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Social Security as a Retirement Resource for Near-Retirees

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Summary

Social Security benefits are the major source of income and wealth for retirees. In 2002, 66 percent of aged beneficiaries (those aged 65 or older) received at least half of their income from Social Security benefits. For 22 percent of aged beneficiaries, Social Security was their only source of income. These benefits are especially important for low earners, widows, and certain other groups of retirees. Moreover, benefits are now almost universal. The proportion of the aged population receiving Social Security benefits rose from 69 percent in 1962 to 90 percent in 2002.

A number of recent studies attempt to examine the adequacy of retirement resources for people approaching retirement. For example, a widely cited 2001 study by Edward Wolff concludes that the Social Security wealth (adjusted for inflation) of people aged 47 to 64 declined from 1983 to 1998. Wolff's result is unexpected, because real Social Security benefits for newly retired workers are structured to grow in line with average wages in the economy. Greater longevity also increases the lifetime value of Social Security benefits, although the scheduled increase in the age of eligibility for full retirement benefits dampens this effect. Wolff, however, did not have access to the earnings histories of the people in the survey used for his analysis. He therefore based his estimates of Social Security benefits and wealth on only a single year of individual earnings, from which he estimated lifetime earnings.

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This paper uses better, more comprehensive information to examine Social Security benefits as a retirement resource for individuals recently reaching retirement and those who can expect to retire in the near future. Specifically, it looks at people turning age 61 in 1988 through 2007 (those born from 1927 to 1946), because 62 is the age of first eligibility for Social Security retirement benefits. In contrast to Wolff's analysis, this analysis is based primarily on actual data on lifetime earnings, which yield estimates of Social Security benefits that are much more accurate than those generally available.

The data for this analysis come from the Social Security Administration's project for Modeling Income in the Near Term (MINT). The MINT data files include the Social Security Administration's administrative records on earnings and benefits matched to survey responses from the Census Bureau's Survey of Income and Program Participation. Because of the extensive scope of the data set, this analysis requires considerably less use of imputations and projections than did most previous studies. Imputations and projections that were required were done by MINT modelers using sophisticated analytical methods. The results suggest that Social Security wealth increased considerably faster than estimated by Wolff.

This paper analyzes several different measures of Social Security benefits and examines how they have changed from one cohort to another. Among its findings are the following:

- As would be expected, the ratio of annualized Social Security benefits to taxable earnings (the replacement rate) has decreased for recent cohorts because of the phasing in of an increase in the age of eligibility for full retirement benefits.
- Nonetheless, both average real annualized benefits and average real Social Security wealth (the present value of the stream of retirement benefits) have increased markedly for successive age cohorts, primarily because of increases in average real wage-indexed taxable earnings.

- For individuals who were not married at age 62, women have substantially lower average annualized benefits than men, but much higher average Social Security wealth because they live longer.

- Between 1998 and 2003, average annualized benefit payouts rose more rapidly for those in higher earnings quintiles than for those in lower earnings quintiles, because of more rapid earnings growth among higher earners.

Introduction

Social Security benefits are the major source of income and wealth for retirees. In 2002, 66 percent of aged beneficiaries (65 or older) received at least half of their income from these benefits, and for 22 percent these benefits were the only source of income (Social Security Administration 2004). These benefits are especially important for low earners and for certain population subgroups, such as widows. Moreover, benefits are now almost universal. The proportion of the aged population receiving Social Security benefits rose from 69 percent in 1962 to 90 percent in 2002.

This paper analyzes Social Security benefits as a retirement resource for today's near-retirees and for earlier cohorts of near-retirees. The near-retirees in this study are people who reach age 61 during the 1988–2007 period. One reason for selecting these birth-year cohorts is that these individuals are not likely to be markedly affected by possible future cuts in benefits; and we choose age 61 because 62 is the age of first eligibility for Social Security retired-worker and spouse benefits. We examine how the average values of several benefit measures (Social Security wealth, annualized benefit payout, and earnings replacement rates) have changed from earlier cohorts to today's near-retiree cohort. We examine how within a cohort these benefit measures differ among sex, marital status, and earnings quintile subgroups and how these measures have changed over time. We look at some reasons for these changes and differences and

discuss the effects of earnings, marital behavior, longevity, and Social Security program provisions on these Social Security benefit measures. Our findings can help efforts to understand the economic well-being of the aged and develop proposals to improve the Social Security program.

Other studies have examined the retirement resources of near-retirees (see, for example, Wolff 2001; Engen, Gale, and Uccello 2000; Bernheim 1993; and Congressional Budget Office 1993). A number of these studies focused on other types of retirement resources, such as private pension and private asset wealth. Those that include Social Security estimates generally are plagued by serious data problems, especially inaccurate estimates of Social Security benefits over the period of benefit receipt.[1] Benefit estimates based on inaccurate earnings estimates are commonly used to evaluate this component of total retirement wealth. Wolff (2001), for example, estimated lifetime earnings based on a single year of earnings, which in turn were used to calculate the Social Security retirement wealth of near-retirees. He found that the mean real Social Security wealth of people aged 47–64 increased during the period 1989–1998 but declined during 1983–1998.

This paper provides an in-depth examination of Social Security benefits for a specific group of the retiree population, namely recent near-retirees and those who can expect to retire in the very near future. We compute a variety of benefit measures that

1. Three recent studies—Butrica, Iams, and Smith (2003); Smith (2003); and Smith, Toder, and Iams (2003/2004)—use improved data to study future retirement income. The focus of each of these studies is rather different from that of our study. Butrica, Iams, and Smith examine many forms of retirement and nonretirement income for persons born during the 1926–1965 period and focus on baby boomers. Smith examines many forms of retirement and nonretirement income for persons born during the 1931–1975 period and focuses on how earnings inequality may translate into retirement income inequality. Smith, Toder, and Iams focus on the net redistributive effects of Social Security for birth cohorts ranging from 1931 to 1960.

have not been used in previous studies. We rely primarily on actual earnings history data to examine Social Security benefits as a retirement resource for near-retirees. The use of observed earnings histories allows us to capture the large variation in these histories, unlike methods that estimate earnings histories based on a single earnings equation. The study uses data from the Social Security Administration's project for Modeling Income in the Near Term (MINT). The MINT data files include Social Security Administration (SSA) administrative earnings and benefit history records exact-matched to the 1990–1993 panels of the Survey of Income and Program Participation. Because of the extensive content of this data set, we are able to use fewer imputations and projections than have a number of other studies of the subject. Any imputations and projections that were required were done by MINT modelers using sophisticated methods. Thus, this paper attempts to produce more accurate measures of Social Security benefits by using improved data. Our results suggest that Social Security wealth increased considerably faster than was shown by Wolff.

Data

Modeling Income in the Near Term (MINT) is a large-scale effort that has been under way since the late 1990s. Much of the developmental work was done for the Social Security Administration by analysts at the Urban Institute, RAND Corporation, and Brookings Institution. The starting sample is from the 1990, 1991, 1992, and 1993 panels of the Survey of Income and Program Participation (SIPP). In this survey of the noninstitutionalized population, interviews were conducted once every 4 months for 28–36 months. The SIPP collected information on income components, wealth components,

mortality, marital histories, institutionalization, immigration, various demographic and socioeconomic variables, and many other variables.

As part of the MINT project, SSA administrative records were exact-matched to SIPP data for sample members born during the 1926–1965 period. These administrative records include earnings history, benefit history, and death information through 1999. Exact matches were made for about 92 percent of these persons, and administrative records were imputed by MINT modelers for the remaining 8 percent. For years after the time range of the administrative and survey data, the MINT model projects dates of death, institutionalizations, marital histories, earnings histories, and benefit histories. In addition, individuals are projected to enter the sample by means of immigration. These projections were designed to be generally consistent with the intermediate assumptions of the 2002 Old-Age, Survivors, and Disability Insurance (OASDI) Trustees Report (Board of Trustees 2002). Additional information about MINT imputations and projections is given in Appendix A. For a detailed description of the MINT3 data, see Toder and others (2002).

This study uses MINT3 data files created in April 2003. That data set has notable strengths. First, longitudinal administrative data are available through 1999. Thus, earnings history data are available through age 53 for the youngest birth cohort analyzed (those born in 1946) and through age 72 for the oldest birth cohort (born in 1927). Benefit record information is available for the great majority of members of the eight oldest single-year cohorts (born 1927–1934) and for many members of the next three single-year cohorts (born 1935–1937). Second, the combined SIPP panels provide a large sample. Each of the single-year birth cohorts is represented by a sample of more

than 1,000 persons. Studies of retirement resources of near-retirees typically use much smaller samples.

Definitions and Benefit Measures

This section discusses the empirical constructs of the study: the definition of cohorts of near-retirees and the benefit measures (Social Security wealth, annualized payout, and earnings replacement rates).

Cohorts of Near-Retirees

The unit of analysis is the person and not some larger unit, such as a marital unit or family. In studies that use longitudinal data, the person is often the unit of analysis. The composition of the larger units changes over time. For example, the marital status of most persons changes one or more times during their adult lifetime.

The paper looks at 20 single-year cohorts, that is, those persons reaching age 61 in the 20 years from 1988 through 2007. Each single-year cohort consists of all persons who reach age 61 during that year and are members of the noninstitutionalized population at the end of that year, that is, at the beginning of the year most of them can first receive Social Security retirement benefits.

To facilitate the presentation of results and to avoid small sample sizes for certain sex and marital status subgroups, such as widowers, we combine these 20 single-year cohorts into four groups of five single-year cohorts each. Throughout this paper, the term cohort refers to these 5-year groups; single-year cohorts will be referred to as such. The first or oldest cohort of near-retirees (the 1988 cohort) consists of persons reaching ages 57–61 in 1988. The 1993, 1998, and 2003 cohorts are persons reaching ages 57–61 in

1993, 1998, and 2003. Benefits of cohort members are evaluated as of January 1 of the year they reach 62. To increase comparability among cohorts and among subgroups within a cohort, benefits of all members of a particular cohort are evaluated as of the year they reach a given age (62) rather than as of a given year (for example, 1988).

The MINT population excludes persons reaching age 61 in 1988–1992 who were not eligible for SIPP interviews because after reaching age 61 they died, were institutionalized, or left the country before the first SIPP interviews in 1990–1993. This attrition affects the size and composition of the 1988 cohort but does not affect the other three cohorts. Without appropriate correction for attrition bias, the benefit and earnings measures (median Social Security wealth and so on) for the 1988 cohort are not totally comparable with those of the latter three cohorts. This attrition is relatively small. We attempt to remove the effects of this attrition on the benefit and earnings measures for the 1988 cohort by using attrition factors and thus making these measures comparable with those for the other three cohorts. We compute attrition factors using data from the 1993 cohort of near-retirees. For a description and discussion of our attrition correction method, see Appendix B.

Benefit Measures

Our benefit concept is *shared benefits*. For each year a person is married, the person's shared benefit equals half the benefits received by the couple. It is our view that shared benefit is superior to individual benefit as a measure of the income support the person receives from the OASDI program. The individual benefits of husband and wife often are quite different. However, most married couples share their incomes. For each year a

person is not married, the person's shared benefit equals the benefits received by the person.[2]

Our benefit measures, such as Social Security wealth, include benefits received in the years after the year the person reaches age 61. Our measures include benefits paid from the Old-Age and Survivors (OASI) and Disability Insurance (DI) trust funds, to a worker, spouse, divorced spouse, surviving spouse, or surviving divorced spouse.

Social Security Wealth. For each person with benefits, we compute Social Security wealth—the present value of shared benefits evaluated as of January 1 of the year the person reaches age 62. Real Social Security wealth (SSW) is expressed in prices as of January 1, 2002. Our annual discount rate series consists of the rates of return on OASI trust fund assets. Projected CPI-Ws (Consumer Price Index for Urban Wage Earners and Clerical Workers) and trust fund interest rates are based on the intermediate assumptions of the 2002 Trustees Report.

Annualized SSW Payout. For each person with benefits, we compute an annualized SSW payout (ANNPAYOUT), which is equal to the constant real annual payment over all of the person's potential benefit years that has a present value equal to the person's SSW. As with SSW, ANNPAYOUT is expressed in prices as of January 1, 2002. Potential benefit years consist of all years from the year the person reaches age 62

2. Given the content of the MINT data file, the sharing of benefit income within a larger unit, such as the family, could not be considered.

through the last year before the year of death.[3] After 1999, the year of death is that projected by the MINT model.

ANNPAYOUT, which has not been used in previous studies, is a useful measure of the average annual support provided by Social Security over the years after age 61.[4] ANNPAYOUT is less affected by increases over cohorts or differences within cohorts in longevity than is the SSW measure.[5]

Earnings Replacement Rates. There are a number of possible replacement rate measures. For example, replacement rates have been defined as the percentage of average earnings for the last few years before benefit receipt that are replaced by benefits. Our replacement rates measure the extent to which average *career* earnings are replaced by benefits. One reason for selecting average career earnings for the replacement rate measures is that one goal of the Social Security program is to provide benefits that replace a portion of average career earnings. For each person with some shared earnings, we calculate two earnings replacement rates—one for average wage-indexed shared taxable earnings (TX-REPRATE) and another for average wage-indexed shared less-censored earnings (LC-REPRATE, explained below). TX-REPRATE is somewhat like

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3. For the year of a person's death, the MINT benefit calculator does not credit the person with any individual or shared benefit. For the year the person begins to receive benefits, the benefit calculator credits the person with 12 months of benefits unless that is the year the person dies. Potential benefit years equal 0 for persons who die in the year they reach age 62, equal 1 for persons who die in the year they reach age 63, and so on.

