have focused specifically on women. Butrica and Smith (2012) explore the impact of women's increasing labor force participation and earnings on married women's Social Security benefits and find that the share of married women projected to receive spouses' benefits at retirement has declined in more recent birth cohorts. Although most wives will still be eligible for survivor benefits, the share ineligible is projected to double between cohorts. Using the *Current Population Survey (CPS)*, Munnell, Sanzenbacher, and Soto (2007) directly evaluate the increased labor force participation of wives on the Social Security replacement rate of couples and find that, over the last forty years, the replacement rate for the average couple has declined from 50 percent to 45 percent.

Another strand of literature examines changes in marital patterns and the economic well-being of divorced women in retirement. Butrica and Iams (2000, 2012) find that changes in women's earnings and work patterns along with marriage-duration trends result in more divorced women receiving retired-worker benefits based on their own earnings. However, those who do not meet the 10-year marriage requirement are projected to have low retirement income and high poverty rates.

The following analysis, which builds on the existing literature, has three goals. The first is to investigate how Social Security replacement rates have changed across a broad range of cohorts and within cohorts by marital status. The second goal is to explain the extent to which the changing lives of women can explain the pattern of replacement rates across cohorts. The third goal is to estimate how the changing pattern in replacement rates have affected Social Security finances.

3. Data and Methodology

3.1. Data

For the primary analysis, the data come from the *Health and Retirement Study* (HRS) matched to the Social Security administrative earnings records. The HRS is a nationally representative longitudinal study of older Americans. The survey began in 1992 with an initial cohort of 12,652 individuals from 7,607 households in which at least one member was born between 1931 and 1941. Additional cohorts were added later. Individuals may opt to have their Social Security earnings histories linked to their survey and approximately 70 percent of

respondents have done so. Our HRS sample is grouped into three birth cohorts: Original HRS (1931-1941), War Baby (WB, 1942-1947), and Early Baby Boomers (EBB, 1948-1953).²

To project the replacement rate for future retirees, we also use *Modeling Income in the Near Term* (MINT). MINT is a microsimulation model developed by the Social Security Administration. MINT 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 projects each retiree's income from Social Security benefits, pensions, assets, and earnings (for working beneficiaries).³ Making use of MINT, we are able to project the changes in replacement rates for Middle Baby Boomers (MBB, 1954-1959), Late Baby Boomers (LBB, 1960-1965), and Generation X (GX, 1966-1975), cohorts where female labor force participation and marital patterns have changed most dramatically.⁴

3.2. Replacement Rate Calculations

In this study, the replacement rate is defined as the ratio of the worker's Social Security benefit to his AIME. Estimating the replacement rate is a three-step process. The first step is to construct the lifetime earnings profile. The second step is to estimate Social Security benefits based on earnings and marital status. The third step is to calculate replacement rates at time of first benefit receipt, taking account of actuarial adjustments for early and late claiming.

² We did not include the Children of the Depression Era (CODA), born in the late 1920s. When we first observed individuals of the CODA cohort in 1998, they were 68-74 years old and about 40 percent were widowed. Because of the selection bias due to mortality, the replacement rate calculated using the HRS for the CODA cohort does not represent the replacement rate of all individuals born during this period. Further, for the majority of widows (widowers) of the CODA cohort, we do not have the information on their late spouses. Thus, we decided to exclude the CODA cohort from our analysis.

³ For descriptions of versions 5 and 6 of MINT, see Smith et al. (2007, 2010, respectively).

⁴ To ensure that our cohort estimates are representative, and to minimize survival bias, we use two versions of the MINT model – MINT 5 and MINT 6. Statistics related to the HRS (1931-1935) cohort in our analysis are derived from MINT 5, while the rest of the cohorts are extracted from MINT 6. MINT 5 derives data from the 1990 to 1996 SIPP, while MINT 6 uses the 2001 and 2004 panels of the SIPP.

Lifetime Earnings

Lifetime earnings serve as a base for calculating Social Security benefits and career average indexed earnings. In the HRS, the administrative data provide Social Security earnings histories back to 1951 for the approximately 70 percent of the sample that has given permission to link. While previous work has documented that giving permission to link is nonrandom (Haider and Solon, 2000), the distribution of Social Security benefits is similar across the linked and non-linked respondents (Kapteyn et al. 2006). Thus, for the approximately 30 percent of the HRS sample that has not given permission to link, we follow Gustman and Steinmeier (2001) and estimate earnings histories based on survey data on previous jobs and wages, using the estimated returns to tenure from Anderson et al. (1999).⁵

MINT projects each person's mortality, entry to and exit from Social Security Disability Insurance rolls, and age of first receipt of Social Security retirement benefits. For younger cohorts, MINT projects their income and characteristics into the future, adjusting for expected demographic and socioeconomic changes. Further, MINT accounts for major changes in the growth of economy-wide real earnings, the distribution of earnings both between and within birth cohorts, and the composition of the retiree population. Since MINT is designed to simulate the whole earnings profile, no additional simulation is needed.

⁵ To project earnings beyond the year at which the individual last gave permission to match to the administrative data, we again follow Gustman and Steinmeier (2001). For individuals with self-reported earnings, the assumption is that the average of their real earnings observed in the last three reported periods persist until their expected claiming date. The actual claiming age is used if respondents have already claimed Social Security benefits. For those yet to claim, we assume that respondents claim Social Security benefits at their self-reported expected retirement age. If the expected retirement age was greater than 70, or if the individual indicated that he never expected to retire, a retirement age of 70 is used unless the individual had already worked beyond that age. If the respondent did not provide an expected retirement age, we assign them a claiming age so that the age distribution of claiming matches the Social Security reported claiming ages (Table 6.B5.1, 2010c). Combining the actual earnings with the simulated earnings yields a complete earnings profile for each individual in the HRS sample from 1951 to retirement age.

Social Security Benefits

As discussed in Section 2, the Social Security PIA is calculated by applying a piecewise-linear formula to each worker's AIME. In computing the AIME using the HRS, earnings prior to age 60 are indexed by the average wage index for the year the individual attains age 60. Earnings after age 60 are not indexed. AIME is the simple monthly average of the indexed earnings in the 35 highest-earnings years. A retiree is entitled to a benefit equal to the PIA at the FRA. A worker may choose to retire as early as age 62, with reduced benefits. If a worker delays receipt of benefits to an age as late as 70, the eventual benefits are permanently increased for each year of delay.

Marital status at the age of retirement and marital history are important when determining spousal or survivor benefits. For those who have claimed Social Security, marital status is determined at the time of first benefit receipt. In the HRS data for those not yet retired, the assumption is that last reported marital status does not change before retirement. If divorced with a previous marriage that lasted 10 or more years, we first determine if the ex-spouse is in the sample. If the ex-spouse is not in the sample, we match the respondent to someone else in the survey by gender, education, race, and 5-year birth year band. We then use the earnings histories of the matched spouse to compute the spousal and survivor benefit available from the ex-spouse. For the widows (widowers) whose deceased spouses are missing from the sample, we match the respondents with another widow(er) in the sample, based on gender, race, education, 5-year birth cohort and retirement age. We then use the earnings histories of that person's deceased spouse to estimate survivor benefits.

The calculation of benefits is done in an analogous way using data from MINT. MINT observes marriage patterns in the periods covered in the SIPP panels when husbands and wives

can be precisely identified. For individuals projected to change marital status after the last SIPP observation (or whose former spouses from before the SIPP panel are not observed), the model statistically matches married individuals with a spouse with characteristics of a likely match. The spousal and survivor benefits then are calculated using these observed and imputed spouses.

Mortality Adjustments

In the 2010 HRS, a portion of WB and EBB respondents are yet to retire, so mortality adjustments are needed because some may die before claiming.⁶ The mortality assumptions are imbedded in MINT; therefore, no additional adjustments or projections are needed (see Smith et al. 2010, page II-11).

