

**The Effects of Earnings Sharing on U.S. Social Security Benefits in 2030:
An Application of the MINT Microsimulation Model***

Howard M. Iams
Office of Research, Evaluation, and Statistics
U.S. Social Security Administration
Howard.M.Iams@ssa.gov

Gayle L. Reznik
Office of Retirement Policy
U.S. Social Security Administration
Gayle.Reznik@ssa.gov

Christopher R. Tamborini
Office of Retirement Policy
U.S. Social Security Administration
Chris.Tamborini@ssa.gov

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* The authors have equal responsibility for this work. The findings and conclusions presented in this paper are those of the authors and do not represent the views of the U.S. Social Security Administration. Please contact the authors before citing the paper. Inquiries can be sent to Social Security Administration, 500 E Street, S.W., Room 914, Washington, D.C. 20254-001. Telephone: 202.358.6217, Fax: 202.358.6187.

Abstract

This study examines the potential distributional implications of two earnings sharing alternatives within the U.S. Social Security system, a basic earnings sharing option, as well as a modification that incorporates an inheritance of earnings for surviving spouses. Utilizing a robust microsimulation model, Modeling Income in the Near Term (MINT), the paper analyzes the effects of the options on the projected aged population in 2030, with a focus on the socioeconomic and demographic characteristics driving gains and reductions in future benefits among women. Results show important gains and reductions under the proposals across different subgroups. A higher percentage of married women from one-earner couples would receive benefit reductions than from dual-earner couples. However, married women, overall, would experience less of a benefit reduction than divorced or widowed women. Widows and divorced surviving women, particularly those in the lower socioeconomic groups, would receive the steepest benefit decreases under earnings sharing. Current-law benefit type is identified as an important factor in driving the distributional effects of the options. Adding an inheritance provision within earnings sharing, where surviving spouses would be able to count all of the earnings of deceased spouses in years that they were married along with their own earnings, would reduce the extent to which survivors receive benefit decreases relative to current law; however, it may not protect as many surviving spouses from benefit reductions as might be expected.

INTRODUCTION

As part of an ongoing effort to analyze the distributional effects of implementing policy alternatives to Social Security, this paper considers the widely discussed reform of earnings sharing. Under the current Social Security system, benefits are provided to qualified retired workers, and to the spouses and survivors of these workers who may be eligible for an “auxiliary” benefit of either up to 50 percent of the worker’s basic benefit as a spouse or up to 100 percent of the deceased worker’s basic benefit as a survivor. Under earnings sharing, benefit calculations would be based on the combined earnings records of spouses, which would be split equally during each year of marriage. Such an approach has been viewed as a way to “update” Social Security’s family benefit structure

and make it more marriage neutral (Favreault, Sammartino, and Steuerle 2002a; Forman 2006; Smeeding 1999; Steuerle and Bakija 1994).

This study's central goal is to assess how earnings sharing would affect the Social Security benefits of future retirees at a time when a wide range of alternatives for reforming Social Security continues to be discussed. Building on recent distributional analyses of various Social Security reform options (Favreault and Steuerle 2007; Forman 2006; Herd 2006; Iams, Reznik, and Tamborini 2009), this paper's analysis uses the Social Security Administration's Modeling Income in the Near Term (MINT) microsimulation model to simulate two earnings sharing scenarios: a basic design with no survivor or spouse benefits; and a modified design with inheritance of earnings by surviving spouses. The latter attempts to offset potentially sharp reductions in the benefits of surviving spouses under a basic earnings sharing design by allowing surviving spouses to count all of the earnings of all deceased spouses in years that they were married, in addition to the surviving spouse's own earnings.

The analysis focuses on projected retirees age 62 and older in 2030, a population that will have sharply different demographic and socioeconomic characteristics than current retirees. Because Social Security benefits are very important to women and their retirement income, the focus of the paper is on how women fare under the proposals. An advantage of the current study is the inclusion of an array of socioeconomic and demographic variables that allow us to assess variation in the potential effects of earnings sharing across key subpopulations of women. To date, most previous studies have overlooked potential variation in the impact of earnings sharing within subpopulations of married, widowed, and divorced women. The findings here show important differences

in the two earnings sharing scenarios, help advance the understanding of the differential effects of earnings sharing across various subpopulations of retirees, and illustrate the value of using microsimulation to conduct distributional analysis of public policy changes.