4. A somewhat similar measure is used in Smith, Toder, and Iams (2003/2004).

5. The cohort or cohort subgroup with greater longevity can be said to have additional potential benefit years, most of which will also be years in which the beneficiaries receive real annual benefits that are at least as large as those they received in their earlier years. These additional benefits result in additional SSW. To compute additional ANNPAYOUT, this additional SSW is spread over all potential benefit years. Thus, great longevity usually causes a smaller percentage increase in ANNPAYOUT than in SSW.

the replacement rate measure implicit in OASDI law. LC-REPRATE is our proxy for a total earnings replacement rate; it is superior to TX-REPRATE as a measure of the adequacy of Social Security benefits because its denominator is a better proxy for the person's preretirement standard of living. ANNPAYOUT is the numerator of each of these two replacement rates. Each of these career average earnings measures is computed from shared annual earnings amounts. For each year a person is married, the person's shared earnings equal half of the earnings of the couple. For each year a person is not married, the person's shared earnings equal the person's own earnings.

Taxable earnings (wages and self-employment income) are those below the legislated taxable maximum (the maximum amount of annual earnings included in the calculation of benefits). For each year since 1981, the legislated taxable maximum has been indexed by SSA's average annual wage series; therefore, since 1983 the ratio of the legislated taxable maximum to the average annual wage has been roughly constant at about 2.3 to 2.5. The ratio was 2.3 to 2.4 during 1983–1989 and 2.4 to 2.5 during the 1990s. Before 1983, this ratio was always below 2.3 and varied substantially. The ratio was 1.0 to 1.7 during 1951–1978 and 2.0 to 2.2 during 1979–1982.[6]

Less-censored earnings for a worker are those from employment covered by Social Security that are estimated to be below a hypothetical taxable maximum that for each year was set at about 2.45 times the average annual wage. For years before 1990, the MINT model projects less-censored earnings in excess of the legislated taxable

6. The proportion of all workers (of any age) in covered employment with covered earnings at or above the legislated taxable maximum was 6 percent during 1983–1989 and 5 percent to 6 percent during the 1990s. The percentages during the periods 1951–1978 and 1979–1982 were 15 to 36 and 7 to 10.

maximum.[7] Less-censored earnings are superior to taxable earnings in approximating relative changes in total earnings over cohorts or differences in total earnings within cohorts among socioeconomic subgroups.

We compute average taxable wage-indexed earnings as follows. For each person, shared taxable earnings for each year of the computation period (defined below) are indexed, using the average wage series, to wage levels as of the beginning of the year the person reaches age 62. The indexed earnings are then averaged over the person's computation period. Finally, this average is expressed in prices prevailing as of January 1, 2002, to get a measure of average wage-indexed shared taxable earnings, TX-EARN.[8] The computation period for TX-EARN begins with 1951 or the year the person reaches age 22, whichever comes later, and ends with the year the person reaches age 61. Projected average annual wages in the MINT data file are based on the intermediate assumptions of the 2002 Trustees Report. Average wage-indexed shared less-censored earnings (LC-EARN) are computed in an analogous way.[9]

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7. See Appendix A and Butrica and others (2001) for general descriptions of the MINT method for projecting less-censored earnings. MINT modelers coined the phrase "less-censored earnings."

8. Because the numerator of the replacement rate (ANNPAYOUT) is expressed in January 1, 2002, prices, we need to express the denominator of the replacement rate (TX-EARN) in January 1, 2002, prices. P_{2002} is the CPI as of January 1, 2002, and P_T is the CPI as of January 1 of year T (the year the person reaches age 62). AE_T is average wage-indexed shared taxable earnings indexed to the average wage level prevailing as of January 1 of year T. TX-EARN = $(P_{2002} / P_T)\ AE_T$.

9. The computation period for LC-EARN begins with 1951, or the year the person reaches age 22 or the year the person immigrates to the United States, whichever comes later, and ends with the year the person reaches age 61. Thus, except for immigrants who enter the United States after the year they reach age 22, the computation periods for LC-EARN are the same as those for TX-EARN.

   SSW is evaluated as of January 1 of the year the person reaches age 62. ANNPAYOUT, the numerator of our replacement rates, is derived from SSW. Thus, we want to wage-index LC-EARN, the denominator of LC-REPRATE, to the wage level as of the beginning of the year the person reaches age 62. Making the timing of the numerator and denominator consistent makes LC-REPRATE a better measure of the adequacy of Social Security benefits. We chose to wage-index TX-EARN to the same date as that used for wage-indexing LC-EARN.

A person's TX-REPRATE is the person's ANNPAYOUT expressed as a percentage of the person's TX-EARN. As stated earlier, TX-REPRATE is somewhat like the replacement rate measure implicit in OASDI law. Under that law, a person's initial monthly benefit amount is determined as a percentage of the person's average indexed monthly earnings (AIME) and over time the person's monthly benefit amount is kept constant in real terms.[10] TX-REPRATE's numerator (ANNPAYOUT) is a constant real benefit and is related to the price-indexed monthly benefit amount. TX-REPRATE's denominator (TX-EARN) is average wage-indexed taxable earnings from age 22 through age 61. TX-EARN and AIME have some similar features. LC-REPRATE is the percentage of less-censored earnings replaced by Social Security benefits. As stated earlier, LC-EARN is our proxy for a total earnings replacement rate. TX-REPRATE and LC-REPRATE are age-62 replacement rates, that is, they give the percentages of a person's earnings wage-indexed to January 1 of the year the person reaches age 62 that are replaced by the person's constant real annualized payout. As average real economy-wide earnings increase in years after age 61, the person's annualized payout declines relative to average economy-wide earnings.

10. For purposes of determining retired-worker benefits, the worker's AIME is determined as follows. Annual taxable earnings through age 60 are indexed, using the average wage series, to wage levels as of the year the worker reaches age 60; annual earnings after age 60 are not wage-indexed. The sum of the 35 highest earnings is divided by 420 (35 x 12) to get AIME. For disabled workers, the calculation of AIME often uses a shorter computation period (less than 35 years). Given that we use a shared benefit measure, ANNPAYOUT, we needed a shared earnings measure. AIME is a person or individual measure. For various conceptual and data reasons, we could not compute a shared AIME measure.

Findings for All Social Security Program Participants

All of our results are for Social Security program participants, that is, near-retirees with some shared earnings (with positive LC-EARN). The very small group of nonparticipants (near-retirees with no shared earnings) is excluded from this analysis. For each of the four near-retiree cohorts, 94.8 percent to 95.6 percent of program participants have some shared benefits and, therefore, have positive SSW. The tables provide data for program participants regardless of whether they have positive SSW, that is, the tables include participants who have positive taxable earnings but receive no benefits—nearly always because of insufficient quarters of coverage for benefit eligibility or because they die before claiming benefits.

Social Security Wealth (SSW)

Average SSW increases as we move from earlier to later near-retiree cohorts; the medians and means exhibit similar patterns (Table 1). The percentage increase in median SSW from the 1993 cohort to the 1998 cohort (20 percent) is larger than the increases for 1988–1993 (16 percent) and 1998–2003 (12 percent). The growth of average TX-EARN is the main cause of the growth of average SSW: the 1993–1998 percentage increase is greater than the 1988–1993 and 1998–2003 increases. Under Social Security law, the benefit increases as AIME increases. As shown in Table 1, the percentage increases in average TX-EARN are larger than those for average LC-EARN, because legislated taxable maximums were well below the less-censored maximums from the 1950s through the early 1980s. Moreover, the percentage increases in average LC-EARN exceed those in SSA's average annual wage (see Appendix C). Increases in Social Security's full retirement age (discussed later) and other Social Security program factors can affect the

Table 1.
Social Security benefit measures and related measures for cohorts of near-retirees

Measure	Cohort [a]				Percentage change				
	1988	1993	1998	2003	1988–1993	1993–1998	1998–2003	1993–2003	1988–2003
Social Security wealth (SSW, dollars)									
Median	105,624	122,258	147,003	164,961	16	20	12	35	56
Mean	108,352	125,588	153,307	173,296	16	22	13	38	60
Annualized payout (ANNPAYOUT, dollars)									
Median	5,580	6,338	7,487	8,292	14	18	11	31	49
Mean	5,382	6,079	7,189	7,952	13	18	11	31	48
Median replacement rate (percent)									
Taxable earnings (TX-REPRATE)	32.6	33.9	32.2	31.0	4	-5	-4	-9	-5
Less-censored earnings (LC-REPRATE)	28.8	30.6	30.0	29.5	6	-2	-2	-4	2
Average wage-indexed earnings (dollars)									
Taxable (TX-EARN)									
Median	16,836	18,454	22,915	26,198	10	24	14	42	56
Mean	16,460	18,309	22,995	26,770	11	26	16	46	63
Less-censored (LC-EARN)									
Median	19,093	20,276	24,437	27,237	6	21	11	34	43
Mean	18,917	20,354	24,775	28,061	8	22	13	38	48
Mean potential benefit years	21.23	21.47	21.97	22.34	1.13	2.33	1.68	4.05	5.23

SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

NOTE: Money amounts are in January 1, 2002, dollars.

a. Persons aged 57–61 in specified year.

growth of SSW and intercohort changes in annualized payouts and replacement rates. Changes in the socioeconomic and demographic composition of cohorts can also affect the trends in our benefit measures.

There are very few studies with which we can compare these results. Wolff (2001) provided estimates of Social Security wealth for the soon-to-retire.[11] He reported

11. Wolff (2001) examined retirement wealth among the soon-to-retire. He did not calculate any measures comparable with our other benefit measures.

that over the period 1983–1998, mean real Social Security wealth declined among the soon-to-retire older U.S. households (47–64 years of age). He attributed this to falling real lifetime earnings, which translate directly to lower real Social Security retirement benefits. When he examined the 47- to 64-year-olds in six 3-year age groups, he found that decreases in mean real Social Security wealth occurred for all but one of the age groups and were particularly marked for the groups aged 56–58, 59–61, and 62–64. In all cases, he found that mean real Social Security wealth declined for the period 1983–1989 and then rose from 1989–1998.

We provide a brief comparison of our results for mean Social Security wealth with those obtained by Wolff for roughly comparable age groups and roughly comparable periods. Our results indicate that between 1988 and 1998, mean real Social Security wealth increased by 39 percent for those aged 57–58 and by 43 percent for those aged 59–61. Wolff found that the increase between 1989 and 1998 was 13 percent for those aged 56–58 and 30 percent for those aged 59–61. Our results show consistently higher increases than those reported by Wolff. This discrepancy probably stems from differences in the underlying earnings histories used to calculate Social Security benefits. Whereas our computations are based largely on actual earnings histories, Wolff uses lifetime earnings generated from an analysis of single-year, cross-section data. Wolff's methodology markedly understates increases in average lifetime earnings. In addition, realistic variability in lifetime earnings is notoriously difficult to project using standard wage equations.

We do not find any evidence of declining average real Social Security wealth in our results that span the period 1988–2003. Instead, successive cohorts of near-retirees

receive higher average real amounts than previous cohorts. For our cohorts aged 57–61, we find a 1993–1998 increase in mean real Social Security wealth of 22 percent, about the same percentage increase that Wolff found for his sample of persons aged 56–61 over the longer period of 1989–1998.

Annualized SSW Payout (ANNPAYOUT)

Average real annualized payout also increases as we move from earlier to later near-retiree cohorts; the medians and means for annualized payouts exhibit similar patterns (Table 1). The relative 1993–1998 increase in median ANNPAYOUT (18 percent) is larger than the increases for 1988–1993 (14 percent) and 1998–2003 (11 percent). Notice that the relative increases in average ANNPAYOUT are slightly smaller than the corresponding increases in average SSW. This difference is due to small increases in average potential benefit years (all years from age 62 through the year before death); the increases in mean potential benefit years are 1.0 percent for 1988–1993, 2.3 percent for 1993–1998, and 1.7 percent for 1998–2003. These increases in potential benefit years are the actual and projected increases in life expectancy.

Taxable Earnings Replacement Rate (TX-REPRATE)

Recall that TX-REPRATE is the annualized benefit payout expressed as a percentage of average career taxable earnings (TX-EARN). Both the taxable maximum and the average indexed monthly earnings are indexed using the SSA average annual wage series. The bracket endpoints in the progressive formula for computing initial Social Security benefits also are wage-indexed by this wage series. Thus, in the absence of changes in Social Security program provisions such as a change in the full retirement age

(sometimes referred to as the normal retirement age) one might think that TX-REPRATE would change very little as we move from earlier cohorts to later cohorts with higher average TX-EARN.[12]

As we move from earlier to later near-retiree cohorts, the median taxable earnings replacement rate first increases (by 4 percent for 1988–1993) and then decreases (by 5 percent for 1993–1998 and by 4 percent for 1998–2003).[13] We discuss three causes of the 1993–2003 declines in median TX-REPRATE:

- The phase-in of increases in Social Security's full retirement age,
- Larger intercohort percentage increases in TX-EARN than in the SSA average annual wage, and
- The interaction between the growth of women's labor force activity and the benefit formula.

We then discuss another cause of intercohort changes in TX-REPRATE—a difference in the wage-indexing of average indexed monthly earnings and TX-EARN.

Phased Increase in Full Retirement Age. A key cause of the 1993–2003 declines in TX-REPRATE is the phase-in of increases in Social Security's full retirement age (FRA). Increases in the FRA for the later cohorts reduce lifetime benefits. The scheduled benefit reductions are phased in so that once they begin they are larger the later the year of birth.

12. Note, however, that the taxable maximum was generally not wage-indexed before the early 1980s.

13. In this paper, we do not present means of individual replacement rates. Such means are strongly affected by the relatively small number of very high individual replacement rates. We estimate some group replacement rates. The replacement rate of a group (cohort or subgroup of a cohort) is mean ANNPAYOUT of the group as a percentage of mean earnings of the group.

    For all program participants, group taxable earnings replacement rates are similar to the corresponding median TX-REPRATE; for group replacement rates, the intercohort increase is a bit smaller and the intercohort decreases are slightly larger.