Social Security Replacement Rates

For currently married households, the replacement rate is the ratio of household benefits, which is the sum of the benefits of both husband and wife, to the sum of AIMEs of the couple. It is calculated at the time that both spouses first receive their Social Security benefits. In the case of individuals who find themselves widowed or divorced at the time they first start receiving benefits, we create a lifetime shared earnings measure, which equals the individual's earnings in years when he was not married and the average of the couple's earnings in years in which he was married. Thus, the household replacement rate for widowed and divorced persons is the ratio of the benefit that the widow(er)/divorcee receives to the average lifetime shared indexed earnings.

⁶ The mortality assumptions imbedded in these calculations start with mortality tables from the SSA, which have data by age and gender. These tables are then adjusted, based on Brown, Liebman and Pollet (2002), to reflect the fact that survival probabilities vary with education and race. We estimate the average mortality rate for each calendar year starting from 2010 through 2045 (that the year that the youngest person of the EBB reaches age 70); then based on these estimated mortality distributions, we assign a death year to individuals with the lowest survival probability at that specific year. For instance, if 5% of the sample is expected to die in 2011, we assign individuals at the bottom 5 percent of the survival probability distribution a death year of 2011.

The Picture by Cohort

The data from the HRS for the original HRS, WB and EBB cohorts suggests several reasons why Social Security replacement rates have changed over time (Table 1). Marriage rates have declined across cohorts, and the labor force participation of women has increased. The share of individuals that are divorced or never married when they first claim has risen from about 28 percent to 42 percent. Average quarters of work have increased dramatically for women, by about 20 to 30 percent for the married, widowed, and divorced. These changes have increased the share of women eligible for Social Security retired-worker benefits based on their own earnings: only 53 percent of women were eligible for benefits as a retired worker for the original HRS cohort compared to 71 percent for the EBB.⁷ At the same time, women eligible for only auxiliary benefits declined from 20 percent for the oldest cohort to about 8 percent. Along with the increased female labor market attachment, household AIME has gone up, with the biggest increase for married couples. While the benefits have also increased over time, the changes are relatively modest compared to the changes in AIME, suggesting that replacement rates may fall.

4. Changes in Replacement Rates over Time

4.1. Social Security Hypothetical Workers

The exercise starts by examining changes in replacement rates over time using Social Security's "medium" hypothetical worker. The data come from the 1962 to 2006 March Supplement to the *Current Population Survey*.⁸ Three statistics are estimated: medium earner replacement rate; medium couple replacement rate; and medium household replacement rate.

The medium hypothetical earner is assumed to enter the labor force at age 21, remain constantly

⁷ See also table 5.A14 in the Annual Statistical Supplement to the Social Security Bulletin (2011) for similar comparison of the distribution of women's benefit entitlement over time.

⁸ Our analysis is built on Munnell, Sanzenbacher, and Soto (2007).

employed until age 65, and earn 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. The replacement rate of the medium hypothetical worker is then the ratio of the worker's benefit to his career average indexed earnings.

Estimating couple's replacement rate requires earnings histories for husband and wife. We estimate the medium earnings of husbands and the ratio of wife's earnings to the husband's. To approximate Social Security's replacement rate calculation, the benefit calculation treats the husband's income at retirement as the steady income that he made over the course of his life, and the wife-to-husband ratio of income as a constant as well. These assumptions produce a set of earnings 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. The medium household replacement rate is calculated by weighting the replacement rate for the medium earner by the percent of total households retiring as individuals and weighting the replacement rate for the medium couple by the percent of households retiring as couples.

Figure 4 documents these trends. The household replacement rate has declined from 42 percent for the HRS cohort to 38 percent for Middle Boomers. The main reason for this decline is the drop in the couple's replacement rate. Social Security retirement income only replaces about 38 percent of pre-retirement income of an average married couple of Middle Boomers, compared to almost 44 percent for the HRS cohort. The substantial decline in couples' replacement rates suggests that the increasing labor force participation of women is a major factor.

While replacement rates for hypothetical workers have clearly declined over time, this approach ignores volatility in earnings and marriage histories and cannot capture the correlations between replacement rates and various demographic, socioeconomic, and marital trends over time. For these reasons, we turn to the HRS.

4.2. Current Retirees: Actual Earners in the HRS

Table 2 presents changes in individual replacement rates from the original HRS cohort to the EBB using the HRS data and the methods section 3 describes. The pattern produced by using the lifetime pay profile of actual workers is consistent with that using the hypothetical worker: the median replacement rate for all groups has declined over time, from 46 percent for the WB to 39 percent for the EBB.

The aggregate trend masks more complex patterns by gender and marital status. The decline is more dramatic for women than for men. And the drop in the replacement rate for women is substantially larger for the currently married, divorced, and widowed compared to the never married. These patterns reflect the changing labor force participation of married women. Historically married women were less likely to work outside the home, but the picture began to change in the 1950s when the demand for labor was strong, the jobs became more attractive, and appliances made housekeeping less time-consuming. The participation of married women continued to grow thereafter. The more that married women work, the more they earn their own benefits, which reduces their eligibility for spousal benefits and lowers their replacement rate.

The change in median household replacement rates largely mirrors that of individual replacement rates (Table 3). While the change in replacement rates is fairly small for the never married, the decrease is substantial for the widowed, divorced, and currently married. Among

married couples, the decline is particularly large for dual-earner households.⁹ This outcome reflects the fact that working wives add substantially more to the couple's pre-retirement earnings than they do to their Social Security benefits.¹⁰

Table 4 shifts the focus from marital status to earnings and shows replacement rates of married couples by the husband's earnings. The replacement rate has declined more for households with husbands in the top tercile of the earnings distribution than for households with a husband in the bottom tercile. This pattern likely reflects the change in the correlation of husbands' and wives' earnings. Schwartz (2010) reports that the earnings of husbands and wives were negatively correlated in the late 1960s and 1970s but as highly educated women went to work, the correlation became positive.

4.3. Future Retirees: Projections Using MINT

Although the growth in women's labor supply has slowed, later cohorts will have a much larger percentage of women who will have spent most of their lives in the labor force. Further, the share of never married or divorced women reaching retirement has increased and will continue to increase. These two phenomena suggest that replacement rates for future retirees will keep changing. To investigate to what extent the replacement rate changes for the younger cohorts, we use MINT to project replacement rates for Middle Baby Boomers (MBB, 1954-1959), Late Baby Boomers (LBB, 1960-1965), and Generation X (GX, 1966-1975). The results are presented in Tables 5 and 6.¹¹

⁹ Single-earner households are defined as only one spouse qualifying for benefits based on own earnings history; Dual-earner households are defined as both spouses qualifying for benefits based on own earnings history.

¹⁰ It should be mentioned that by definition our measures are censored at the tax maximum and as a result they cannot capture the effects at the very top of the earnings distribution.

¹¹ In our MINT sample, the original HRS cohort is separated into two cohorts: HRS1 (born between 1931 to 1935) and HRS2 (born between 1936 and 1941) and they come from two versions of the MINT model-MINT5 and MINT6.

While the main motivation of using MINT is to project outcomes for future retirees, the rich information in MINT also allows us to estimate replacement rates for older cohorts, which provides an external comparison to our HRS estimates. Comparing overlapped cohorts shows that MINT and HRS estimates of replacement rates are largely consistent, MINT estimates are somewhat higher and the estimated decline for the first three cohorts is slightly smaller (Tables 5 and 6). For instance, while the HRS data show that replacement rates of currently married households declined from 44 percent to 38 percent (about 14 percent) between the HRS and EBB cohorts, MINT shows a decline from 47 to 42 percent (about 11 percent).

A close look at demographics of the MINT sample reveals possible sources of the difference (Table 7). Compared to the HRS, the MINT sample is relatively more educated, more likely to be married, and less likely to be divorced or never married. In terms of labor force participation, while the females of the HRS sample work more than those of MINT, the males work less. Consequently, the proportion of females that is eligible for own retired worker benefit is higher for the HRS sample compared to the MINT sample. While investigating what imbedded assumptions of MINT lead to these differences is outside the scope of this project, the differences between MINT and the HRS should be taken into account when assessing projections for future retirees.