The next section sketches the background surrounding earnings sharing and prior studies evaluating its distributional effects. The subsequent section describes the data and methods used in the microsimulation analysis. The paper then presents the results, followed by further discussion and conclusions in the final section. This analysis does not advocate or oppose earnings sharing; no recommendations will be made.

BACKGROUND: EARNINGS SHARING AS A POLICY ALTERNATIVE

The U.S. Social Security system provides monthly benefits to retired workers and their dependents when the worker retires, becomes disabled, or dies. The system bases retirement benefits on an individual's earnings history and marital history in conjunction with the earnings of current and previous spouses. To be eligible for a retired-worker benefit, typically a person must have worked at least 10 years (earning 40 quarters) in Social Security employment. Certain family members of retired-workers may also be eligible for a family-based benefit. Spouses of insured workers may be eligible for a spouse benefit, and this benefit can equal up to 50 percent of the Primary Insurance Amount (PIA) of the work record of the living spouse.¹ Surviving spouses may be

¹ The benefit amount is based on the worker's PIA, which is a function of a worker's *average indexed monthly earnings* (AIME), based on the average of the 35 highest earnings years of Social Security employment. The benefit amount also depends on the person's age when he or she first claimed benefits. Should a person claim their benefit before full retirement age, benefits would be reduced in an actuarially fair manner to compensate for the longer time they would receive the benefit. Benefits are increased when a person elects to receive benefits after their full retirement age.

eligible for a survivor benefit beginning at age 60 or age 50, if disabled, and this benefit can equal up to 100 percent of the deceased spouse's worker benefit.² Divorced individuals may qualify for either a spouse or a survivor benefit based on the work record of their ex-spouse, but only if they had been married for at least 10 years.³

Persons who qualify for a retired-worker benefit based on their own earnings record and an auxiliary benefit (spouse or survivor) based on their spouses' earnings record receive the higher benefit of the two. Should the retired-worker benefit equal less than the spouse benefit, the beneficiary is said to be a dually-entitled spouse, meaning part of a spouse benefit is added to their own retired-worker benefit to reach the full spouse benefit. Likewise, an aged person with their own retired-worker benefit equal to less than a survivor benefit would be called a dually-entitled survivor, meaning they receive their own retired-worker benefit with part of the survivor benefit added to reach a full survivor benefit. If the person's retired-worker benefit is higher than the spouse or survivor benefit, the person simply would receive their own retired-worker benefit.

Incorporating earnings sharing in the Social Security program would dramatically alter the computation of benefits. In general, earnings sharing plans propose a design in which the lifetime earnings record of each person would be credited with half of the couple's combined earnings in each year of marriage and credited with her or his own earnings in years not married. In the case of multiple marriages, the sharing would occur with different spouses.

² A surviving spouse must also be unmarried or have remarried at or after age 60 to qualify for a survivor benefit.

³ The 1939 Social Security Amendments established a spouse benefit, equal to one-half of the retired-worker benefit of the present spouse, and a widow's benefit, equal to three-fourths of the deceased husband's worker benefit. The auxiliary benefit system was originally designed to protect women who had little or no earnings in an era where most women did not work and where the support system of the extended family was disappearing. Useful summaries can be found in Berkowitz (2002), Martin and Weaver (2005), and DeWitt, Béland, and Berkowitz (2008).

Several themes characterize discussions about the perceived desirability of earnings sharing. An underlying rationale reflects the point of view that economic resources acquired during a marriage, including earnings credits, should be shared equally regardless of the household division of labor. In the most basic form, there would be no auxiliary spouse or survivor benefits in earnings sharing, but rather only retired-worker benefits (see, for example, Forman 2006). Another theme draws attention to the interaction between family benefit rules and changing demographic and socioeconomic conditions (Berkowitz 2002; Favreault and Steuerle 2007). See Blau, Ferber, and Winkler (2006) for a valuable discussion of changing earnings and work patterns among women. Ruggles (1997) provides a valuable historical overview of changing divorce patterns in the United States over the 20th century. An additional topic of discussion related to auxiliary benefits is the potential effect of spouse benefits on labor force participation of older workers (e.g. Blau 1997).