The effect is to gradually lower the TX-REPRATE numerator. Increases in the FRA begin with persons reaching age 62 in 2000 (a 2-month increase in FRA) and continue through those reaching age 62 in 2005 (a 12-month increase in the FRA). These increases do not affect the individual benefits of persons in the 1988 and 1993 cohorts, but they do affect the individual retired-worker and spouse benefits of persons in four of the five single-year cohorts in the 1998 cohort (those reaching age 62 in 2000–2003) and all five of the single-year cohorts in the 2003 cohort (who reach age 62 in 2004–2008).[14] In both the 1998 and 2003 cohorts, the median age of first receipt of shared benefits is 62 and the mean is 62.9. Persons in the middle single-year cohort of the 1998 and 2003 cohorts reach age 62 in 2001 and 2006. For workers who reach age 62 in 2001 and take retired-worker benefits at age 62, the FRA increases would reduce their benefit by 2.1 percent; their counterparts reaching age 62 in 2006 would see their benefits reduced by 6.2 percent.[15] The comparable reductions for spouse benefits are slightly larger (2.2 percent and 6.7 percent).[16] For more than 70 percent of our beneficiaries, the first benefit they receive is a retired-worker or spouse benefit. The above facts suggest that

14. The benefit reductions for surviving spouse beneficiaries are phased in starting with persons reaching age 60 in 2000.

15. These benefit reduction percentages are for persons who do not postpone benefit receipt in response to the FRA increases. Persons who postpone benefit receipt also experience decreases in their ANNPAYOUT.

16. The comparable reductions for surviving spouses are smaller (0 percent and 2.8 percent). The FRA increases do not affect disabled-worker benefits.

    For workers who reach age 62 in 2001 (2006) and start retired-worker benefits at age 63, the FRA increases would reduce their benefit by 2.6 (7.7) percent. The benefit reductions for spouses are larger (3.3 percent and 10.0 percent). For retired-worker and spouse benefits, the percentage benefit reduction caused by the FRA increase is smaller for those who take benefits at age 62 than for those who take benefits at age 63, because with the higher FRA the average monthly benefit reduction factor is smaller for those who take benefits at age 62. For example, with the higher FRA the monthly benefit reduction factor is 5/9 percent for each of the first 36 months of early receipt of retired-worker benefits and 5/12 percent for each of the remaining months of early benefit receipt.

FRA increases can account for a large part of the decreases in TX-REPRATE as we move from the 1993 cohort to later cohorts.

Larger Intercohort Percentage Increases in TX-EARN than in SSA Average Annual Wage. As pointed out earlier, the intercohort percentage increases in TX-EARN are larger than those in the SSA average annual wage. This growth differential may well cause a part of the 1993–2003 decrease in TX-REPRATE. The progressive benefit formula has three AIME brackets. AIME and TX-EARN are both measures of average wage-indexed career taxable earnings. Because the growth rate of TX-EARN exceeds that of the SSA wage series used to adjust the formula endpoints, the proportion of AIME falling in the upper brackets of the benefit formula, where the replacement factors are lower, increases over time. Thus the numerator of TX-REPRATE tends to fall relative to the denominator.

Interaction Between Growth of Women's Labor Market Activity and the Benefit Formula. This interaction may also account for part of the 1993–2003 decrease in TX-REPRATE. Persons can receive benefits based on their own earnings (worker benefits) or on the earnings of their spouses or deceased spouses (auxiliary benefits). The person will receive the larger of the two benefits. The lifetime earnings of most wives are lower than those of their husbands. Most women receive auxiliary benefits, and the great majority of men receive worker benefits. Because the benefits of most women depend on the higher earnings of their husbands, a sizable part of the growth in women's earnings relative to men's earnings does not lead to higher benefits for women. Thus, ceteris paribus, over time the numerator of TX-REPRATE tends to fall relative to the denominator.

Difference in Wage-Indexing. A person's retired-worker benefits are based on that person's average indexed monthly earnings. In the computation of AIME, the person's earnings are wage-indexed to the level of the SSA average annual wage prevailing for the calendar year in which the person attains age 60.[17] Taxable earnings, TX-EARN (the denominator of the person's taxable earnings replacement rate, or TX-REPRATE) is wage-indexed to the level of the SSA average annual wage prevailing at the beginning of the year in which that person attains age 62. These differences in indexing can affect intercohort changes in replacement rates. For each birth-year group, the increase in the average annual wage during ages 60–62 increases the denominator of their TX-REPRATE but not the numerator. Intercohort differences in the actual percentage rate of increase in the average annual wage during ages 60–62 result in differential percentage increases in TX-REPRATE's denominator, with larger percentage increases in the average annual wage producing larger percentage declines in TX-REPRATE. The measured effects in our data are rather small. This phenomenon increases TX-REPRATE for the 1993 cohort relative to the 1988 cohort by 0.3 percent, decreases TX-REPRATE for the 1998 cohort relative to the 1993 cohort by 1.4 percent, and increases TX-REPRATE for the 2003 cohort relative to the 1998 cohort by 1.2 percent.[18]

17. The first cost-of-living adjustment to benefits does not occur until the end of the year the person reaches age 62.

18. From the calendar year they reached age 60 to the beginning of the year they reached age 62, members of the 1988 cohort saw the average annual wage increase by about 6.4 percent. The comparable figures for the later cohorts are 6.0 percent (1993), 7.5 percent (1998), and 6.3 percent (2003).

Less-Censored Earnings Replacement Rate (LC-REPRATE)

As we move from earlier to later near-retiree cohorts, the median less-censored earnings replacement rate also first increases (by 6 percent for 1988–1993) and then decreases (by 2 percent for 1993–1998 and for 1998–2003). Notice that the relative decreases in median LC-REPRATE are smaller and that the relative increase is larger than the corresponding decreases and increase in median TX-REPRATE. The reason for the difference is that the relative intercohort increases in average TX-EARN are a bit larger than those for average LC-EARN (Table 1).

Findings by Sex and Marital Status

We now turn to results for sex and marital status subgroups. Marital status is as of the beginning of the year the person reaches age 62. Table 2 briefly describes several characteristics of each cohort of near-retirees. Educational attainment levels have steadily risen from earlier to later near-retiree cohorts. In the 2003 cohort, 28 percent of near-retirees are college graduates compared with only 17 percent just 15 years earlier. The percentage of people who identified themselves as white decreased slightly, the percentage identifying themselves as Hispanic rose, and the percentage of foreign-born individuals among near-retirees increased markedly. The 2003 cohort has the largest share of divorced individuals, and the mean number of marriages entered during one's lifetime has risen slightly.

Table 2.
Selected characteristics of near-retirees, by cohort

Characteristic	1988	1993	1998	2003
Male (percent)	46.74	48.20	47.65	48.43
Education (percent)				
Dropout	28.48	24.71	18.59	14.92
High school graduate	54.64	56.03	59.95	57.58
College graduate	16.87	19.27	21.46	27.50
Number of grades completed (mean)	12.03	12.32	12.75	13.21
Race (percent)				
White	88.05	86.60	86.95	85.56
Black	8.98	9.95	9.62	10.09
Native American	0.60	0.71	0.70	0.56
Asian	2.36	2.73	2.72	3.79
Hispanic (percent)	5.77	6.72	6.77	7.51
Foreign born (percent)	7.96	9.92	10.35	11.57
Marital status at age 62 (percent)				
Never married	4.08	4.23	4.32	5.10
Women	1.62	2.06	2.22	2.72
Men	2.46	2.17	2.10	2.38
Married	74.50	74.46	73.24	71.35
Women	35.39	34.60	34.78	33.52
Men	39.11	39.86	38.46	37.83
Widowed	12.36	10.06	7.83	7.55
Woman	10.42	8.61	6.63	5.99
Men	1.94	1.45	1.20	1.56
Divorced	9.06	11.26	14.61	16.00
Woman	5.64	6.54	8.72	9.34
Men	3.43	4.72	5.89	6.66
Number of marriages (mean)	1.29	1.35	1.39	1.42
Sample size (unweighted)	[a] 6,602	6,584	7,524	9,562
Total number of near-retirees (weighted)	10,372,401	10,032,734	11,114,759	13,910,898

SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

a. Not corrected for attrition.

Social Security Wealth (SSW)

For each marital status subgroup, SSW is greater for women than men (Table 3a). For each of the not-married subgroups, SSW is greater for women because on average they have a longer period of benefit receipt. For the married subgroup, SSW is greater for women for two reasons: (1) their longer period of benefit receipt and (2) our use of a

Table 3a.
Median Social Security wealth (SSW), by cohort, sex, and marital status at age 62 (in 2002 dollars)

Sex	Total	Never married	Married	Widowed	Divorced
			1988		
All participants	105,624	70,101	105,077	125,149	91,966
Women	120,660	78,347	123,792	128,049	107,271
Men	87,018	73,288	92,312	107,626	75,255
			1993		
All participants	122,258	80,195	122,107	134,931	123,063
Women	146,224	95,595	149,838	142,041	147,314
Men	99,454	60,214	101,214	112,293	96,411
			1998		
All participants	147,003	115,961	145,385	167,753	153,148
Women	175,531	127,556	177,171	177,615	177,847
Men	121,767	108,973	121,625	129,375	121,798
			2003		
All participants	164,961	119,263	163,742	188,613	171,960
Women	195,822	133,549	196,891	203,534	198,649
Men	136,700	105,137	137,700	152,987	137,421

SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

shared concept of wealth rather than an individual concept.[19] Women in every cohort and every marital status subgroup have considerably more years of benefit receipt than men. For example, for married or divorced women, the median number of years of benefit receipt is 26, compared with only 17 for married men and 14 for divorced men in the 2003 cohort. The never-married receive the lowest SSW in each gender group, and the ever-married have roughly similar amounts.

For each sex and marital status subgroup, median SSW is greater for the 2003 cohort than for the 1988 cohort. The relative change in the amount of SSW between the 1988 cohort and the 2003 cohort is similar for men and women, increasing by 57 percent

19. Most married women receive smaller annual benefits (auxiliary or worker) than their husbands. Thus, shared benefit is greater than individual benefit for most married women and less than individual benefit for most married men.

and 62 percent. The patterns of relative increase are somewhat different among marital status subgroups.

Annualized SSW Payout (ANNPAYOUT)

The ANNPAYOUT amounts given in Table 3b show that not-married women receive smaller amounts than not-married men across the four cohorts. ANNPAYOUT spreads SSW over potential benefit years. Because median potential benefit years are greater for women than men, the ratio of female to male median amounts is considerably lower for ANNPAYOUT than for SSW. For the never-married, the ratio of women's ANNPAYOUT to men's is less than one because women have lower taxable earnings. For the divorced, the reason that women's ANNPAYOUT is less than men's is probably that these divorced women typically have lower earnings and these divorced men have

Table 3b.
Median annualized payout (ANNPAYOUT), by cohort, sex, and marital status at age 62 (in 2002 dollars)

Sex	Total	Never married	Married	Widowed	Divorced
			1988		
All participants	5,580	5,183	5,533	6,228	5,411
Women	5,646	4,841	5,645	6,087	4,919
Men	5,513	5,663	5,428	6,918	6,570
			1993		
All participants	6,338	4,837	6,281	6,948	6,564
Women	6,425	4,614	6,476	6,854	6,049
Men	6,232	5,019	6,116	7,568	7,526
			1998		
All participants	7,487	6,755	7,414	8,130	7,808
Women	7,520	5,769	7,567	7,955	7,256
Men	7,446	7,792	7,265	9,406	8,926
			2003		
All participants	8,292	6,964	8,231	8,761	8,771
Women	8,316	6,625	8,396	8,663	8,137
Men	8,249	7,254	8,074	9,521	10,039

SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

higher earnings than their ex-spouses. Thus divorced men tend to receive higher benefits based on their own higher earnings, and divorced women tend to receive lower benefits (divorced spouse benefits or worker benefits based on their own lower earnings). For the married, median ANNPAYOUT is slightly larger for women than for men.

In each of the four cohorts, never-married women receive the lowest ANNPAYOUT amounts, and women in other groups receive somewhat similar amounts. Among men, the widowed and divorced have substantially larger ANNPAYOUT amounts than men in the other two subgroups. Taxable earnings (TX-EARN) of widowed and divorced men are generally higher than those of never-married men. The married share the benefits received by the couple; the benefit received by the wife is usually smaller than that received by the husband.

For each sex and marital status subgroup, median real annualized payout is greater for the 2003 cohort than for the 1988 cohort. Overall, men's ANNPAYOUT amounts go up by 50 percent between the 1988 and 2003 cohorts, compared with 47 percent for women. For each marital status subgroup, the increases are rather similar for men and women.

Taxable Earnings Replacement Rate (TX-REPRATE)

Overall, TX-REPRATE is a bit higher for women than for men; for the 2003 cohort, TX-REPRATE is 33 percent for women and 29 percent for men (Table 3c). Among women, TX-REPRATE is highest for widows and quite similar for women in other marital status subgroups. For the 2003 cohort, TX-REPRATE for widows is 44 percent compared with rates between 30 percent and 32 percent for women in the other subgroups. Among men, TX-REPRATE is lowest for the married and highest for the

Table 3c.
Median taxable earnings replacement rate (TX-REPRATE), by cohort, sex, and marital status at age 62 (in percent)

Sex	Total	Never married	Married	Widowed	Divorced
			1988		
All participants	32.6	30.4	31.6	45.2	35.2
Women	35.6	28.9	34.0	47.0	33.5
Men	30.1	32.8	29.7	38.1	39.3
			1993		
All participants	33.9	35.9	32.7	46.5	36.2
Women	37.0	34.9	35.5	47.8	35.2
Men	31.1	36.7	30.2	39.3	37.8
			1998		
All participants	32.2	31.3	31.2	42.9	34.6
Women	34.2	30.5	33.4	43.1	34.0
Men	29.9	31.9	29.0	41.0	35.4
			2003		
All participants	31.0	31.4	29.9	42.5	33.0
Women	32.9	30.0	32.0	43.6	32.0
Men	29.0	32.6	28.1	38.8	34.2

SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

widowed and divorced. Widowed and divorced men have markedly larger ANNPAYOUT amounts than men in the other two subgroups. Married men have higher TX-EARN than the other three subgroups.

For seven of the eight subgroups, TX-REPRATE is higher for the 1993 cohort than for the 1988 cohort; between these two cohorts, TX-REPRATE rose by 4 percent for women and 3 percent for men. In subsequent years, replacement rates fell. For each subgroup, median TX-REPRATE is lower for the 2003 cohort than for the 1993 cohort; between the two cohorts, TX-REPRATE fell by 11 percent for women and 7 percent for men.