The characteristics of future retirees reveal a continuing decline in the share of households that retire as married couples, and an increase in never married and divorced households at retirement. Table 7 also shows that the rate of increase in labor force participation of women is projected to slow, but the number of quarters covered keeps rising for women of younger cohorts. Consequently, more women will be eligible for own worker benefits at

retirement, with the fraction increasing from 67 percent for the EBB to 75 percent for Generation Xers.

Projections from MINT indicate that the replacement rate will continue to decline for future retirees. At the household-level, the replacement rate will decline from 45 percent for the EBB to 39 percent for Generation Xers (Table 6). The decline is particularly pronounced among married couples, with a drop of 14 percent between EBB and Generation X cohorts.

Surprisingly, MINT projects that replacement rates will decline more for single-earner households than for dual-earner households: moving from the EBB and the Generation X, replacement rates are projected to drop from 54 percent to 37 percent for single-earner households, but only change by 6 percentage points (from 42 to 36 percent) for dual-earner households. This sharp decline, which is concentrated in the last two cohorts, is surprising and quite different from the experience of older cohorts.

The projected decline is primarily driven by compositional changes of single-earner households. In MINT, the percent of single-earner households in which spouses receive benefits solely based on the husband's earnings record is projected to drop sharply for the last two cohorts, from 72 percent for EBB to 64 percent for the Gen X cohort. At the same time, the share of households in which spouses receive benefits based on the wife's work history will increase. The latter type of households tend to have lower replacement rates, because the non-working spouse, who is male, usually has accumulated more years of coverage and has earned higher wages than a female spouse. As a result, a male non-working spouse ends up contributing more to the denominator of the replacement rate.

In terms of income distribution, MINT also projects the largest decline in replacement rates to occur among married couples in which the husband is at the top of the income distribution (Table 8).

In summary, the analysis using hypothetical earners from the CPS and actual workers from the HRS and the MINT all show declining individual and household replacement rates. Moreover, the simulations for future retirees indicate that the increasing labor force participation of women will continue to put downward pressure on Social Security replacement rates for future retirees.

5. Explaining Differences over Time: Oaxaca-Blinder Decomposition

This section measures how much of the decline in replacement rates can be explained by the changing lives of women – labor force participation and marriage patterns – as opposed to the other major explanation – reductions due to the extension of the FRA and early claiming.

As a result of the 1983 Amendments, Social Security’s full retirement age is moving from 65 to 67. MINT also projects that the actual claiming age will increase from 62.2 for those born in the early 1930s to 64.3 for Generation Xers (Table 7).¹² To isolate the impact of the changing FRA on the replacement rate, Table 9 compares trends in household replacement rates

¹² Based on MINT’s projection, the trend in replacement rates has been flat since the EBB. Part of the reason is that MINT’s OASI-claiming model does not explicitly build in the rising full retirement age or cohort effects as covariates in estimation and then projection. See page IV–10, table 4-4 in Smith, et al. (2010) for detailed description of model specification and list of independent variables. However, MINT 6 partially accounts for the higher FRA, by estimating and simulating two separate models depending on whether the individual is subject to the Retirement Earnings Test (RET), which in 2000 was suspended after reaching FRA. As the FRA increases, working individuals in future cohorts will be subjected to the RET for longer periods in their 60s, thus they are projected as to be more likely to delay claiming. The resulting distribution of claiming ages, of course, will also depend on the extent to which individuals belonging to various socio-demographic groups are likely to be working enough, so as to be subjected to the RET. As the authors indicate in the text: “These estimates are based on a sample of individuals for whom the full retirement age for Social Security ranged from 65 to 66. As the full retirement age continues to increase to 67, these algorithms automatically slow claiming for higher earners at younger ages (those with earnings below the retirement earnings test exempt amount), but they do not generally slow claiming for lower earners (all else equal).”

with actual claiming ages and what they would have been had the unit claimed at the FRA. The results show that claiming behavior significantly impacts the replacement rate, and the magnitude of change again varies substantially by marital status. For instance, when claiming at the FRA, the replacement rate only declined by 4 percentage points for the divorced while the decline is 11 percentage points for this group when estimated at their actual claiming age.

The method used to separate the impact of labor force experience, marriage patterns, and claiming behavior is based on the work of Oaxaca (1973) and Blinder (1973), a decomposition method widely used in social science research. Essentially, this decomposition involves calculating what one cohort's outcomes would have looked like if it had the characteristics of another cohort. The approach involves estimating the following linear regression model to predict household replacement rates for individuals at retirement:

$$R_i = X_i\beta_i + \varepsilon_i \quad (1)$$

where R_i denotes the household replacement rate for individual i , X_i denotes a set of observed characteristics, and ε_i is a random error term. To explore the difference between two cohorts, we estimate two parallel models for each cohort separately:

$$R_{C1} = X_{C1}\beta_{C1} + \varepsilon_{C1} \quad (2)$$

$$R_{C2} = X_{C2}\beta_{C2} + \varepsilon_{C2} \quad (3)$$

where $C1$ denotes cohort1 and $C2$ denotes cohort 2, and the error terms ε_{C1} and ε_{C2} are mean zero. The difference between the mean outcomes of these two cohorts is:

$$E(R_{C1}) - E(R_{C2}) = \overline{X_{C1}}\beta_{C1} - \overline{X_{C2}}\beta_{C2} \quad (4)$$

Blinder-Oaxaca decomposition then adds and subtracts either $\overline{X_{C1}}\beta_{C2}$ or $\overline{X_{C2}}\beta_{C1}$. In the former case, after grouping terms, the following equation results:

$$E(R_{C1}) - E(R_{C2}) = (\overline{X_{C1}} - \overline{X_{C2}})\beta_{C2} + (\beta_{C1} - \beta_{C2})\overline{X_{C1}} \quad (5)$$

which decomposes the difference between outcomes in populations C1 and C2 into the portion that can be explained by differences in the mean of the variables X in the two groups (the first part, commonly called the “explained” portion) and the portion owing to differences in the coefficients between the two groups for the same values of X (the latter part, or the “unexplained” portion).

In the main analysis, the X vector includes three major components that could contribute to the difference across cohorts: marital status; labor supply; and claiming behaviors. M denotes marital status, including dummies for married, widowed, and divorced; L indicates labor supply, including covered quarters (Q), a dummy of whether worked over 40 quarters (Q_{40}), and the average of no zero earnings (E). $Bratio$ represents claiming behaviors, which is constructed as the ratio of actual to full benefits, as a result of the individuals claiming early and receiving an actuarially reduced benefit, or claiming late and receiving delayed retirement credits.¹³ In addition, the model also controls for changes in education, race and gender over time; these factors are grouped in D vector. ε is a random error term with mean zero. Thus, the decomposition model can be further expressed as follows:

$$\begin{aligned}
 E(R_{C1}) - E(R_{C2}) &= (\overline{M_{C1}} - \overline{M_{C2}})\beta_{C2} + (\beta_{C1} - \beta_{C2})\overline{M_{C1}} + (\overline{Bratio_{C1}} - \overline{Bratio})\beta_{C2} + (\beta_{C1} \\
 &- \beta_{C2})\overline{Bratio} + (\overline{L_{C1}} - \overline{L_{C2}})\beta_{C2} + (\beta_{C1} - \beta_{C2})\overline{L_{C1}} + (\overline{D_{C1}} - \overline{D_{C2}})\beta_{C2} + (\beta_{C1} \\
 &- \beta_{C2})\overline{D_{C1}} + (\overline{E_{C1}} - \overline{E_{C2}})\beta_{C2} + (\beta_{C1} \\
 &- \beta_{C2})\overline{E_{C1}}
 \end{aligned} \tag{6}$$

The results of estimating equation (6) are summarized in Table 10 and Figure 5, which gradually adds the impact of each contributing factor.¹⁴ Overall, the difference in average replacement rates between the oldest cohort (the original HRS) and the youngest (the Generation

¹³ Over time, the $Bratio$ has declined, from 0.9 for the original HRS cohort to 0.83 for the GX cohort.