Earnings sharing proposals have generally been viewed as a way to inject more equity into the system (Steuerle and Bakija 1994). A prominent equity-related concern is the treatment of one-earner married couples relative to single persons and two-earner married couples (Berkowitz 2002; Favreault and Steuerle 2007; Favreault, Sammartino, and Steuerle 2002b; Forman 2006; Steuerle and Bakija 1994, 1997). Due to the features of Social Security's family-based benefits, a one-earner couple with the same total lifetime earnings as a two-earner couple often receives higher total benefits.⁴ A detailed example of this is provided in Appendix A.

⁴ However, two couples with the same lifetime earnings but with different time paths of earnings may not pay the same amount of Social Security taxes.

The recommendation for earnings sharing is sometimes seen as a way to improve benefit adequacy for growing subpopulations, such as divorced women whose marriages are too short (less than 10 years) to qualify for spouse or survivor benefits. Under earnings sharing, earnings credits based on the spouse's record would be "portable," regardless of the length of marriage. This concern has been underscored by the increasing prevalence of divorce (Ruggles 1997), shorter marriages prior to divorce, and lower marriage and remarriage rates (Cherlin 1992; Goldstein and Kenney 2001; Waite 1995), which will result in a modest decline in the share of divorced women potentially eligible for spouse or widow benefits in the future (Butrica and Iams 2000; Harrington Meyer, Wolf, and Himes 2006; Herd 2005; Tamborini and Whitman 2007; Tamborini, Iams, and Whitman, *forthcoming*).

Critics may argue, however, that implementing earnings sharing would be inconsistent with the goal of providing adequate benefits to workers and families. Some point out that earnings sharing proposals would require policymakers to face tough trade-offs, such as potentially sharp benefit reductions for survivors. Another issue centers on the costly and difficult transition to and the administration of earnings sharing.⁵ Previous earnings sharing proposals have also suffered from too much complexity, making it hard to ascertain clear winners and losers at an aggregate level (Fierst 1990).

Over the past 25 years, a number of previous studies have attempted to estimate the distributional impact of implementing earnings sharing into the benefit calculations of Social Security (CBO 1986; Favreault and Steuerle 2007; Fierst and Campbell 1988; Flowers and Horowitz 1993; HHS 1985a; HHS 1985b; Schwabish, Simpson, and

⁵ For example, new administrative procedures would be required for collection of marital status and length of marriage information in relation to marriage partners' earnings.

Topoleski 2007; Zedlewski 1984).⁶ While varied in scope, most generally agree that widowed men and women would experience some of the steepest benefit reductions as a result of the elimination of the survivor benefit if earnings sharing were implemented. As a result, most prior studies do not examine a pure earnings sharing approach, but rather a plan that makes adjustments for surviving spouses. In a recent study, Iams, Reznik, and Tamborini (2009) examine several basic earnings sharing plans using SSA's MINT model and find that the majority of future baby-boomer retirees would experience a reduction in current law benefits, particularly widows and widowers. However, the study did not focus much attention on modified earnings sharing designs, such as including additional inherited earnings for surviving spouses, or assess potential variation in the impact of earnings sharing across subpopulations of marital groups.

Building on previous work, the current study examines how Social Security benefits would change in response to two earnings sharing approaches, with a focus on women. One central advantage of the study is the inclusion of a basic earnings sharing option and a modified inheritance option for surviving spouses. Another contribution is the utilization of a robust microsimulation model (MINT), which allows for the exploration of the socioeconomic and demographic characteristics that drive outcomes for women under earnings sharing. Because MINT tracks lifetime earnings of husbands and wives, the paper also includes analysis at the couple level (i.e., married couple's total benefits). To date, there is a dearth of research on the distributional effects of earnings sharing on different subpopulations of women, at the household and individual level.