"Less-Censored" Earnings Replacement Rate (LC-REPRATE)

Values for LC-REPRATE are, as is to be expected, lower than the corresponding values for TX-REPRATE, as seen in Table 3d. Overall, LC-REPRATE is higher for women than men, as observed with TX-REPRATE; for the 2003 cohort, LC-REPRATE is 31 percent for women and 28 percent for men. The widowed have the highest replacement rates. For seven of the eight subgroups, LC-REPRATE is higher for the 1993 cohort than for the 1988 cohort. For seven of the eight subgroups, LC-REPRATE is lower for the 2003 cohort than for the 1993 cohort.

Related Measures

Three measures that help explain the findings for the four benefit measures (SSW, ANNPAYOUT, TX-REPRATE, and LC-REPRATE) are presented in Tables 3e–3g.

Table 3d.
Median less-censored earnings replacement rate (LC-REPRATE), by cohort, sex, and marital status at age 62 (in percent)

Sex	Total	Never married	Married	Widowed	Divorced
			1988		
All participants	28.8	28.6	27.4	40.8	32.2
Women	31.4	26.8	29.5	41.6	31.0
Men	26.4	29.7	25.6	36.0	35.7
			1993		
All participants	30.6	32.6	29.1	42.7	34.1
Women	33.7	30.5	31.8	44.3	33.0
Men	28.1	33.9	27.3	36.9	35.6
			1998		
All participants	30.0	30.2	28.9	39.8	32.6
Women	32.2	30.3	31.2	40.5	32.4
Men	28.0	30.1	27.1	37.7	33.1
			2003		
All participants	29.5	29.3	28.4	41.2	32.1
Women	31.3	29.2	30.3	41.7	31.0
Men	27.6	29.8	26.7	37.9	33.1

SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

Table 3e.
Median taxable earnings (TX-EARN), by cohort, sex, and marital status at age 62 (in 2002 dollars)

Sex	Total	Never married	Married	Widowed	Divorced
			1988		
All participants	16,836	15,235	17,697	13,216	14,214
Women	15,323	14,141	16,562	12,894	13,157
Men	18,629	15,392	18,937	16,411	16,817
			1993		
All participants	18,454	11,581	19,431	14,226	16,960
Women	16,831	10,219	18,144	13,463	16,012
Men	20,065	14,032	20,460	19,631	18,858
			1998		
All participants	22,915	18,461	23,745	18,666	21,589
Women	21,349	13,836	22,560	17,818	19,907
Men	24,859	22,910	24,936	22,853	24,858
			2003		
All participants	26,198	18,375	27,473	19,787	25,164
Women	24,207	16,595	25,977	18,395	23,407
Men	28,681	21,517	29,228	24,574	28,005

SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

Table 3e gives taxable earnings (TX-EARN), Table 3f gives less-censored earnings (LC-EARN), and Table 3g gives potential benefit years.

Findings by Earnings Quintiles

Information for the four cohorts by quintiles of less-censored earnings is shown in Table 4 and Charts 1 and 2. LC-EARN is superior to TX-EARN in approximating quintile rankings by total average wage-indexed earnings. Within each of the 20 single-year cohorts of near-retirees, we rank persons by LC-EARN and group them into quintiles. A person's quintile location in their 5-year cohort is their quintile location within their single-year cohort.

Table 3f.
Median less-censored earnings (LC-EARN), by cohort, sex, and marital status at age 62 (in 2002 dollars)

Sex	Total	Never married	Married	Widowed	Divorced
			1988		
All participants	19,093	16,625	20,204	15,044	15,324
Women	17,552	14,984	19,029	14,404	14,092
Men	21,003	15,861	21,365	18,111	17,659
			1993		
All participants	20,276	12,566	21,580	15,084	18,577
Women	18,593	10,998	20,351	14,334	17,427
Men	22,143	15,758	22,557	21,727	20,134
			1998		
All participants	24,437	18,739	25,452	19,649	23,029
Women	22,834	13,836	24,130	18,930	20,852
Men	26,363	23,282	26,577	23,897	25,976
			2003		
All participants	27,237	19,373	28,736	20,823	25,825
Women	25,283	16,839	27,036	19,077	24,408
Men	29,714	22,365	30,386	25,070	29,234

SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

Table 3g.
Median potential benefit years, by cohort, sex, and marital status at age 62

Sex	Total	Never married	Married	Widowed	Divorced
			1988		
All participants	22	19	22	23	18
Women	24	24	25	23	22
Men	17	16	19	18	13
			1993		
All participants	22	18	22	23	20
Women	25	27	26	24	25
Men	17	14	18	14	15
			1998		
All participants	22	20	22	24	22
Women	26	24	26	25	26
Men	18	18	18	14	15
			2003		
All participants	22	19	22	24	22
Women	27	24	26	26	28
Men	18	15	19	19	16

SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

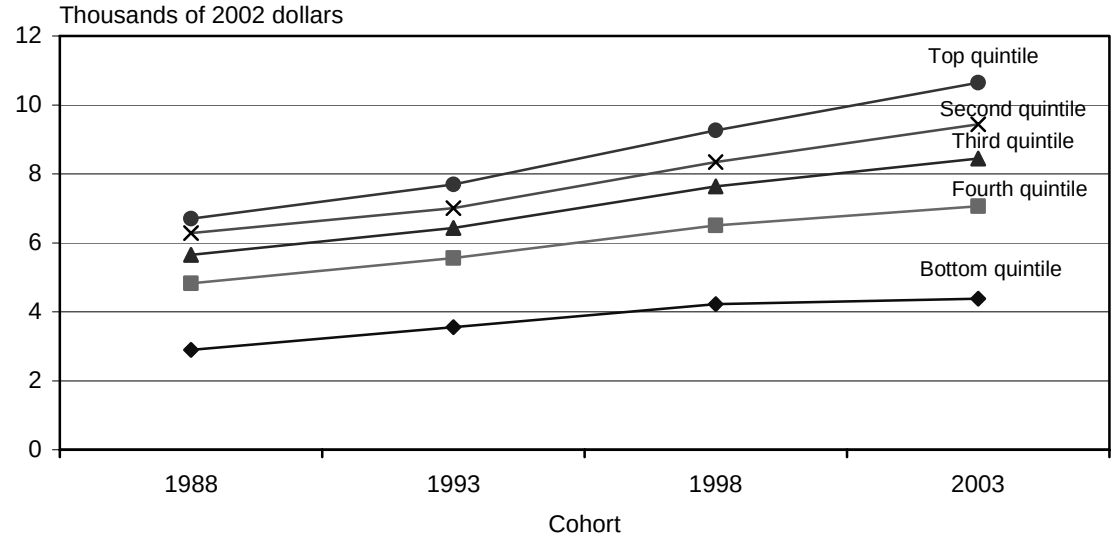
Table 4.
Medians of Social Security benefit measures and related measures for cohorts of near-retirees, by less-censored earnings quintiles

Quintile	1988	1993	1998	2003
		Social Security wealth (SSW, in dollars)		
Bottom	47,538	57,888	69,173	76,649
Second	95,893	109,787	130,169	146,100
Third	110,430	137,730	161,425	186,338
Fourth	131,188	152,326	193,914	215,300
Top	146,868	170,219	220,816	251,363
		Annualized payout (ANNPAYOUT, in dollars)		
Bottom	2,897	3,552	4,226	4,382
Second	4,824	5,561	6,508	7,066
Third	5,655	6,429	7,640	8,448
Fourth	6,283	7,004	8,340	9,437
Top	6,703	7,697	9,266	10,646
		Taxable earnings replacement rate (TX-REPRATE, in percent)		
Bottom	57.7	60.5	58.0	56.8
Second	40.5	42.5	39.4	39.6
Third	33.1	34.8	33.0	32.0
Fourth	29.4	29.9	28.4	27.0
Top	25.0	25.3	23.9	22.7
		Less-censored earnings replacement rate (LC-REPRATE, in percent)		
Bottom	55.4	57.3	54.4	52.8
Second	37.7	40.1	37.4	38.1
Third	29.9	31.9	31.2	30.6
Fourth	25.2	26.9	26.3	26.0
Top	20.8	22.0	21.9	21.6
		Taxable earnings (TX-EARN, in dollars)		
Bottom	4,940	5,852	7,113	7,342
Second	11,863	13,161	16,579	17,821
Third	17,077	18,693	23,087	26,381
Fourth	21,440	23,594	29,408	34,832
Top	26,733	29,931	37,982	46,258
		Less-censored earnings (LC-EARN, in dollars)		
Bottom	5,114	6,091	7,711	7,923
Second	12,953	14,008	17,321	18,512
Third	19,111	20,282	24,465	27,241
Fourth	24,685	26,121	31,619	36,332
Top	31,599	33,975	41,062	48,299
		Potential benefit years		
Bottom	20	19	20	21
Second	21	21	21	21
Third	22	23	22	23
Fourth	21	22	24	23
Top	23	23	24	24

SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

NOTE: Money amounts are in January 1, 2002, dollars.

Chart 1.
Median annualized payout for near-retirees, by less-censored earnings quintile

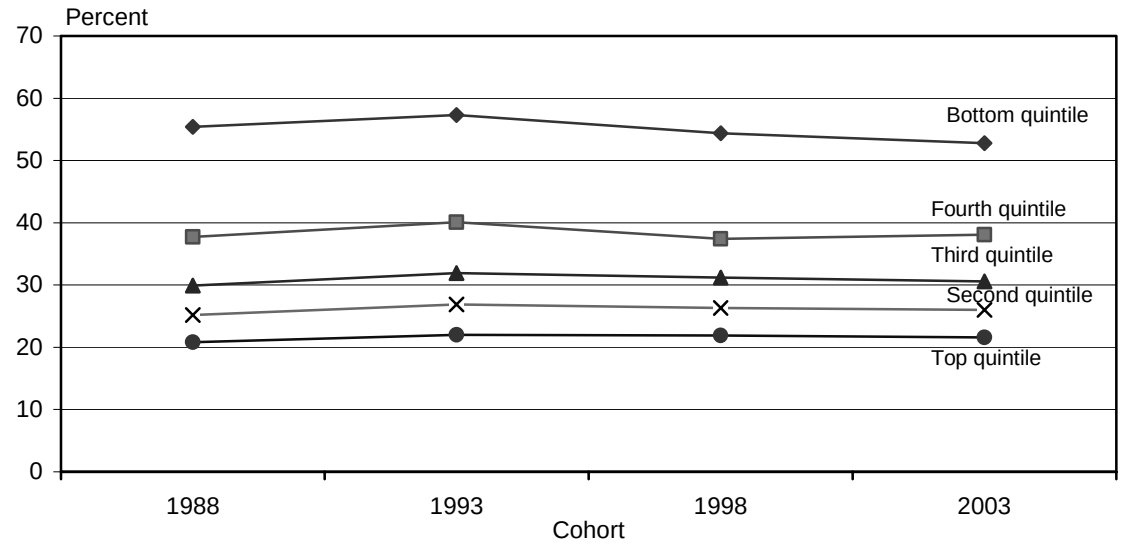


SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

As expected, the median annualized payout increases markedly as we move to higher earnings quintiles (Chart 1). For the 2003 cohort, for example, the top quintile's ANNPAYOUT is about 2.4 times that of the bottom quintile.

For each less-censored earnings quintile, median annualized payout increases as we move from earlier to later cohorts. Each quintile has about the same 1993–1998 relative increase in ANNPAYOUT (from 17 percent to 20 percent). In addition, each of the top four quintiles has about the same 1988–1993 relative ANNPAYOUT increase (from 11 percent to 15 percent). However, the 1998–2003 relative increases rise consistently from the lowest to the highest quintile (from 4 percent to 15 percent). The pattern of differences in 1998–2003 earnings growth by quintiles is the main cause of the pattern of differences in ANNPAYOUT growth by quintiles. The 1998–2003 relative increases in median taxable earnings and in median less-censored earnings rise

Chart 2.
Median less-censored earnings replacement rates for near-retirees, by earnings quintile



SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

consistently from the lowest to the highest quintile (from 3 percent to between 18 percent and 22 percent).

Again as expected, the median less-censored earnings replacement rate (LC-REPRATE) falls sharply as we move to higher earnings quintiles, that is, it shows a lot of progressivity (Chart 2). Recall that under OASDI's progressive benefit formula, monthly benefit amount decreases as a percentage of average indexed monthly earnings as AIME increases. For the 2003 cohort, the median LC-REPRATE is 53 percent for the bottom quintile and 22 percent for the top quintile.

For each quintile, LC-REPRATE first increases and then decreases as we move from earlier to later near-retiree cohorts. Median LC-REPRATE for each quintile is a bit lower for the 2003 cohort than for the 1993 cohort. The relative 1993–2003 decreases are a bit larger for the bottom two quintiles than for the top three quintiles. One can say that the LC-REPRATE shows a bit less progressivity in 2003 than in 1993. From the 1993

cohort to the 2003 cohort, the ratio of the top quintile's replacement rate to that of the bottom quintile rises from 0.384 to 0.409; the percentage-point shortfall of the top quintile's replacement rate from that of the bottom quintile drops from 35.3 percentage points to 31.2 percentage points.

Additional Measures

We looked at two additional benefit measures; size-adjusted measures and measures for the population not receiving Disability Insurance benefits.

Size-Adjusted Measures

All the results presented and discussed in the previous sections are for shared benefits (and shared earnings). For each year, the person's shared benefit equals the per capita benefit of the unit (married couple or unmarried person) to which the person belongs.