¹⁴ For the purpose of consistency, we report the decomposition results using MINT. The results are largely consistent for overlapped cohorts using the HRS data. These results are available upon request.

X cohort) is 12.5 percentage points.¹⁵ Changes in labor supply, including both labor market attachment and earnings, are the most important and together explain about 35 percent of the difference in replacement rates between the oldest and youngest cohorts. Moreover, when comparing consecutive cohorts, labor force factors account for an even bigger percent of the change – ranging from 35 to 72 percent.

Changes in marital status over time work in the opposite direction. Since married couples have, on average, lower replacement rates compared to other groups, the decline in the share of married households leads to an increase in the replacement rate, while the rise in the share of divorced has the opposite effect.¹⁶ In terms of magnitude, these effects are very small though statistically significant. Over time, replacement rates would have been about three percent higher for Generation Xers, if marital patterns had remained the same as for individuals born in the early 1930s.

Claiming behavior, however, is also an important factor that contributes to the overall decline in the benefit ratio factor, which accounts for about a third of the drop in replacement rates between the oldest and the youngest cohorts. The reason is that even though the claiming age of younger generations is projected to increase, on average it does not rise enough to keep pace with increases in the FRA. As a result, MINT expects a larger portion of future retirees to face an actuarial reduction in their benefits.

Additionally, changes in other factors, such as race, gender, and education also explain about 5 percent of the total decline in replacement rates over time. Finally, although differences

¹⁵ While the declining replacement rates indicate that benefits as a percent of pre-retirement earnings are expected to drop, the benefits in real terms are expected to keep rising for all household groups (see table 7).

¹⁶ One should note that our measures capture just the percent of average lifetime earnings that social security benefits replace in retirement. An alternative way to compare wellbeing across households would be to use equivalence scales to account for the economies of scale in consumption that married couples enjoy. This, however, is out of the scope of this paper.

in three major factors, labor supply, marital status, and claiming behavior can account for much of the decline in replacement rates over time, about 10 to 30 percent of the change across cohorts remains unexplained. The unexplained component is much smaller for the cohort-to-cohort, however, suggesting that these unexplained differences could in part be driven by the underlying assumptions used for the projection.

The Blinder-Oaxaca analysis is repeated for women only (Table 11 and Figure 6). The pattern is largely consistent with that for all households, although labor supply and earnings contribute a larger fraction to the decline of replacement rates across cohorts. Further, the “unexplained” part is much smaller, which is consistent with the fact that the decline in replacement rates over time is primarily driven by the changing role of women.

Finally, the Blinder-Oaxaca decomposition analysis is applied to different marital status groups (Table 12). The results are largely consistent, except that changing claiming behaviors play a much more important role for the divorced and never married groups, accounting for over 50 percent of the drop in replacement rates between the oldest and the youngest cohorts. For the married, the model also controls for spouse’s characteristics. By doing so, this exercise provides further evidence on how marriage, specifically assortative mating, impacts replacement rates.¹⁷ The results show that spouse’s labor supply and claiming behaviors play an equally important role as the individual’s own labor supply and claiming decisions in explaining changes in household replacement rates over time.

To summarize, decomposing the source of the drop in replacement rates over time shows that the increased labor supply and earnings of women explain more than one third. While the

¹⁷ The literature has documented substantial changes in assortative mating patterns over time. In addition to what have mentioned in previous section that the correlation between spouses’ earnings has become positive from negative over time, couples are becoming more similar in other dimension and rather than marrying up, more women are marrying down in terms of education (Rose, 2001).

marital pattern has changed dramatically over time, the impact of this factor is relatively small. Changing claiming behaviors, however, also play an important role, explaining another one third of the decline in replacement rates over time.

6. Impact of Women Working on Social Security Finances

To get a broader picture of how the changing lives of women are impacting the system, it is informative not only to consider what past and future beneficiaries receive from Social Security at a particular point in time (the replacement rate measure), but also to look at what they get in return for their contributions on a lifetime basis. Table 13 summarizes the median ratio of present value of lifetime benefits over present value of lifetime payroll taxes paid to the system across cohorts. Comparing the oldest and youngest cohorts in our sample shows a projected decline of the median ration from 1.57 to 1.23. While the median beneficiary across all cohorts is expected to receive more in benefits than he or she pays in taxes, the pay-out is projected to decline over time and for future retirees, which has positive implications for Social Security solvency. The declining pattern we observed is consistent with Leimer (2007). Further, the changes of benefits to contributions ratio differ by marital status, with the decline being largest among the widowed.

7. Conclusion

This paper examines the extent to which the changing role of women impacts Social Security replacement rates. It first documents substantial changes in women's labor force participation and marital status over time. Then the study estimates changes in Social Security replacement rates when first claiming across a broad range of cohorts: for those born between

1931 and 1975. It compares estimates using hypothetical workers to those based on actual earning histories, as well as projections for future retirees. The results show that the changing role of women has led to a marked decrease in the amount of pre-retirement income that Social Security replaces, and the decline will continue for future retirees. Over one third of the decline in replacement rates over time can be explained by the increased labor supply and earnings of women. Only a small fraction of the change in replacement rates is contributed by changing marital patterns. Finally, factors other than the changing lives of women, such as changes in claiming behaviors, also play an important role in explaining the decline in replacement rates over time. As people are living longer but many still retiring in their early 60s, the declining role for Social Security implies that retirees will have to rely increasingly on other sources of retirement income.