⁶ The Social Security Amendments of 1983 directed the Secretary of the Department of Health and Human Services (HHS) and the Congressional Budget Office (CBO) to examine the effects, costs, and feasibility of using earnings sharing to calculate Social Security benefits. The full report of the HHS Secretary (HHS 1985a) was published as a Committee Print by the House Ways and Means Committee, and is summarized in a *Social Security Bulletin* article (HHS 1985b). CBO's study was published separately (CBO 1986).

DATA AND METHODS

The MINT model

Estimating the impact of social policy changes on individuals and their families often requires a sophisticated microsimulation data system (Atkinson et al. 2002; Martini and Trivellato 1997). Microsimulation methodology uses microdata to simulate the implications of policy changes at the individual and household level (Mitton, Sutherland, and Weeks 2000). While models that allow for simulating policy changes on future populations have become more common in recent years, they are still fairly recent given the complexity involved in modeling the future, and thus, accounting for changes in labor and marital patterns, along with other structural changes of a given population.

Program complexity makes it particularly demanding to estimate the distributional effects of alternatives to the U.S. Social Security system. Benefits reflect the lifetime earnings of each person and their marriage partners. In addition to a person's own retired-worker benefits, the lower earner spouse may be entitled to half (spouse) or the full (survivor) benefit of the higher earner spouse. When a person is divorced or widowed, marriage-based benefits may still be available if the marriage terminated by divorce after 10 years of marriage or by death of the spouse. Furthermore, because policy changes are almost always proposed for future retirees, analysis of these policies must be able to capture socioeconomic and demographic changes that will affect the composition and expected retirement income of future retirees. Proposals such as earnings sharing increase the data requirements because benefits are a function of

spouses' share of total earnings in each year of marriage, plus any individual earnings outside of marriage.

The Modeling Income in the Near Term (MINT) microsimulation model represents one of the most complete data systems designed to meet the data requirements for conducting distributional analysis of policy changes to Social Security. Developed by the Social Security Administration's Office of Research, Evaluation, and Statistics with assistance from the Brookings Institution, the RAND Corporation, and the Urban Institute, the MINT model uses observed and estimated population characteristics to make independent projections of the demographic characteristics (e.g. marital history, longevity) and expected economic status (e.g. Social Security benefits, pensions, and assets) of retirees born between 1926 and 1972.⁷ MINT has been used in a number of policy analyses related to Social Security benefits and retirement (Butrica and Iams 2003; Butrica, Iams, and Sandell 1999; Sarney 2008; Biggs, Sarney, and Tamborini 2009).

While a systematic account of MINT's methodology is beyond the scope of this paper, the model's main features warrant exposition. MINT begins with nationally-representative data from the Census Bureau's 1990-1993 and 1996 Survey of Income and Program Participation (SIPP), which are matched to SSA longitudinal earnings and benefit data through 2001.⁸ For the aged population in 2030, MINT uses survey data through the first third to the first half of respondents' lives and statistically projects their

⁷ This analysis uses the 3.0/4.0 version of MINT (MINTEX). Recent versions of MINT, including MINTEX, have been expanded beyond its original "near term" structure to include later birth cohorts (1973–2017 cohorts). Because this study examines retirees in 2030, the analysis does not include these cohorts.

⁸ SIPP is a household survey of the U.S. civilian noninstitutionalized population. Interviews are conducted every 4 months for 28 to 48 months depending on the panel. The survey provides robust information on a wide variety of topics, including income and wealth, labor force participation, participation in government programs, marital histories, and other socioeconomic and demographic variables that allow measurement of the future costs and effectiveness of existing government programs.

demographic and economic characteristics forward, adjusting for expected demographic and socioeconomic changes, including mortality. Detailed summaries of MINT's earnings projections can be found in Appendix B and in Toder et al. (2002).