The results presented briefly here and in some detail in Appendix D are for size-adjusted benefits (and size-adjusted earnings). The general view in the economic literature is that there are considerable economies of scale with respect to unit size in the production of economic well-being. Thus, a given per capita or shared benefit contributes more to the economic well-being of a married person than to that of an unmarried person. The adjustment of benefits for differences in unit size attempts to achieve a situation in which a given size-adjusted benefit contributes the same to the well-being of a married person as to that of an unmarried person. The adjusted benefit

measures (ANNPAYOUT and SSW) are cardinal measures of the number of utility units contributed by Social Security benefits to the economic well-being of a person.[20]

We adjust benefits and earnings for differences in unit size using an equivalence scale implicit in the official U.S. poverty thresholds. Our equivalence scale is for two types of units—unmarried persons and married couples. The equivalence scale values are 1.00 and 1.26 for these two types of units. This equivalence scale incorporates considerable economies of scale. For each year a person is married, the person's adjusted benefit equals the couple's benefit divided by 1.26. For each year a person is not married, the person's adjusted benefit equals the person's benefit. This equivalence scale is also used to compute size-adjusted earnings.

An important effect of size adjustment is to very substantially increase SSW and ANNPAYOUT of the married subgroups relative to those of the other sex and marital status subgroups. Size adjustment increases median ANNPAYOUT of married men and married women by about 55 percent and 40 percent. The increases for the six not-married subgroups are much smaller (1 percent and 11 percent).[21] The effects on median SSW are similar. The percentage increases in SSW and ANNPAYOUT are larger for married men than for married women because these men spend a larger proportion of their benefit receipt years married than do these women, primarily because about three-fourths of women outlive their husbands.

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20. For many persons, the present value of the stream of dollar benefit payments that is just sufficient to achieve the person's stream of size-adjusted ANNPAYOUT may not equal the person's shared SSW.

21. The very small increases for the never-married result because a few of them do marry after the start of the year they reach age 62.

The main effect of size adjustment on replacement rates is to decrease the replacement rates of the widowed and divorced relative to those of the never-married and married. For the 2003 cohort, for example, size adjustment decreases the median less-censored replacement rate of the widowed and divorced by 29 percent and 19 percent. The changes are quite small for the never-married and married (+6 percent and -2 percent). The effects of size adjustment on replacement rates result from effects on both the numerator and denominator of these rates. For the widowed and divorced, size adjustment produces small percentage changes in the numerator (ANNPAYOUT) but quite sizable percentage increases in the denominator (TX-EARN or LC-EARN). For the married, size adjustment produces large percentage increases in both the numerator and the denominator. For the never-married, size adjustment produces small percentage increases in the numerator and no change in the denominator.

Size adjustment also reduces somewhat the measured progressivity of LC-REPRATE. For the 2003 cohort, for example, size adjustment increases the ratio of the top quintile's replacement rate to that of the bottom quintile from 0.409 to 0.425 and reduces the percentage-point shortfall of the top quintile's replacement rate from that of the bottom quintile from 31.2 percentage points to 28.4 percentage points.

Measures for the Population Not Receiving Disability Insurance Benefits

The results for shared benefits and earnings presented and discussed in previous sections are for all Social Security program participants. Some of these near-retiree participants received Disability Insurance benefits, and some had spouses who received them. It is useful to look at results for just the near-retirees who did not receive DI benefits and did

not have spouses who received such benefits, referred to here as non-DIB participants.[22] More detailed results are presented in Appendix E.

Non-DIB program participants account for about 85 percent of all program participants. Thus, as expected, the exclusion of DIB participants does not have large effects on our results, increasing average SSW by 2 percent to 5 percent and decreasing average ANNPAYOUT by 1 percent to 4 percent. One reason this exclusion decreases the ratio of ANNPAYOUT to SSW is that the ratio of actual benefit receipt years to potential benefit years is lower for the non-DIB population than for the DIB population. The exclusion of DIB participants decreases median replacement rates by 4 percent to 6 percent. Both a decrease in ANNPAYOUT and an increase in average career earnings contribute to this decrease in replacement rates. This exclusion slightly reduces the measured progressivity of LC-REPRATE.

Concluding Remarks

This paper has analyzed the Social Security benefits of near-retirees—people turning age 61 in years 1988 through 2007. It has examined Social Security wealth, annualized benefit payouts, and replacement rates for average career earnings for all program participants, sex and marital status subgroups, and career earnings quintile subgroups.

22. A person is said to receive a DI benefit if his or her entitlement status is either worker only or dually entitled; a dually entitled DI beneficiary is entitled to a DI worker benefit and to a larger spouse or survivor benefit.

A few of the paper's key results are as follows:

- Both average real Social Security wealth and average real annualized payout increase markedly for successive age cohorts, primarily because of increases in average real wage-indexed taxable earnings.
- Our estimates show that the increase in mean real Social Security wealth from the 1988 cohort to the 1998 cohort is considerably larger than that reported by Wolff for the 1989–1998 period.
- Replacement rates decrease as we move from the 1993 cohort to later cohorts, primarily because of the phase-in of increases in the age of eligibility for full retirement benefits.
- For persons not married at age 62, women have markedly lower median annualized benefits than men, but Social Security wealth is much higher for women because they live longer.
- Between 1998 and 2003, median real annualized benefit payouts rose more rapidly in percentage terms for those in higher earnings quintiles than for those in lower quintiles, because of more rapid growth in career earnings among higher earners.
- Replacement rates for less-censored earnings (our proxy for total earnings) show a bit less progressivity in 2003 than in 1993.

The analysis of the Social Security benefits of near-retirees could be extended in various ways. We plan to extend our analysis to cover additional subgroups including racial and ethnic subgroups and benefit-type subgroups (retired workers, spouses, and so on). There is considerable interest in how various racial and ethnic subgroups fare under Social Security. The analysis of benefit-type subgroups should not only provide useful information about these subgroups but should also help us better understand our results for sex and marital status subgroups.

One could also extend the analysis to cover younger cohorts. This extension could quantify the effects of the second round of scheduled increases in the full retirement age on replacement rates and other benefit measures. Note, however, that younger cohorts could be markedly affected by possible future changes in benefit law

provisions. Although our paper's replacement rates measure the extent to which average career earnings are replaced by benefits, one could examine late-life earnings replacement rates, that is, replacement rates that measure the extent to which earnings for the last few years before benefit receipt are replaced by benefits.

Appendix A.
More Information on the MINT3 Model

This appendix gives some additional information about how the MINT3 model completes the historical data via imputations and how it makes projections beyond the time range of the historical information.

Completing the Historical Data

The MINT3 model imputes missing administrative records and estimates less-censored earnings.

Missing Administrative Records. Administrative records are imputed using a hot-deck procedure for the 8 percent of persons with no exact match. Age, sex, marital status, race, education, and earnings from the Survey of Income and Program Participation are among the variables used in the hot-decking. In addition, administrative records are imputed for the former spouses of SIPP sample members using a hot-deck procedure. The administrative records contain information on mortality, disability, benefit history, and earnings history.

Less-Censored Earnings. For the 1951–1977 period, the administrative earnings records (Summary Earnings Records) contain information on the quarter in which a person's earnings reached the legislated taxable maximum. This information, along with wage information from several Current Population Surveys (CPS), is used to impute earnings that are above the 1951–1977 legislated taxable maximums but do not exceed the less-censored taxable maximums.

For the 1978–1989 period, the Summary Earnings Records do not contain information on the quarter in which an individual's earnings reached the legislated taxable maximums. For this period, CPS wage information is used to impute earnings that are above the legislated taxable maximums but do not exceed the less-censored taxable maximums.

Making Projections

Because of the order of the processes in the MINT3 projection model, there is minimal interaction between demographic and economic events. Death is determined first for all persons, then marital dynamics, and then earnings.

Mortality. Mortality before age 65 is projected using a hot-deck procedure that selects older workers' earnings to splice to the end of incomplete earnings records of younger workers. This splicing procedure gives projections of mortality and disability as well as projections of earnings. Age, sex, and education are among the variables used in this splicing procedure. Mortality before age 65 is adjusted to match the mortality assumptions in the 2002 Trustees Report.

Mortality after age 65 is projected using a regression model that includes age, sex, marital status, education, and race among its predictor variables. Post-age 65 mortality rates are slightly lower than those assumed in the Trustees Report.

Marital Dynamics. Changes in marital status are projected using hazard models that include age, sex, marital history, education, race, and ethnicity among their predictor variables.

Demographic characteristics (age, race and ethnicity, education, disability history, and so on) of each projected spouse were imputed based on the characteristics of the sample person. Then a hot-deck imputation procedure was used to impute earnings and other variables to the projected spouses; age, marital history, education, and race and ethnicity are among the variables used in the hot-decking.

Earnings. For nondisabled workers, earnings after age 50 are projected using a series of regression equations. Age, sex, and education are predictors in all of the regressions. Marital status, race and ethnicity, earnings, health, and spouse characteristics are predictor variables in some of the regressions.

Earnings of disabled workers are projected using the hot-deck splicing procedure described above in the discussion of mortality.

Benefit Acceptance Dates. Several regression equations are used to project benefit entitlement dates. The predictor variables include age, sex, marital status, education, race and ethnicity, earnings, and spouse characteristics.

Immigration. Persons are projected to enter the MINT sample by means of immigration in the years after the end of the SIPP interview. A hot-deck imputation procedure is used to select postinterview immigrants from a donor pool of immigrants from the SIPP sample. The imputation is done so as to approximate estimated control totals of immigrants by time period, sex, age at immigration, and source region. The records of the selected donors are then updated to the year of projected immigration.

Appendix B.
Removing Effects of Attrition from Benefit and Earnings Measures for the 1988 cohort

The paper looks at 20 single-year cohorts, that is, persons reaching age 61 in the 20 years from 1988 through 2007. Each single-year cohort consists of all persons who reach age 61 during that year and are members of the noninstitutionalized population at the end of that year. In our tables, we combine these single-year cohorts into four groups of five single-year cohorts each: 1988–1992 (1988 cohort or cohort 1), 1993–1997 (1993 cohort or cohort 2), 1998–2002 (1998 cohort or cohort 3), and 2003–2007 (2003 cohort or cohort 4).

The initial MINT sample is from the 1990–1993 panels of the Survey of Income and Program Participation. The SIPP panels are samples of the U.S. noninstitutionalized population. The first interviews of the 1990, 1991, 1992, and 1993 panels took place early in those years. The MINT data file includes only persons who were interviewed in the SIPP in those years or were projected to immigrate to the United States after 1993.[23] The MINT data file contains actual or projected information on the dates of death, institutionalization, and emigration of these persons.

The MINT population excludes persons reaching age 61 in 1988–1992 who were not eligible for SIPP interviews because after reaching age 61 they left the U.S. noninstitutionalized population because they died, were institutionalized, or emigrated before the first SIPP interviews in 1990–1993. This attrition affects the size and composition of cohort 1, but does not affect the other three cohorts. Without appropriate corrections for attrition bias, the benefit and earnings measures (mean SSW, median

23. It also includes some information on the actual or imputed spouses of these persons.

ANNPAYOUT, and so on) for cohort 1 are not totally comparable with those of the other three cohorts.

We attempt to remove the effects of this attrition on the benefit and earnings measures for cohort 1 by using attrition factors and thus making the measures comparable with the measures for the other three cohorts. We compute attrition factors using data for the cohort 2 of near-retirees.

First, we determine which persons are hypothetical attriters. If the SIPP interviews had started 5 years later, that is, in 1995–1998 instead of in 1990–1993, some of the members of cohort 2 would have died, entered institutions, or emigrated before the start of the hypothetical interviews; these are the hypothetical attriters. About 1.6 percent of cohort 2 is lost via hypothetical attrition, overwhelmingly because they died.

Next, for each benefit or earnings measure (M_i), we determine an attrition factor for all participants and for each sex and marital status subgroup and for each quintile group as follows:

$M_{i,j,k}$ = measure of type i for cohort group j for population k.

i = type of measure, which has two dimensions: (a) kind of benefit or earnings measure, such as, SSW, ANNPAYOUT, or LC-EARN, and (b) kind of average (median or mean).

j = 1 (cohort 1) or 2 (cohort 2)

k = f (full population) or p (population after attrition)

F_i = attrition factor for measure of type i

$F_i = (M_{i,2,f}) / (M_{i,2,p})$

$M_{i,1,f} = F_i (M_{i,1,p})$; the $M_{i,1,f}$ are the cohort 1 measures corrected to remove the effects of attrition.[24]

In effect, we assume that the relative effect of actual attrition on $M_{i,1}$ is the same as the relative effect of hypothetical attrition on $M_{i,2}$. This assumption ignores the fact that mortality was slightly higher for cohort 1 than for cohort 2.

The corrected measures for all participants should be very reliable. The cohort 1 and cohort 2 samples are large, and the loss from hypothetical attrition is only 1.6 percent. For the shared measures shown in Table 1 in the text, the adjustment factors are between 0.985 and 1.000. For median SSW the factor is 0.986. For ANNPAYOUT, TX-REPRATE, LC-REPRATE, TX-EARN, and LC-EARN, the factors for medians are 0.996–0.998. Hypothetical attriters have much lower SSW than nonattriters ($7,000 versus $126,000) because the great majority of attriters die soon after reaching age 61.

The corrected measures for quintiles shown in Table 4 and Charts 1 and 2 in the main body of this paper should also be quite reliable. The quintile samples are large. The adjustment factors are 0.970–0.993 for median shared SSW. For the other five shared measures, the factors for medians are 0.989–1.000. For $M_{i,2,f}$, quintiles are determined for the full population; for $M_{i,2,p}$, quintiles are determined for the population after hypothetical attrition.

The attrition corrections for some of the sex and marital status subgroups in Tables 3a–3f are less accurate. The subgroups are sometimes much smaller, and the relative loss from attrition may sometimes be considerably larger. The adjustment factors are 0.938–0.999 for median shared SSW. For the other five shared measures, the factors

24. $M_{i,2,f}$, $M_{i,2,p}$, and $M_{i,1,p}$ are computed using the weights given in the MINT data file. We use the same procedure to get corrected weighted counts of persons in cohort 1.

for medians are 0.956–1.042. For SSW for the never-married, our correction process produces a both-sexes shared median that lies outside the range of the female and male medians; also for the never-married, we get an out-of-range both-sexes median for LC-EARN.