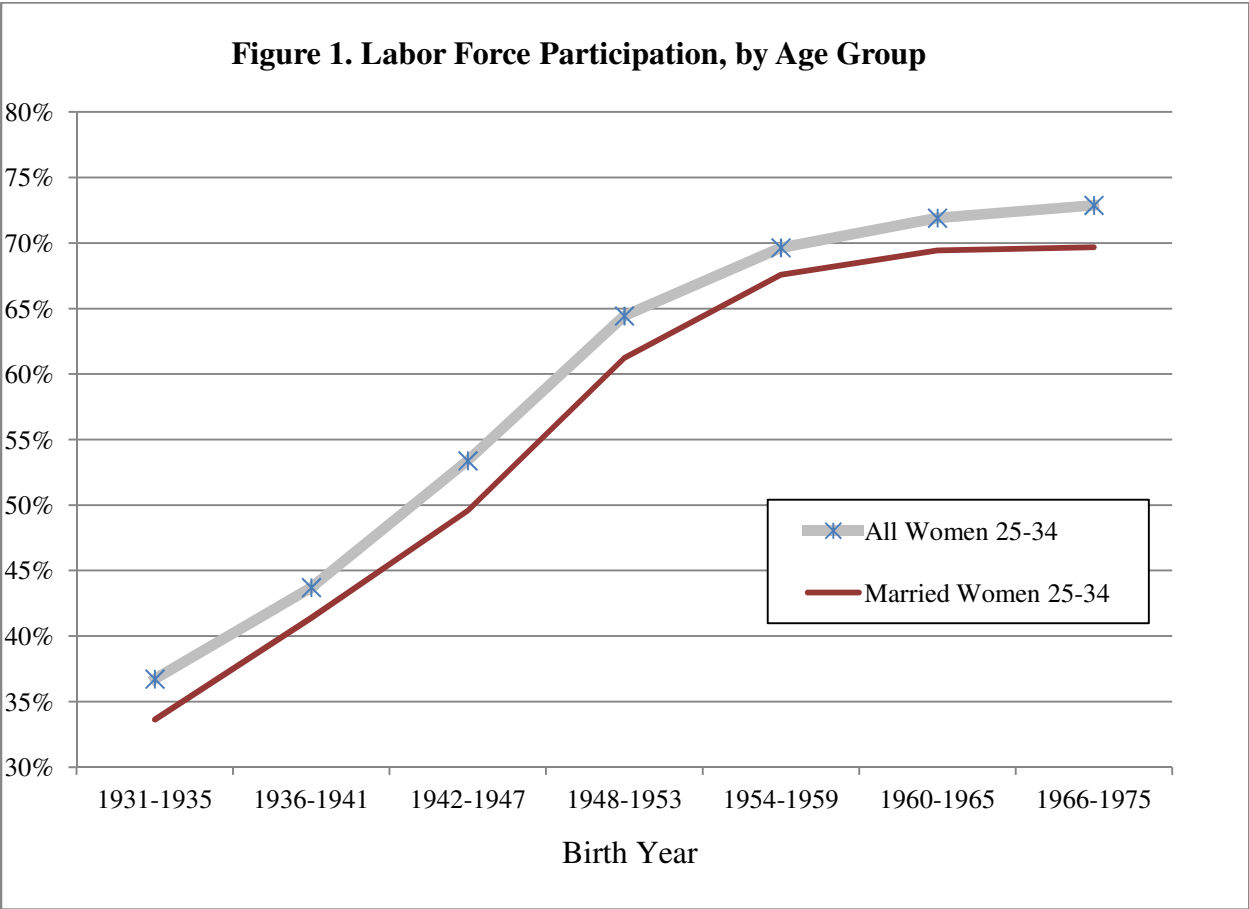
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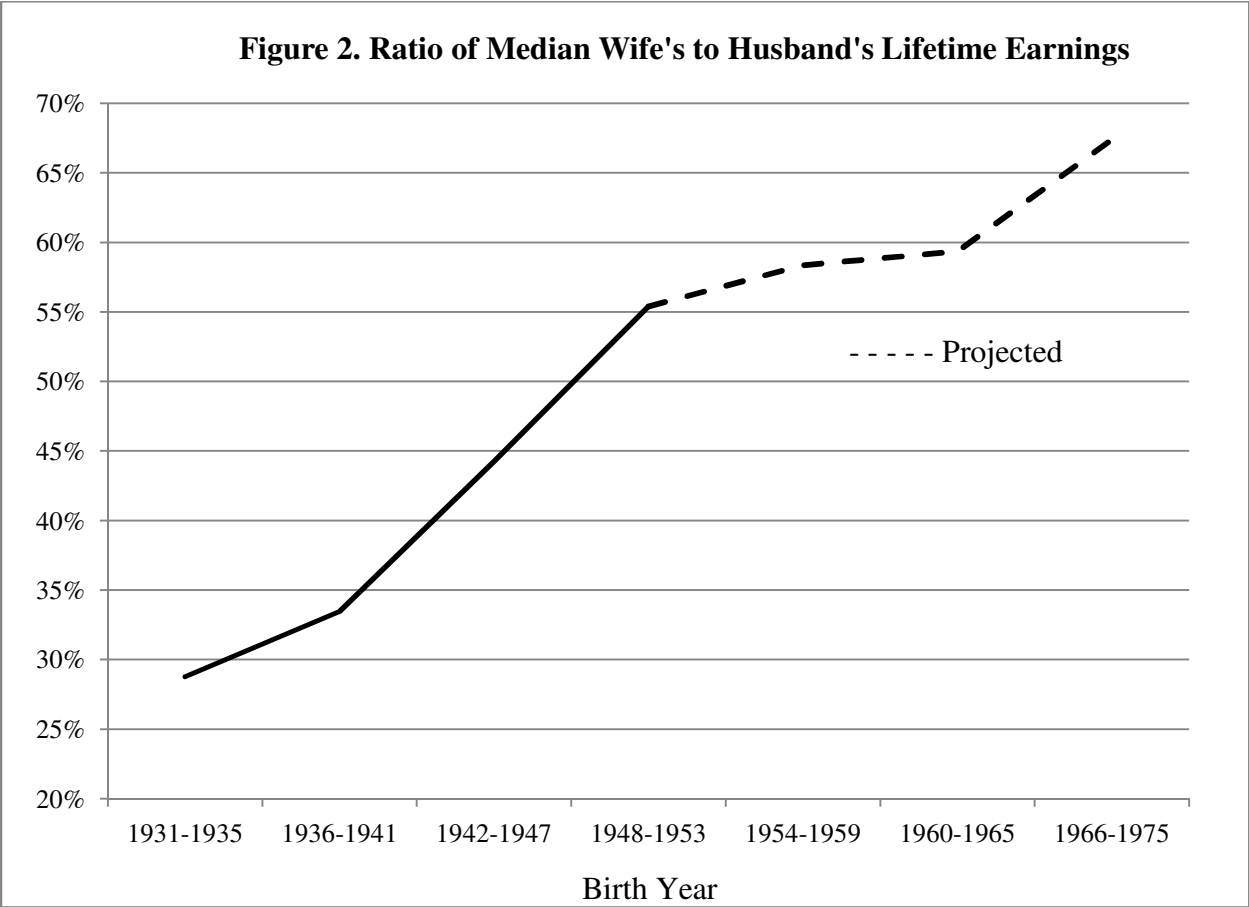
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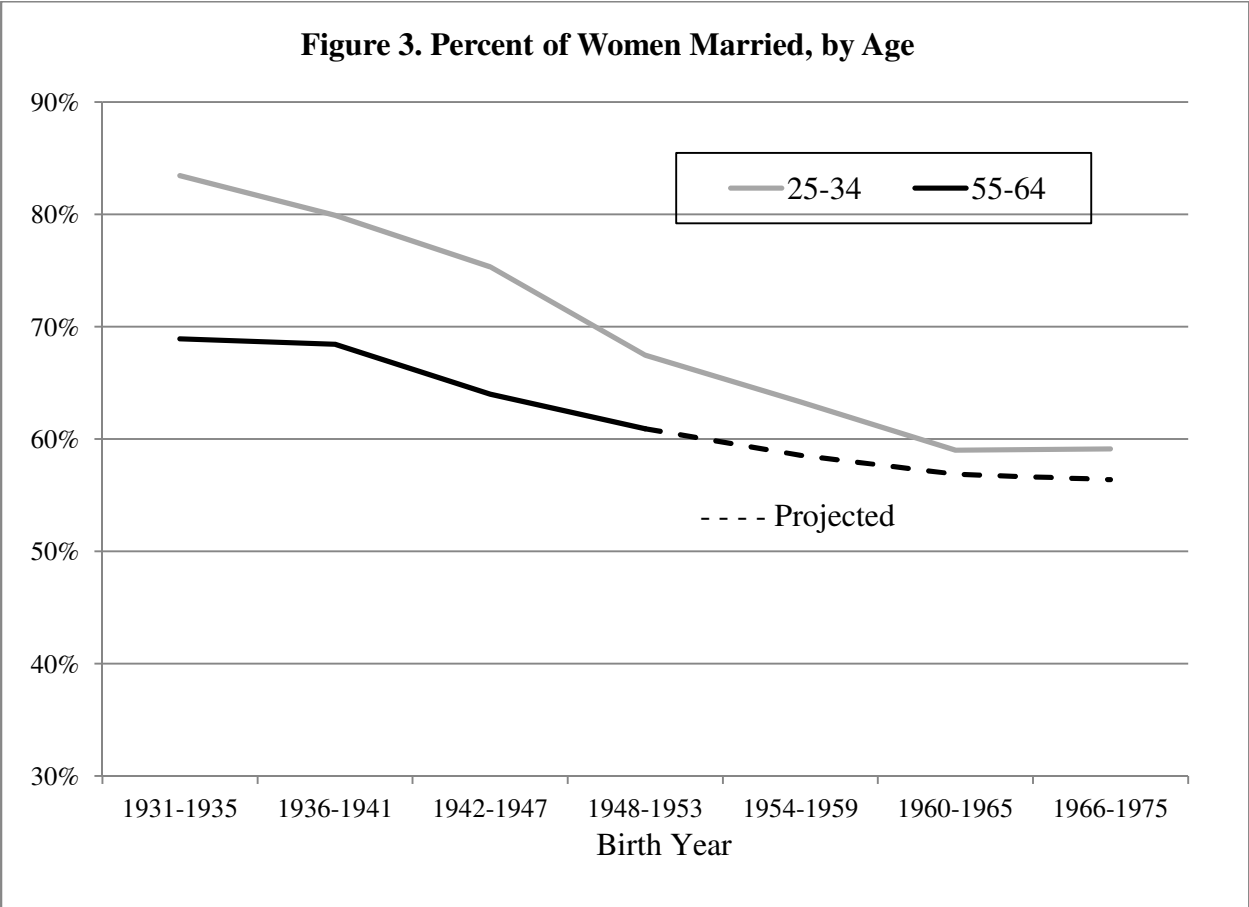
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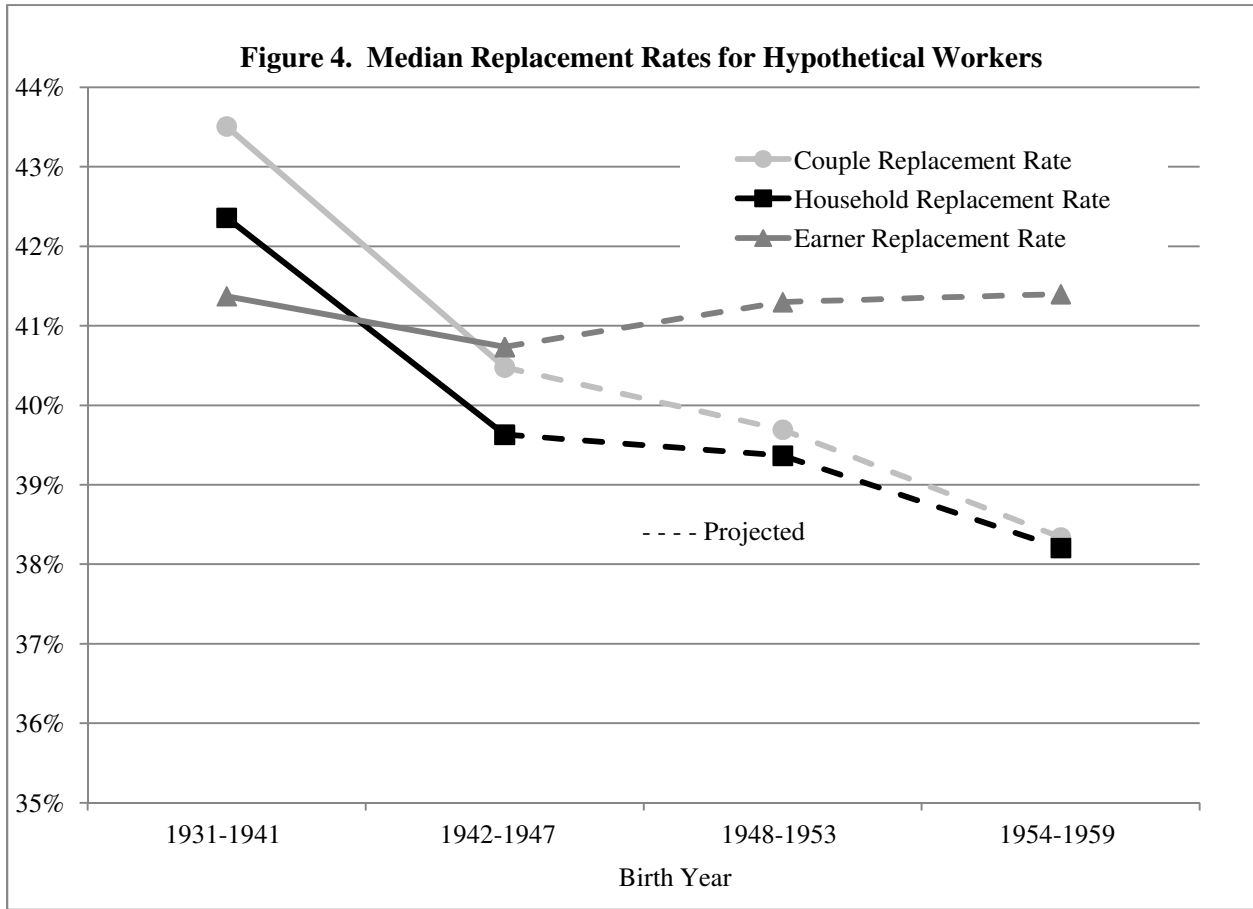
Source: Authors' calculations based on MINT.