In projecting marital histories, MINT follows a series of gender-specific continuous time hazard models for marriage and divorce events built off of reported marital histories in the 1990 and 1991 SIPP panels (Panis and Lillard 1999). Explanatory variables include age, education, race/ethnicity, years unmarried, whether widowed, and the calendar year after 1980. Statistical models used for mortality estimates underlie projections of widowhood. More detailed information on MINT is presented in Appendix B; Toder et al. (2002); Smith, Cashin, and Favreault (2005); and Smith et al. (2007).⁹

To calculate Social Security benefits, MINT draws from a comprehensive Social Security benefit calculator built into the model. Accordingly, MINT identifies the characteristics of current, former, and future spouses, most importantly their earnings and marital histories. Individuals married at the time of the SIPP panels who remain married through the projected period are exactly matched to their spouse in the survey. MINT uses an imputation process based on nearest-neighbor matching to assign a spouse of a respondent to a respondent who needs a future or former spouse. Because MINT matches up spouses, researchers are able to calculate shared lifetime earnings as well as the total value of the couple's benefits under current or alternative benefit designs, such as earnings sharing.

⁹ These reports are publicly available on the Urban Institute Internet site (www.urban.org) and from the authors.

Analytic approach

Using MINT, the paper simulates earnings sharing within Social Security on the projected retiree population of 2030, with a focus on women. To explore potential differences between different earning sharing designs, two options are simulated. The first policy design, *ES1*, is earnings sharing without any auxiliary spouse or survivor benefits or enhancements. This option adheres to the most basic form of earnings sharing, which “would eliminate the current system of benefits for workers and spouses (or surviving spouses) and instead credit each spouse with half of a couple’s total covered earnings for each year of marriage” (HHS 1985a: XIII). In *ES1*, the Social Security earnings of married couples are equally divided during each year of marriage to calculate a retired-worker benefit for each spouse. In years when individuals are not married, earnings are based on the individual’s own earnings record.¹⁰

The second policy design, *ES2*, is earnings sharing with inheritance. In *ES2*, survivors can inherit the Social Security earnings (non-shared) of all deceased spouses, including deceased ex-spouses, in addition to their own earnings for each year of marriage. Thus, instead of counting half of the combined earnings for each year of marriage to a deceased spouse, survivors can count all combined earnings during each year of marriage to a deceased spouse.¹¹ This provision reflects one plausible means to address potential benefit reductions for survivors under basic earnings sharing.¹² Another

¹⁰ The sharing of earnings can occur even after an individual or spouse begins collecting Social Security benefits and does not terminate at age 62. The same is true for the earnings sharing with inheritance provision.

¹¹ Under the inheritance provision, the combined earnings for survivors are limited to the Social Security maximum taxable earnings.

¹² This option is similar to the provision modeled in HHS (1985a), which included “offset reductions in benefits for survivors compared to present law,” so that surviving spouses and surviving divorced spouses could “inherit the total amount of the deceased spouse’s covered annual earnings for each year of marriage and ... add this amount to his or her own earnings” (HHS 1985a, XIV).

possible modification may be to retain survivor benefits, but calculate those benefits under earnings sharing. However, recent work by Iams, Reznik, and Tamborini (2009) shows that keeping survivor benefits under a shared earnings framework would not result in substantially different outcomes than a basic design without any auxiliary spouse or survivor benefits.

The paper's analysis focuses on the impact of the policy scenarios for women projected to be 62 and older in 2030. The analysis starts at age 62 because that is the age at which individuals are entitled to receive retired-worker benefits and the age at which spouses of retired workers are eligible for benefits, and the age at which most individuals begin receiving Social Security retirement benefits. The selection of the year 2030 serves two purposes. First, because earnings sharing, if adopted, would represent a major change to the current Social Security system, it could be expected that the policy would be applied only for future retirees to permit adequate time for financial planning. Second, the aged population in 2030 mainly consists of baby boomers, a cohort at the forefront of demographic changes in the American population, such as women's increased labor force participation and downward marriage trends.¹³ Also, the paper focuses on the impact of earnings sharing on benefits in 2030 rather than on lifetime benefits, since it is more straightforward to compare the impact on benefits at one point in time rather than over a lifetime. A person's benefit can increase or decrease over time depending on changes in marital status and earnings, and so the effect of a policy proposal on lifetime benefits can differ from the effect on benefits in a specific year. For example, a married woman in

¹³ Typically, the baby-boom cohort is defined as persons born between 1946 and 1964. The baby-boom cohort makes up about 70 percent of the retiree population analyzed in the paper. Individuals born before 1946 are also included in the analysis to allow for additional widows and widowers, a group greatly affected by earnings sharing. The oldest person in the population is born in 1926.