Appendix C.
Growth in Relative Earnings

To examine how intercohort growth in LC-EARN compares with the growth in the Social Security Administration's average annual wage, we created an average *relative* earnings measure. Relative less-censored earnings for a person for a given year equal the ratio of the person's shared earnings for that year to the SSA average annual wage for that year. Average relative earnings (RLC-EARN) for a person is the average of the annual relative earnings ratios over the person's computation period.

Average RLC-EARN increases as we move from earlier to later cohorts of near-retirees (Table C-1); that is, average shared less-censored earnings increase faster than the SSA economy-wide average annual wage. The increase in median RLC-EARN from the 1988 cohort to the 2003 cohort is 12 percent; the increases are 3 percent for 1988–1993, 5 percent for 1993–1998, and 3 percent for 1998–2003. The corresponding increases in mean RLC-EARN are a bit larger.[25]

Is the growth of shared less-censored earnings relative to the SSA average annual wage confined to certain stages of the work life? To address this question, we created average relative earnings measures for four stages of the work life—ages 22–31 ($RLC\text{-}EARN_{22\text{-}31}$), ages 32–41 ($RLC\text{-}EARN_{32\text{-}41}$), ages 42–51 ($RLC\text{-}EARN_{42\text{-}51}$), and ages 52–61 ($RLC\text{-}EARN_{52\text{-}61}$). $RLC\text{-}EARN_{i\text{-}j}$ for a person is the average of the annual

25. Because a person's annual less-censored earnings are capped at about 2.45 times the SSA average annual wage and less-censored earnings are rising relative to the average annual wage, the intercohort growth rate of uncensored earnings is probably greater than that of less-censored earnings.

Table C-1.
Average relative earnings for cohorts of near-retirees

Participant characteristics	Cohort [a]				Percentage change				
	1988	1993	1998	2003	1988–1993	1993–1998	1998–2003	1993–2003	1988–2003
	Average relative shared less-censored earnings (RLC-EARN)								
All participants									
Median	0.675	0.696	0.730	0.754	3	5	3	8	12
Mean	0.667	0.696	0.740	0.775	4	6	5	11	16
At ages 22–31									
Median	0.553	0.575	0.647	0.675	4	13	4	17	22
Mean	0.550	0.571	0.634	0.661	4	10	4	15	20
At ages 32–41									
Median	0.733	0.782	0.841	0.844	7	8	0	15	15
Mean	0.703	0.755	0.811	0.846	7	7	4	15	20
At ages 42–51									
Median	0.810	0.816	0.828	0.876	1	1	6	2	8
Mean	0.781	0.814	0.848	0.897	4	4	6	9	15
At ages 52–61									
Median	0.566	0.576	0.607	0.619	2	5	2	7	9
Mean	0.636	0.650	0.680	0.716	2	5	5	7	13
	Average relative individual less-censored earnings (IRLC-EARN)								
All participants									
Median	0.482	0.530	0.591	0.637	10	12	8	23	32
Mean	0.663	0.694	0.735	0.778	5	6	6	11	17
Participants with positive earnings									
Median	0.513	0.553	0.609	0.648	8	10	6	19	26
Mean	0.684	0.711	0.748	0.785	4	5	5	9	15

SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

a. Persons aged 57–61 in specified year.

relative earnings ratios over the period that starts with the year the person reaches age i and ends with the year the person reaches age j.[26]

All four of these additional measures of relative earnings increase as we move from earlier to later cohorts of near-retirees. The 1988–1998 intercohort increase for

26. This definition holds for all persons except those who enter the United States after the year they reach age i. $RLC\text{-}EARN_{i\text{-}j}$ is not computed for persons who enter the United States after year j. For persons who enter the United States after year i but during or before year j, $RLC\text{-}EARN_{i\text{-}j}$ is the average over the period that starts with the year the person enters the United States and ends with year j.

median RLC-EARN is 17 percent for those aged 22–31 ($RLC\text{-}EARN_{22\text{-}31}$), 15 percent for those aged 32–41 ($RLC\text{-}EARN_{32\text{-}41}$), 2 percent for those aged 42–51 ($RLC\text{-}EARN_{42\text{-}51}$), and 7 percent for those aged 52–61 ($RLC\text{-}EARN_{52\text{-}61}$). Thus, less-censored earnings increase faster than the SSA average annual wage in all four stages of the work life, especially the earlier stages.[27]

Do average individual less-censored earnings also grow at a faster percentage rate than the SSA average annual wage? To address this question, we created an additional average relative earnings measure (IRLC-EARN), which is computed for individual earnings. We find that average IRLC-EARN also increases as we move from earlier to later cohorts; this applies for medians as well as for means (Table C-1).[28]

Table C-1 shows IRLC-EARN means for all near-retirees ranging from 0.663 to 0.778, and medians ranging from 0.482 to 0.637. Why are these IRLC-EARN values well below 1.000?

Average IRLC-EARN is for less-censored earnings from employment covered by the Social Security program. Through 1977, the SSA average annual wage is for covered wages; after 1977, the percentage growth rate of the SSA average wage is given by the percentage growth rate of average total (covered plus uncovered) wages (Donkar 1981 and Clingman and Kunkel 1992).

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27. For the 2003 cohort, a substantial proportion of the annual earnings amounts included in $RLC\text{-}EARN_{52\text{-}61}$ are projected rather than reported. The SSA average annual wage series plays a key role in the earnings projection process.

28. This is true whether the medians and means are for all near-retirees or for only those with positive IRLC-EARNs.

Average IRLC-EARN is well below 1.000 in all cases for two reasons:

1. Average IRLC-EARN is for all near-retirees, including those with zero earnings for one or more years of their computation periods. The SSA average annual wage for a year is for persons with wages in that year.

2. Less-censored earnings exclude earnings higher than about 2.45 times the average annual wage. For all years after 1982, the taxable maximum is close to 2.45 times the average annual wage. The percentage of covered earnings in excess of the taxable maximum rises from 10 percent in 1983 to 15 percent in 2002 (see Social Security Administration 2002, Table 4.B1).

Appendix D.
Size-Adjusted Benefits

Most of the results presented and discussed in the main text are for shared benefits and shared earnings. For each year a person is married, the person's shared benefit equals the couple's benefits divided by 2; for each year a person is not married, the person's shared benefit equals the person's benefit. That is, the person's shared benefit equals the per capita benefit of the unit (married couple or unmarried person) to which the person belongs.

The results presented and discussed here are for size-adjusted benefits and size-adjusted earnings. The general view in the economics literature is that there are considerable economies of scale with respect to unit size in the production of economic well-being. Thus, a given per capita or shared benefit contributes much more to the economic well-being of a married person than to that of an unmarried person. The adjustment of benefits for differences in unit size attempts to achieve a situation in which a given size-adjusted benefit contributes the same to the well-being of a married person as to that of an unmarried person. The adjusted benefit measures—annualized payout (ANNPAYOUT) and Social Security wealth (SSW) are cardinal measures of the number of utility units contributed by Social Security benefits to a person's economic well-being.[29]

Various equivalence scales have been used to adjust unit incomes for differences in unit size.[30] We adjust benefits using an equivalence scale implicit in the official U.S.

29. The lump-sum dollar amount just sufficient to fund a person's stream of size-adjusted ANNPAYOUT often will not equal the person's shared SSW.

30. Perhaps equivalence scales should vary with the level of economic well-being. One can argue that relative economies of scale with respect to unit size decrease as the level of well-being increases.

poverty thresholds (Proctor and Dalaker 2003). Our equivalence scale is for two types of units—unmarried persons and married couples. We use the equivalence scale derived from the poverty thresholds for unrelated individuals aged 65 or older and two-person units with householder aged 65 or older and with no related child under age 18. The equivalence scale values are 1.00 and 1.26 for these two types of units.[31] Thus, the equivalence scale incorporates large economies of scale.

For each year a person is married, the person's adjusted benefit equals the couple's benefits divided by 1.26.[32] For each year a person is not married, the person's adjusted benefit equals the person's benefit. This equivalence scale is also used to compute size-adjusted earnings. The size-adjusted benefit measures (Social Security wealth, annualized payout, and earnings replacement rates) differ from the shared benefit measures discussed in the main body of this paper only because they use adjusted annual benefits and earnings rather than shared annual benefits and earnings.

We will show that the most important effect of size adjustment is to very substantially increase Social Security wealth and annualized payouts of the married subgroups relative to those of the other marital status subgroups.

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31. For those under age 65, the poverty threshold for the two-person unit is 1.29 times that for the one-person unit. The poverty thresholds for those under age 65 are 1.08 to 1.11 times those for those 65 or older. We decided not to adjust for age differences.

    The comparable values in Congressional Budget Office (2003) tax burden studies are 1.00 and about 1.41.

32. For each year a person is married, the person's adjusted benefit equals 1.5873 (i.e., 2/1.26) times the person's shared benefit.

Results for All Social Security Program Participants

Social Security Wealth and Annualized Payout. The intercohort percentage increases in average adjusted SSW are the same as or slightly smaller than those for average shared SSW (Tables 1 and D-1). In addition, the intercohort percentage increases in average adjusted ANNPAYOUT are the same as or slightly smaller than those for average shared ANNPAYOUT. The increases for these adjusted benefit measures are smaller because beneficiaries in the later cohorts are a bit less likely to be married than those in the earlier

Table D-1.
Size-adjusted Social Security benefit measures and related measures for cohorts of near-retirees

	Cohort [a]				Percentage change				
Measure	1988	1993	1998	2003	1988–1993	1993–1998	1998–2003	1993–2003	1988–2003
Social Security wealth (SSW, dollars)									
Median	142,660	165,441	198,953	219,459	16	20	10	33	54
Mean	145,462	168,614	204,664	230,932	16	21	13	37	59
Annualized payout (ANNPAYOUT, dollars)									
Median	7,588	8,595	10,109	11,113	13	18	10	29	46
Mean	7,331	8,291	9,740	10,744	13	17	10	30	47
Median replacement rate (percent)									
Taxable earnings (TX-REPRATE)	30.4	31.6	30.1	29.0	4	-5	-4	-8	-5
Less-censored earnings (LC-REPRATE)	26.6	28.4	28.0	27.6	7	-1	-1	-3	4
Average wage-indexed earnings (dollars)									
Taxable (TX-EARN)									
Median	25,318	27,310	33,637	38,094	8	23	13	39	50
Mean	24,426	27,017	33,711	38,695	11	25	15	43	58
Less-censored (LC-EARN)									
Median	28,521	30,109	36,384	40,610	6	21	12	35	42
Mean	28,162	30,190	35,843	39,500	7	19	10	31	40
Median potential benefit years	21	21	22	22	1	2	2	4	5

SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

NOTE: Money amounts are in January 1, 2002, dollars.

a. Persons aged 57–61 in specified year.

cohorts. For example, the percentage of persons married at the beginning of the year they reach age 62 declines from 74.5 percent of the 1988 cohort to 71.3 percent for the 2003 cohort.

Replacement Rates for Taxable and Less-Censored Earnings. The intercohort percentage changes in median adjusted TX-REPRATE are about the same as those for median shared TX-REPRATE. The median adjusted TX-REPRATE is 6 percent to 7 percent lower than the median shared TX-REPRATE. This difference results because size adjustment tends to increase ANNPAYOUT (the numerator of TX-REPRATE) relatively less than it does TX-EARN (the denominator of TX-REPRATE).

The intercohort decreases in median adjusted LC-REPRATE are a bit larger, and the increase is a bit smaller, than for median shared LC-REPRATE.

Results by Sex and Marital Status

Information for the four cohorts by sex and marital status subgroups is shown in Tables D-2a through D-2f. Recall that persons are assigned to these subgroups according to their marital status as of the beginning of the year they reach age 62. For SSW and ANNPAYOUT, the size adjustment mainly affects the married subgroups. For TX-EARN and LC-EARN, the size adjustment affects the widowed and divorced subgroups as well as the married subgroups.

Social Security Wealth. The main effect of size adjustment is to increase median SSW of the married relative to that of the other marital status subgroups. For the three youngest cohorts, size adjustment increases SSW of married women by 42 percent to 46 percent and SSW of married men by 52 percent to 53 percent (Table D-2a). The

Table D-2a.
Ratio of size-adjusted median to shared median for Social Security wealth (SSW), by cohort, sex, and marital status at age 62

Sex	Total	Never married	Married	Widowed	Divorced
			1988		
All participants	1.35	1.03	1.49	0.99	1.05
Women	1.20	1.03	1.44	1.01	1.01
Men	1.49	0.96	1.52	1.07	1.00
			1993		
All participants	1.35	1.02	1.50	1.01	1.07
Women	1.27	1.00	1.42	1.00	1.02
Men	1.44	1.04	1.52	1.11	1.07
			1998		
All participants	1.35	1.01	1.49	1.04	1.02
Women	1.27	1.00	1.45	1.02	1.02
Men	1.44	1.02	1.52	1.22	1.04
			2003		
All participants	1.33	1.01	1.49	1.05	1.04
Women	1.25	1.00	1.43	1.00	1.01
Men	1.42	1.00	1.53	1.11	1.05

SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

percentage increases for those who are not married are much smaller. For these same cohorts, size adjustment increases SSW of never-married women by 0 percent, never-married men by 0 percent to 4 percent, divorced women by 1 percent to 2 percent, divorced men by 4 percent to 7 percent, and widowed women by 0 percent to 2 percent; the increase for widowed men is larger (11 percent to 22 percent).

For a person who is married in all of their benefit receipt years, size adjustment increases SSW by 58.73 percent.[33] The percentage increases are larger for married men than for married women because these men spend a larger proportion of their benefit receipt years married than do these women. This is primarily because about three-fourths

33. For each year a person is married, the person's adjusted benefit equals the couple's benefit divided by 1.26. The couple's benefit equals 2 times the person's shared benefit. Thus, the person's adjusted benefit equals the person's shared benefit multiplied by 2/1.26, that is, by 1.5873.

of women outlive their husbands. The increases in SSW of the not-married are due to their marriages that begin after the start of the year they reach age 62.