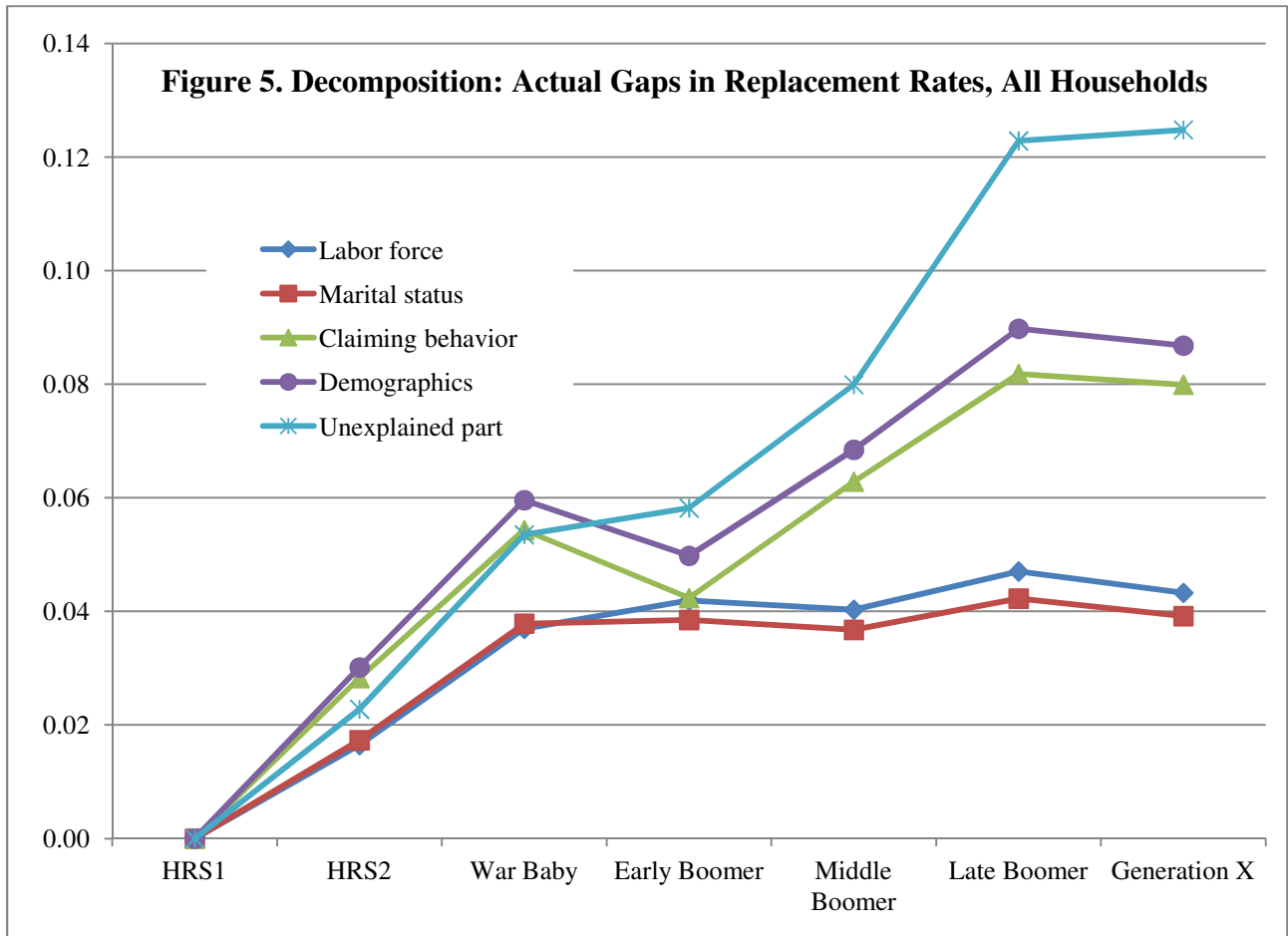
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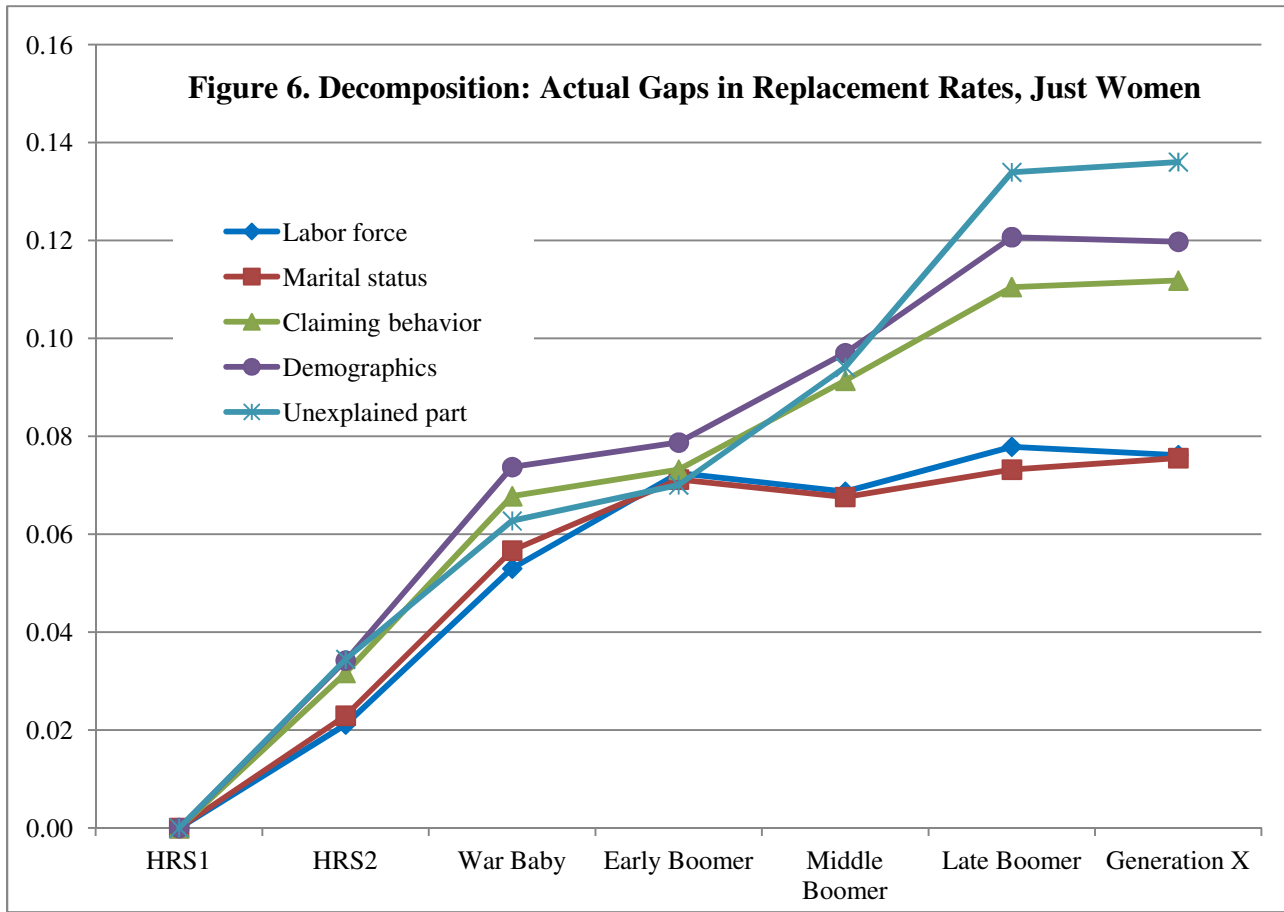
Source: Authors' calculations based on MINT.



Source: Authors' calculations based on the CPS.



Source: Authors' estimations based on MINT.



Source: Authors' estimations based on MINT.

Table 1. Characteristics of individuals when first claiming benefits

Characteristics	HRS	WB	EBB
Gender (%)			
Men	45.72	45.30	45.22
Women	54.28	54.70	54.78
Education (%)			
Less than HS	20.10	9.27	9.29
High School	58.82	59.42	58.17
College +	21.09	31.32	32.54
Marital status (%)			
Married	56.29	50.23	47.04
Divorced	22.80	29.27	33.33
Never married	4.78	6.13	8.42
Widowed	16.13	14.37	11.22
Numbers of quarters covered by gender and marital status			
Women			
Married	96	114	126
Divorced	113	125	135
Never married	144	143	145
Widowed	102	120	123
Men			
Married	149	154	154
Divorced	141	153	152
Never married	131	144	149
Widowed	147	136	147
Benefit type (all women)			
Retired worker	53.35	63.02	71.39
Dually entitled	27.06	25.38	20.15
Auxiliary only	19.58	11.6	8.47
Average AIME (household level) 2012 dollars			
Married	61,135	82,360	89,867
Divorced	28,666	36,962	39,759
Never married	32,533	39,160	42,030
Widowed	21,680	28,382	30,137
Average Benefit (household level) 2012 dollars			
Married	26,361	29,978	32,369
Divorced	12,617	14,248	14,829
Never married	13,001	14,291	15,327
Widowed	13,291	15,916	16,870
Number of observations			
	11,538	2,271	3,213

Table 2: Estimated Replacement Rates, Individual Level (Median)

	HRS	War Baby	Early Boomer
Weighted average of all types	46%	39%	39%
Never married			
Men	46%	39%	42%
Women	41%	38%	42%
Currently married			
Men	38%	33%	34%
Women	61%	48%	45%
Widowed			
Men	40%	38%	38%
Women	74%	65%	61%
Divorced			
Men	39%	37%	36%
Women	54%	44%	42%

Table 3: Estimated Replacement Rates, Household Level (Median)

	HRS	War Baby	Early Boomer
Weighted average of all household types	46%	40%	39%
Never married			
	45%	38%	42%
Currently married			
Single-earner households			
	55%	50%	52%
Dual-earner households			
	42%	36%	36%
Combined married households			
	44%	38%	38%
Widowed			
	59%	54%	51%
Divorced			
	47%	40%	39%

Table 4.1: Estimated Replacement Rates for the Married (Median, single-earner households)

		HRS	War Baby	Early Boomer
Husband's Earnings	Low	72%	79%	76%
	Median	54%	49%	51%
	High	47%	38%	40%

Table 4.2: Estimated Replacement Rates for the Married (Median, dual-earner households)

		HRS	War Baby	Early Boomer
Husband's Earnings	Low	51%	44%	46%
	Median	42%	36%	36%
	High	36%	31%	30%

Table 4.3: Estimated Replacement Rates for the Married (Median, combined)

		HRS	War Baby	Early Boomer
Husband's Earnings	Low	57%	47%	49%
	Median	43%	37%	37%
	High	37%	31%	30%

Table 5: Estimated Replacement Rates, Individual Level, MINT (Median)