For shared SSW, we find that in each gender group the ever-married have roughly similar amounts of median SSW. For size-adjusted SSW, we get a rather different result: in each gender group, the married have substantially higher SSW than do the widowed and divorced.

The other results for size-adjusted SSW are similar to those for shared SSW (see Findings by Sex and Marital Status in the main body of the paper).

Annualized Payout. The main effect of size adjustment is to increase median ANNPAYOUT of the married relative to those of the other marital status subgroups (Table D-2b). Another effect of size adjustment is to increase ANNPAYOUT of married

Table D-2b.
Ratio of size-adjusted median to shared median for annualized payout (ANNPAYOUT), by cohort, sex, and marital status at age 62

Sex	Total	Never married	Married	Widowed	Divorced
			1988		
All participants	1.36	1.00	1.48	1.02	1.01
Women	1.26	1.00	1.40	1.01	1.01
Men	1.49	1.01	1.55	1.04	1.08
			1993		
All participants	1.36	1.01	1.48	1.02	1.03
Women	1.25	1.00	1.40	1.01	1.01
Men	1.47	1.11	1.55	1.08	1.07
			1998		
All participants	1.35	1.03	1.47	1.03	1.05
Women	1.25	1.00	1.40	1.01	1.02
Men	1.46	1.03	1.54	1.11	1.06
			2003		
All participants	1.34	1.01	1.48	1.05	1.02
Women	1.26	1.03	1.41	1.03	1.01
Men	1.43	1.02	1.54	1.07	1.04

SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

men relative to that of married women. Size adjustment increases median ANNPAYOUT of married women by 40 percent to 41 percent and married men by 54 percent to 55 percent. The percentage increases for the not-married are much smaller (11 percent or less). Size adjustment increases ANNPAYOUT of never-married women by 0 to 3 percent, never-married men by 2 percent to 11 percent, divorced women by 1 percent to 2 percent, divorced men by 4 percent to 7 percent, widowed women by 1 percent to 3 percent, and widowed men by 7 percent to 11 percent. Again the percentage increases are larger for married men than for married women because these men spend a larger proportion of their benefit receipt years married than do these women.

For shared ANNPAYOUT, we get the following results:

- Median ANNPAYOUT is larger (by 4 percent to 6 percent) for married women than for married men.
- Median ANNPAYOUT amounts are somewhat similar for married, widowed, and divorced women.
- Among men, the widowed and divorced have significantly larger ANNPAYOUT amounts than do men in the other two subgroups.

For size-adjusted ANNPAYOUT, we get the following, rather different results:

- ANNPAYOUT is smaller (by 4 percent to 6 percent) for married women than for married men.
- Median ANNPAYOUT amounts are substantially larger for married women than for widowed and divorced women.
- Among men, the married receive the largest ANNPAYOUT amounts and the never-married receive the smallest amounts.

The other results for size-adjusted ANNPAYOUT are generally similar to those for shared ANNPAYOUT (see Findings by Sex and Marital Status in the main body of the paper).

Taxable Earnings Replacement Rate. The main effect of size adjustment is to decrease TX-REPRATE of the widowed and divorced relative to that of the never-married and married. Size adjustment decreases median TX-REPRATE of widowed women by 28 percent to 30 percent and widowed men by 19 percent to 22 percent (Table D-2c). The decreases are 19 percent to 24 percent for divorced women and 17 percent to 21 percent for divorced men. The percentage changes for the never-married and married are small (6 percent or less). Size adjustment increases TX-REPRATE of never-married women by 0 to 6 percent, never-married men by 2 percent to 4 percent, and married men by 1 percent to 2 percent, and decreases TX-REPRATE of married women by 7 percent.

The effects of size adjustment on TX-REPRATE result from effects on both the numerator and denominator of TX-REPRATE. Recall that the numerator and denominator of TX-REPRATE are ANNPAYOUT and TX-EARN. For the widowed and

Table D-2c.
Ratio of size-adjusted median to shared median for taxable earnings replacement rate (TX-REPRATE), by cohort, sex, and marital status at age 62

Sex	Total	Never married	Married	Widowed	Divorced
			1988		
All participants	0.93	1.03	0.97	0.69	0.81
Women	0.87	1.00	0.93	0.68	0.76
Men	0.99	1.02	1.00	0.80	0.79
			1993		
All participants	0.93	1.03	0.97	0.72	0.80
Women	0.88	1.00	0.93	0.71	0.77
Men	0.99	1.02	1.01	0.80	0.83
			1998		
All participants	0.93	1.03	0.97	0.73	0.80
Women	0.89	1.00	0.93	0.72	0.80
Men	0.99	1.04	1.02	0.81	0.81
			2003		
All participants	0.94	1.04	0.97	0.77	0.81
Women	0.89	1.06	0.93	0.72	0.81
Men	0.99	1.02	1.01	0.78	0.83

SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

divorced, size adjustment produces small percentage increases in ANNPAYOUT (see above) but quite sizable percentage increases in TX-EARN. For the never-married, size adjustment produces small percentage increases in ANNPAYOUT and leaves TX-EARN unchanged. For the married, size adjustment produces large percentage increases in ANNPAYOUT and similarly large percentage increases in TX-EARN.

For shared TX-REPRATE, we get the following results:

- Among women, TX-REPRATE is highest for widows and quite similar for the other marital status subgroups.
- Among men, TX-REPRATE is lowest for the married and highest for the widowed and divorced.

For size-adjusted TX-REPRATE, we get the following, rather different results:

- Among women, TX-REPRATE is lowest for the divorced and similar for the other marital status subgroups.
- Among men, TX-REPRATE is highest for the never-married.

The intercohort changes in size-adjusted TX-REPRATE are generally similar to those for shared TX-REPRATE (see Findings by Sex and Marital Status in the main body of the paper).

Less-Censored Earnings Replacement Rate. The effects of size adjustment on LC-REPRATEs are very similar to those on TX-REPRATEs (Table D-2d). Again, the main effect of size adjustment is to decrease replacement rates of the widowed and divorced relative to those of the never-married and married.

Table D-2d.
Ratio of size-adjusted median to shared median for less-censored earnings replacement rate (LC-REPRATE), by cohort, sex, and marital status at age 62

Sex	Total	Never married	Married	Widowed	Divorced
			1988		
All participants	0.92	1.02	0.96	0.69	0.81
Women	0.86	1.00	0.93	0.69	0.78
Men	0.99	1.03	1.00	0.78	0.82
			1993		
All participants	0.93	1.04	0.97	0.72	0.79
Women	0.86	1.00	0.92	0.70	0.78
Men	0.99	1.04	1.01	0.79	0.83
			1998		
All participants	0.93	1.01	0.98	0.72	0.80
Women	0.88	1.00	0.92	0.71	0.78
Men	0.99	1.04	1.02	0.76	0.82
			2003		
All participants	0.94	1.06	0.98	0.71	0.81
Women	0.89	1.03	0.94	0.71	0.80
Men	0.99	1.09	1.02	0.74	0.82

SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

For shared LC-REPRATE, we get the following results:

- Among women, LC-REPRATE is highest for widows and quite similar for the other marital status subgroups.
- Among men, LC-REPRATE is lowest for the married and highest for the widowed and divorced.

For size-adjusted LC-REPRATE, we get the following, rather different results:

- Among women, LC-REPRATE is lowest for the divorced and similar for the other marital status subgroups.
- Among men, LC-REPRATE is highest for the never-married.

The intercohort changes in size-adjusted LC-REPRATEs are generally similar to those for shared LC-REPRATE (see Findings by Sex and Marital Status in the main body of the paper).

Table D-2e.
Ratio of size-adjusted median to shared median for taxable earnings (TX-EARN), by cohort, sex, and marital status at age 62

Sex	Total	Never married	Married	Widowed	Divorced
			1988		
All participants	1.50	1.00	1.54	1.46	1.32
Women	1.50	1.00	1.56	1.49	1.33
Men	1.49	1.00	1.52	1.38	1.33
			1993		
All participants	1.48	1.00	1.54	1.41	1.30
Women	1.49	1.00	1.55	1.42	1.31
Men	1.49	1.00	1.52	1.36	1.39
			1998		
All participants	1.47	1.00	1.53	1.43	1.32
Women	1.47	1.00	1.55	1.45	1.34
Men	1.46	1.00	1.52	1.47	1.28
			2003		
All participants	1.45	1.00	1.53	1.40	1.27
Women	1.45	1.00	1.54	1.46	1.31
Men	1.45	1.00	1.51	1.39	1.29

SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

Related Measures. Two measures that help explain the findings for the four benefit measures (SSW, ANNPAYOUT, TX-REPRATE, and LC-REPRATE) are presented in Tables D-2e and D-2f. Table D-2e gives taxable earnings (TX-EARN), and Table D-2f gives less-censored earnings (LC-EARN).

Results by Earnings Quintiles

Information for the four cohorts by quintiles of size-adjusted less-censored earnings (LC-EARN) is shown in Table D-3.

The percentage increases in ANNPAYOUT due to size adjustment generally rise as we move from lower to higher quintiles. Size adjustment widens somewhat the relative spread between lower and higher quintiles. For the 2003 cohort, size adjustment

Table D-2f.
Ratio of size-adjusted median to shared median for less-censored earnings (LC-EARN), by cohort, sex, and marital status at age 62

Sex	Total	Never married	Married	Widowed	Divorced
			1988		
All participants	1.49	1.00	1.54	1.46	1.37
Women	1.49	1.00	1.57	1.50	1.34
Men	1.48	1.00	1.53	1.44	1.37
			1993		
All participants	1.49	1.00	1.54	1.44	1.30
Women	1.48	1.00	1.56	1.44	1.33
Men	1.48	1.00	1.53	1.41	1.32
			1998		
All participants	1.47	1.00	1.53	1.44	1.30
Women	1.46	1.00	1.56	1.45	1.36
Men	1.47	1.00	1.51	1.50	1.31
			2003		
All participants	1.45	1.00	1.53	1.39	1.29
Women	1.45	1.00	1.55	1.45	1.30
Men	1.46	1.00	1.51	1.42	1.26

SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

increases the ratio of top-quintile ANNPAYOUT to bottom-quintile ANNPAYOUT from 2.43 to 2.86.

The results for shared ANNPAYOUT (see Findings by Earnings Quintiles in the main body of the paper) generally hold for size-adjusted ANNPAYOUT.

Size adjustment reduces median LC-REPRATE for all quintiles in all cohorts. The percentage decreases in LC-REPRATE due to size adjustment generally decline as we move from lower to higher quintiles. This decline is caused by an increase in the percentage increase in ANNPAYOUT as we move to higher quintiles. The decreases in LC-REPRATE are 6 percent to 11 percent for the bottom quintile and 3 percent for the top quintile. Size adjustment slightly narrows the spread in LC-REPRATE between lower and upper quintiles. For the 2003 cohort, size adjustment increases the ratio of top-quintile LC-REPRATE to bottom-quintile LC-REPRATE from 0.409 to 0.425; size

Table D-3.
Ratio of size-adjusted median to shared median for Social Security benefit measures and related measures for cohorts of near-retirees, by less-censored earnings quintiles

Quintile	1988	1993	1998	2003
		Social Security wealth (SSW)		
Bottom	1.31	1.33	1.27	1.28
Second	1.28	1.32	1.31	1.35
Third	1.44	1.31	1.34	1.32
Fourth	1.46	1.44	1.37	1.39
Top	1.43	1.46	1.42	1.40
		Annualized payout (ANNPAYOUT)		
Bottom	1.27	1.31	1.27	1.25
Second	1.33	1.31	1.33	1.30
Third	1.37	1.42	1.37	1.36
Fourth	1.42	1.43	1.42	1.40
Top	1.45	1.42	1.42	1.41
		Taxable earnings replacement rate (TX-REPRATE)		
Bottom	0.90	0.89	0.90	0.91
Second	0.90	0.89	0.92	0.92
Third	0.93	0.93	0.93	0.93
Fourth	0.94	0.95	0.95	0.96
Top	0.98	0.97	0.97	0.97
		Less-censored earnings replacement rate (LC-REPRATE)		
Bottom	0.89	0.90	0.90	0.94
Second	0.90	0.89	0.92	0.92
Third	0.92	0.92	0.94	0.94
Fourth	0.95	0.95	0.96	0.95
Top	0.97	0.97	0.97	0.97
		Taxable earnings (TX-EARN)		
Bottom	1.43	1.44	1.44	1.36
Second	1.49	1.45	1.45	1.44
Third	1.50	1.49	1.47	1.46
Fourth	1.52	1.50	1.48	1.47
Top	1.47	1.48	1.48	1.45
		Less-censored earnings (LC-EARN)		
Bottom	1.43	1.44	1.42	1.40
Second	1.45	1.45	1.46	1.43
Third	1.49	1.49	1.47	1.45
Fourth	1.51	1.50	1.48	1.47
Top	1.50	1.49	1.48	1.45

SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

NOTE: Numerators of ratios are by size-adjusted quintiles; denominators are by shared quintiles.

adjustment reduces the percentage-point shortfall of the top quintile's replacement rate from that of the bottom quintile from 31.2 points to 28.4 points. Thus, one can say that size adjustment slightly reduces the measured progressivity of LC-REPRATE.

The results for shared LC-REPRATE, discussed in Findings by Earnings Quintiles in the main body of the paper, generally hold for size-adjusted LC-REPRATE.

Appendix E.
Population Not Receiving Disability Insurance Benefits

The findings presented and discussed in the main text are for all Social Security program participants. Social Security program participants are persons with some shared earnings. Some of these participants received Disability Insurance (DI) benefits or had spouses who received them. It is useful to look at results for just the population not receiving DI benefits (referred to here as non-DIB participants). On average, DIB near-retirees have lower average career earnings and shorter lives. However, DIB near-retirees do not have their benefits actuarially reduced for early benefit receipt.