	HRS 1931-1935	HRS 1936-1941	War baby	Early Boomers	Middle Boomers	Late Boomers	Generation Xers
Weighted average of all types	53%	49%	46%	46%	45%	40%	40%
Never married							
Male	45%	44%	43%	45%	44%	42%	40%
Female	52%	50%	42%	43%	45%	38%	39%
Currently married							
Male	39%	39%	37%	39%	39%	35%	35%
Female	78%	67%	57%	52%	50%	44%	44%
Widowed							
Male	41%	40%	41%	40%	39%	36%	39%
Female	121%	89%	77%	75%	67%	59%	56%
Divorced							
Male	44%	42%	40%	40%	41%	37%	36%
Female	66%	59%	54%	52%	49%	46%	46%

Table 6: Estimated Replacement Rates, Household Level, MINT (Median)

	HRS 1931-1935	HRS 1936-1941	War baby	Early Boomers	Middle Boomers	Late Boomers	Generation Xers
Weighted average of all types	50%	48%	45%	45%	44%	39%	39%
Never married							
	47%	47%	43%	44%	44%	40%	40%
Currently married							
Single-earner households							
	53%	55%	52%	54%	49%	38%	37%
Dual-earner households							
	45%	43%	41%	42%	41%	37%	36%
Combined married households							
	47%	45%	42%	42%	41%	37%	36%
Widowed							
	64%	61%	60%	55%	53%	48%	53%
Divorced							
	52%	48%	46%	46%	44%	40%	41%

Table 7. Characteristics for individuals when first claiming benefits, MINT

Characteristics	HRS 1931-1935	HRS 1936-1941	War baby	Early Boomers	Middle Boomers	Late Boomers	Generation Xers
Gender (%)							
Men	46.76	47.20	47.49	46.62	47.41	47.76	47.81
Women	53.24	52.80	52.51	53.38	52.59	52.24	52.19
Education (less than high school %)							
All							
Less than HS	20.59	13.71	9.05	6.41	7.17	7.09	7.75
High School	58.84	61.61	59.6	58.31	60.17	59.27	54.85
College +	20.58	24.68	31.35	35.28	32.66	33.63	37.4
Marital status (%)							
Never Married	3.53	3.82	4.83	6.54	7.87	8.16	10.22
Married	73.76	72.27	68.41	63.94	61.98	60.11	59.26
Widowed	12.09	11.11	9.2	10.21	10.6	10.89	9.83
Divorced	10.62	12.8	17.56	19.31	19.55	20.85	20.69
Average numbers of covered quarters							
Women							
Never Married	124	129	132	142	133	139	138
Married	75	86	99	111	116	120	120
Widowed	84	92	107	112	116	119	115
Divorced	106	108	121	130	131	132	130
Men							
Never Married	127	130	131	137	137	137	138
Married	141	143	144	143	144	146	144
Widowed	139	141	138	140	142	143	136
Divorced	137	136	142	140	142	147	145
Benefit type (all women)							
Retired worker	43.94	56.26	60.67	67.40	70.39	71.98	74.98
Dually entitled	31.12	27.32	27.87	24.12	21.42	20.83	17.67
Auxiliary only	24.93	16.42	11.46	8.48	8.19	7.19	7.36
Average AIME (household level) 2012 dollars							
Married	48,474	58,526	70,210	76,879	83,663	90,543	97,709
Divorced	21,491	25,420	29,265	32,737	36,655	38,979	39,092
Never married	25,829	31,329	37,816	40,437	41,182	43,456	50,268
Widowed	24,499	28,054	35,047	36,965	40,732	44,158	49,076
Average Benefit (household level)							
Married	22,126	25,624	28,933	31,418	33,191	32,119	33,823
Divorced	13,264	14,443	16,062	17,204	18,010	17,057	18,073
Never married	11,290	13,416	14,951	16,199	16,230	15,631	17,312
Widowed	12,397	13,102	15,598	16,491	17,143	16,741	18,304
Actual claiming age							
All	63.54	63.45	63.87	64.23	64.06	64.23	64.17
Men	63.86	63.70	64.03	64.48	64.33	64.55	64.43
Women	63.25	63.23	63.72	64.02	63.82	63.93	63.93

ent Rates for the Married (Median, single-earner households), MINT

	HRS 1931-1935	HRS 1936-1941	War baby	Early Boomers	Middle Boomers
	73%	74%	63%	72%	66%
	53%	52%	47%	49%	46%
	46%	43%	45%	37%	42%

ent Rates for the Married (Median, dual-earner households), MINT

	HRS 1931-1935	HRS 1936-1941	War baby	Early Boomers	Middle Boomers
	53%	53%	51%	51%	50%
	45%	43%	40%	43%	41%
	41%	39%	37%	36%	36%

ent Rates for the Married (Median, combined), MINT

	HRS 1931-1935	HRS 1936-1941	War baby	Early Boomers	Middle Boomers
	58%	57%	53%	54%	51%
	46%	44%	41%	43%	42%
	42%	39%	37%	36%	36%

Changes in Replacement Rates				
Claiming Behaviors	Labor Supply	Spouse's Demographics	Spouse's Claiming Behaviors	Spouse's Labor Supply
0.027 ***	0.030 ***	0.000		
0.040 ***	0.086 ***			
0.072 ***	0.067 **			
0.084	0.062			

Percent of Actual Change				
Claiming Behaviors	Labor Supply	Spouse's Demographics	Spouse's Claiming Behaviors	Spouse's Labor Supply
23.08%	25.52%	0.34%	18.20%	28.20%
25.64%	55.91%			
50.23%	46.73%			
56.62%	41.79%			

Just women

Changes in Replacement Rate									
Demographics	Marital Status			Claiming behaviors			Labor Supply		
	Married	Widowed	Divorced	Worked less than 40 quarters	Worked less than 40 quarters	Worked less than 40 quarters	Worked less than 40 quarters	Worked less than 40 quarters	Worked less than 40 quarters
	** -0.001	0.001	0.001	*	0.009	*** -0.001			
	*** -0.004 **	0.005 ***	0.003 ***	***	0.011 ***	*** -0.001			
	*** -0.008 ***	0.005 ***	0.001 ***	*	0.002	*** -0.001			
	*** -0.008 ***	0.005 ***	0.002 ***	*	0.024 ***	*** 0.002			
	*** -0.008 ***	0.003 ***	0.000 ***		0.037 ***	*** 0.000			
	*** -0.007 ***	0.006 ***	0.000 ***		0.036 ***	*** -0.001			

Percent of Actual Change							
Demographics	Marital Status			Claiming Behavior		Labor Supply	
	Married	Widowed	Divorced	Worked less than 40 quarters	Worked less than 40 quarters	Quarter worked (linear)	
	7.40%	-2.94%	4.23%	3.99%	25.51%	-2.05%	34.85%
	3.49%	-7.06%	7.85%	5.03%	17.72%	-1.05%	50.01%
	7.90%	-10.77%	7.64%	1.22%	2.90%	-1.19%	59.65%
	5.96%	-8.41%	5.30%	1.99%	25.24%	1.61%	38.40%
	7.61%	-6.31%	2.48%	0.34%	27.85%	0.07%	35.24%
	5.82%	-5.32%	4.75%	0.14%	26.66%	-0.60%	34.43%

Table 13: Median ratio of lifetime benefits over contributions , MINT (present value)

	HRS 1931-1935	HRS 1936-1941	War baby	Early boomers	Middle boomers	Late boomers	Generataion X
All	1.57	1.59	1.38	1.29	1.27	1.23	1.23
Never married	1.43	1.42	1.22	1.18	1.21	1.19	1.18
Married	1.53	1.55	1.36	1.28	1.25	1.23	1.23
Widowed	2.57	2.52	2.01	1.63	1.48	1.40	1.42
Divorced	1.47	1.65	1.41	1.32	1.28	1.20	1.21

Notes: Amounts are in 2012 real dollars. Present values are calculated at the time of first receiving benefits. Contributions mean payroll taxes paid, including both employee and employer contributions. Present values of benefits and contributions are calculated on individual basis, except for married couples where the sum of benefits and contributions over the life of the spouses is considered. The real discount rate for accumulation of both contributions and benefits is 2 percent. Individuals who die before receiving Social Security benefits are not included.