The results presented and discussed here are for the non-DIB participants, that is, program participants who did not receive DI benefits and did not have spouses who received them. From the participant population we exclude persons for being DI beneficiaries if they received DI benefits after the year they reached age 61 and first received DI benefits before the year they reached age 62.[34] The person's disability lowers their lifetime earnings (TX-EARN and LC-EARN) and affects their benefits. We exclude a person for having a spouse with DI benefits if any spouse married to the person in the years the person attains ages 22–61 received DI benefits during that 40-year period in any year in which the spouse was married to the person. The spouse's disability lowers the person's shared lifetime earnings and often affects their shared benefits. A person is said to receive a DI benefit if their entitlement status is either worker only or dually entitled. A dually entitled DI beneficiary is entitled to a DI worker benefit and to a larger spouse or widow(er) benefit.

34. In addition, we require that the first benefit the person received after the year they reached age 61 be a DI benefit.

Results for All Social Security Program Participants Not Receiving DI Benefits

Non-DIB program participants account for about 85 percent of all program participants. About two-thirds of the excluded persons are DI beneficiaries, and the other third have a spouse receiving DI benefits.

For the later three cohorts, the exclusion of DIB persons increases average SSW by 2 percent to 5 percent (Tables 1 and E-1). For these cohorts, median SSW of the excluded DIB persons is about 80 percent of that of the non-DIB persons. A major reason for this shortfall is that mean benefit receipt years of DIB persons are only about 80 percent to 85 percent of those of non-DIB persons.

The exclusion of DIB persons decreases average ANNPAYOUT by 1 percent to 4 percent. For the three later cohorts, median ANNPAYOUT of DIB persons is 106 percent to 115 percent of that of non-DIB persons. This excess of 6 percentage points to 15 percentage points occurs despite the fact that median TX-EARN of DIB persons is only about 75 percent to 79 percent of that of non-DIB persons. Two factors account for this excess. First, DI benefits, unlike Old-Age and Survivors Insurance benefits, are not reduced for early benefit receipt. Actuarial reductions for OASI worker and spouse benefits could be as large as 20 percent to 30 percent; many of these beneficiaries are subject to large actuarial reductions. Second, the ratio of mean benefit receipt years to potential benefit years for DIB persons is almost 1, compared with about 0.93 for non-DIB persons.

Table E-1.
Social Security benefit measures and related measures for cohorts of near-retirees not receiving Disability Insurance benefits

Measure	Cohort [a]				Percentage change				
	1988	1993	1998	2003	1988–1993	1993–1998	1998–2003	1993–2003	1988–2003
Social Security wealth (SSW, dollars)									
Median	105,944	125,932	154,305	169,430	19	23	10	35	60
Mean	108,114	127,993	157,966	177,168	18	23	12	38	64
Annualized payout (ANNPAYOUT, dollars)									
Median	5,445	6,203	7,383	8,218	14	19	11	32	51
Mean	5,159	5,868	7,001	7,816	14	19	12	33	52
Median replacement rate (percent)									
Taxable earnings (TX-REPRATE)	31.0	32.1	30.6	29.7	4	-5	-3	-7	-4
Less-censored earnings (LC-REPRATE)	27.1	28.7	28.4	28.2	6	-1	-1	-2	4
Average wage-indexed earnings (dollars)									
Taxable (TX-EARN)									
Median	17,435	19,240	23,988	27,413	10	25	14	42	57
Mean	16,865	18,836	23,679	27,580	12	26	16	46	64
Less-censored (LC-EARN)									
Median	19,772	21,247	25,690	28,585	7	21	11	35	45
Mean	19,409	21,005	25,563	28,950	8	22	13	38	49
Mean potential benefit years	21.75	22.22	22.86	23.01	2	3	1	4	6

SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

NOTE: Money amounts are in January 1, 2002, dollars.

a. Persons aged 57–61 in specified year.

The exclusion of DIB persons decreases replacement rates by 4 percent to 6 percent. Both a decrease in median ANNPAYOUT (1 percent to 2 percent) and an increase in median average career earnings (4 percent to 5 percent) contribute to this decrease in replacement rates. For the three later cohorts, median replacement rates of DIB persons are 143 percent to 155 percent of those of non-DIB persons.

Results by Sex and Marital Status

Non-DIB program participants account for 85 percent to 86 percent of all program participants, but the percentages vary a bit among the eight sex and marital status subgroups. The percentages are generally highest for widowed women (88 to 91) and lowest for married women (82 to 84).

The effects of excluding DIB persons on the levels of median SSW and ANNPAYOUT are often rather small and do not show a consistent pattern of differences by sex and marital status subgroup (Tables E-2a and E-2b). The effects of exclusion on the levels of replacement rates are usually a bit larger and show some patterns of differences by sex and marital status subgroups (Tables E-2c and E-2d). The percentage decreases in replacement rates are among the highest for never-married men, never-married women, and divorced men. They are usually slighter smaller for widowed women than for all subgroups combined. Medians of the denominators of the replacement rates are given in Tables E-2e and E-2f.

Results by Earnings Quintiles

The exclusion of DIB persons reduces median ANNPAYOUT of the bottom quintiles by 6 percent to 10 percent and ANNPAYOUTs of the next-to-bottom quintiles by 2 percent to 5 percent (Table E-3).[35] The exclusion of DIB persons slightly widens the spread between lower and higher quintiles. For the non-DIB population for the 2003 cohort, the median ANNPAYOUT is $10,662 for the top quintile and $4,128 for the bottom quintile; for the all-participant population, the corresponding figures are $10,646 and $4,382.

35. The quintile endpoints for the non-DIB population differ from those for the all-participant population.

Table E-2a.
Ratio of median Social Security wealth (SSW) of near-retirees not receiving Disability Insurance benefits (non-DIB) to that of all participants, by cohort, sex, and marital status at age 62

Sex	Total	Never married	Married	Widowed	Divorced
			1988		
All participants	1.00	1.06	1.00	1.00	1.00
Women	1.00	1.02	0.99	0.98	1.01
Men	1.07	0.86	1.02	0.97	0.97
			1993		
All participants	1.03	1.09	1.02	1.04	1.09
Women	1.01	0.95	1.00	1.00	1.02
Men	1.06	1.13	1.05	1.02	1.06
			1998		
All participants	1.05	1.04	1.04	1.06	1.05
Women	1.04	1.00	1.03	1.02	1.06
Men	1.07	1.00	1.04	1.13	1.06
			2003		
All participants	1.03	1.03	1.02	1.05	1.05
Women	1.03	1.04	1.03	1.02	1.03
Men	1.03	1.09	1.03	1.01	1.04

SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

Table E-2b.
Ratio of median annualized payout (ANNPAYOUT) of near-retirees not receiving Disability Insurance benefits (non-DIB) to that of all participants, by cohort, sex, and marital status at age 62

Sex	Total	Never married	Married	Widowed	Divorced
			1988		
All participants	0.98	0.94	0.98	0.98	0.94
Women	0.97	0.99	0.98	0.99	0.97
Men	0.98	0.96	0.98	0.99	0.98
			1993		
All participants	0.98	0.95	0.98	0.99	0.97
Women	0.99	0.94	0.99	0.98	0.98
Men	0.97	0.98	0.98	0.99	0.96
			1998		
All participants	0.99	0.96	0.99	0.99	0.98
Women	0.99	0.96	0.99	0.99	0.99
Men	0.98	0.98	0.98	0.95	0.98
			2003		
All participants	0.99	0.98	0.99	0.99	0.98
Women	0.99	0.96	0.99	0.98	0.99
Men	0.99	1.00	0.99	1.00	1.00

SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

Table E-2c.
Ratio of median taxable earnings replacement rate (TX-REPRATE) of near-retirees not receiving Disability Insurance benefits (non-DIB) to that of all participants, by cohort, sex, and marital status at age 62

Sex	Total	Never married	Married	Widowed	Divorced
			1988		
All participants	0.95	0.95	0.95	0.95	0.94
Women	0.94	0.94	0.94	0.96	0.98
Men	0.96	0.90	0.95	0.97	0.96
			1993		
All participants	0.95	0.85	0.94	0.96	0.94
Women	0.94	0.85	0.95	0.97	0.96
Men	0.95	0.83	0.96	0.95	0.95
			1998		
All participants	0.95	0.91	0.95	0.95	0.94
Women	0.96	0.90	0.96	0.96	0.96
Men	0.96	0.93	0.96	0.93	0.92
			2003		
All participants	0.96	0.90	0.96	0.96	0.94
Women	0.96	0.92	0.96	0.96	0.94
Men	0.96	0.87	0.96	0.96	0.94

SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

Table E-2d.
Ratio of median less-censored earnings replacement rate (LC-REPRATE) of near-retirees not receiving Disability Insurance benefits (non-DIB) to that of all participants, by cohort, sex, and marital status at age 62

Sex	Total	Never married	Married	Widowed	Divorced
			1988		
All participants	0.94	0.94	0.95	0.96	0.95
Women	0.94	0.94	0.93	0.97	0.97
Men	0.95	0.91	0.95	0.94	0.90
			1993		
All participants	0.94	0.87	0.95	0.96	0.93
Women	0.94	0.92	0.94	0.95	0.95
Men	0.95	0.85	0.95	0.92	0.92
			1998		
All participants	0.95	0.92	0.95	0.96	0.94
Women	0.95	0.88	0.95	0.96	0.95
Men	0.95	0.93	0.95	0.92	0.96
			2003		
All participants	0.96	0.94	0.96	0.96	0.93
Women	0.96	0.92	0.96	0.97	0.93
Men	0.96	0.94	0.96	0.93	0.94

SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

Table E-2e.
Ratio of median taxable earnings (TX-EARN) of near-retirees not receiving Disability Insurance benefits (non-DIB) to that of all participants, by cohort, sex, and marital status at age 62

Sex	Total	Never married	Married	Widowed	Divorced
			1988		
All participants	1.04	1.04	1.04	1.02	1.05
Women	1.04	1.05	1.04	1.00	0.99
Men	1.04	0.96	1.03	1.12	1.09
			1993		
All participants	1.04	1.20	1.04	1.01	1.06
Women	1.04	1.03	1.04	1.00	1.01
Men	1.05	1.13	1.04	1.04	1.04
			1998		
All participants	1.05	1.10	1.05	1.01	1.07
Women	1.05	1.10	1.05	1.01	1.04
Men	1.05	1.01	1.05	1.13	1.06
			2003		
All participants	1.05	1.12	1.05	1.04	1.07
Women	1.05	1.05	1.04	1.05	1.04
Men	1.05	1.09	1.04	1.02	1.08

SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

Table E-2f.
Ratio of median less-censored earnings (LC-EARN) of near-retirees not receiving Disability Insurance benefits (non-DIB) to that of all participants, by cohort, sex, and marital status at age 62

Sex	Total	Never married	Married	Widowed	Divorced
			1988		
All participants	1.04	0.96	1.04	1.00	1.04
Women	1.03	1.10	1.04	0.99	1.04
Men	1.04	0.99	1.04	1.05	1.14
			1993		
All participants	1.09	1.26	1.04	1.01	1.07
Women	1.10	1.00	1.04	1.01	1.10
Men	1.18	1.13	1.04	1.03	1.30
			1998		
All participants	1.05	1.10	1.04	1.10	1.07
Women	1.05	1.10	1.06	1.01	1.07
Men	1.05	1.04	1.05	1.09	1.06
			2003		
All participants	1.05	1.06	1.04	1.06	1.06
Women	1.05	1.03	1.05	1.08	1.05
Men	1.05	1.07	1.04	1.04	1.07

SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

The exclusion of DIB persons reduces median LC-REPRATE for all quintiles in all cohorts (Table E-3). The exclusion slightly narrows the spread in LC-REPRATE between lower quintiles and upper quintiles. For the 2003 cohort, the exclusion increases the ratio of top-quintile LC-REPRATE to bottom-quintile LC-REPRATE from 0.409 to 0.436; the exclusion reduces the percentage-point excess of the bottom quintile's replacement rate over that of the top quintile from 31.2 points to 27.6 points. Thus, one can say that the exclusion of DIB persons slightly reduces the measured progressivity of LC-REPRATE.

Table E-3.
Ratio of median Social Security benefit measures and related measures for cohorts of near-retirees not receiving Disability Insurance benefits (non-DIB) to median for all participants, by less-censored earnings quintiles

Quintile	1988	1993	1998	2003
		Social Security wealth (SSW)		
Bottom	0.96	0.97	1.00	1.02
Second	0.99	1.02	1.03	1.03
Third	1.06	1.05	1.06	1.05
Fourth	1.02	1.01	1.04	1.02
Top	1.00	1.02	1.02	1.01
		Annualized payout (ANNPAYOUT)		
Bottom	0.90	0.92	0.92	0.94
Second	0.95	0.97	0.98	0.98
Third	0.98	0.99	0.99	1.00
Fourth	0.98	0.99	1.00	1.00
Top	1.00	1.00	1.00	1.00
		Taxable earnings replacement rate (TX-REPRATE)		
Bottom	0.90	0.90	0.91	0.92
Second	0.92	0.93	0.94	0.93
Third	0.96	0.94	0.95	0.96
Fourth	0.97	0.97	0.98	0.98
Top	0.98	0.98	0.98	0.98
		Less-censored earnings replacement rate (LC-REPRATE)		
Bottom	0.89	0.91	0.89	0.93
Second	0.92	0.92	0.95	0.93
Third	0.94	0.94	0.95	0.97
Fourth	0.95	0.96	0.97	0.97
Top	0.99	0.98	0.97	0.99
		Taxable earnings (TX-EARN)		
Bottom	0.97	0.99	0.98	1.00
Second	1.04	1.04	1.04	1.05
Third	1.04	1.05	1.05	1.05
Fourth	1.02	1.03	1.03	1.03
Top	1.02	1.02	1.02	1.02
		Less-censored earnings (LC-EARN)		
Bottom	0.99	1.00	1.00	1.02
Second	1.04	1.05	1.04	1.05
Third	1.04	1.05	1.05	1.05
Fourth	1.02	1.03	1.03	1.03
Top	1.02	1.02	1.02	1.02

SOURCE: Authors' calculations using data from Modeling Income in the Near Term (MINT3).

NOTE: Numerators of ratios are by non-DIB quintiles; denominators are by all-participant quintiles.

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