2030 could receive increased annual benefits in 2030 due to earnings sharing, but if she soon becomes widowed, then she could receive reduced lifetime benefits, as compared to current law.

The analysis distinguishes between married, divorced, and widowed women, because they are differentially affected by different earnings sharing approaches (Iams, Reznik, and Tamborini 2009). Marital status in 2030 is used to define an individual as married, divorced, or widowed.¹⁴ An important distinction is made between married women from one-earner couples and two-earner couples. To gauge how different subgroups of women fare under earnings sharing, the paper analyzes the outcomes by a series of socioeconomic and demographic variables, including benefit type, age, race/ethnicity, education, current retirement income, and shared (combined) lifetime earnings. This line of analysis helps improve the understanding of the potential variation of the policy's impact and whether the options yield progressive outcomes at the individual and household level. Including the Social Security benefit type in the analysis is especially valuable in that it is associated with the economic well-being of beneficiaries (Weaver 1997). Social Security proposals often have different effects on beneficiaries depending on their benefit type.

The results for the never-married population are not reported because they would not be impacted by earnings sharing, by definition. Individuals projected to be eligible for disabled-worker benefits, as well as married individuals whose current spouses are projected to be eligible for disabled-worker benefits, are also excluded because of the incomplete nature of their earnings histories. It is assumed that all beneficiaries would

¹⁴ Alternatively, in some of the Social Security literature, an individual is defined as divorced or widowed based on the type of Social Security benefit received.

have had the opportunity to share earnings over their entire working and married lifetimes. All estimates are weighted to reflect the national population, and income is set to 2005 dollars.¹⁵

It is important to note that MINT faces certain limitations, as does any microsimulation model (Mitton, Sutherland, and Weeks 2000; Remler, Graff Zivin, and Glied 2004). Because MINT is based on the SIPP panels, the projections contain a margin of error associated with the differences between the sample population and the actual population to which the projection is applied.¹⁶ For these reasons, small differences in the results should be viewed with caution. There is also projection error related to MINT's assumptions of the future, and the actual effects of the options could be somewhat different than presented here. Additionally, MINT does not assume any type of behavioral response to earnings sharing.¹⁷ Finally, it is outside the scope of the paper to analyze the financial implications of earnings sharing on the Social Security Trust Fund, the economy, or the transition costs resulting from switching to such a system. Such issues also need to be taken into account when considering the overall impacts of any modification to Social Security (Fierst and Campbell 1988; HHS 1985b).

RESULTS

Overall Change in Benefits

¹⁵ After the aforementioned sample restrictions are applied, the unweighted sample size is 45,514 individuals.

¹⁶ MINT results are derived from a complex system of statistical equations projecting five independent panels of SIPP, and as a result, sampling variation cannot be measured through normal estimation processes. With a data set as large as MINT, the possible statistical model errors from a complex system of statistical equations estimated from differing data sources would overwhelm sampling variation estimations.

¹⁷ Individuals may change their decisions about work, the timing of retirement, and the claiming of Social Security benefits in response to the changed benefits under earnings sharing. These decisions are currently based on the expected benefits under current law. If allowed to change their behavior, individuals may make different decisions in order to increase their expected benefits under earnings sharing.

Table 1 begins with the impact of the options for the overall population 62 and older in 2030.¹⁸ Note that *no change* in benefits under the options is defined as having projected benefits within 1 percent of current law. Benefits that change by 1 percent or more above or below current law are defined as either increases or decreases. For divorced and widowed individuals, benefits are annual individual benefits; for married individuals, benefits are half the combined annual couple benefit. Only beneficiaries who would receive benefits under current law are included in the table. Married beneficiaries are only included if their spouses are also current-law beneficiaries.¹⁹

Because MINT can track lifetime earnings of both husband and wife, the analysis estimates changes in couple benefits for married individuals rather than individual benefits. This is an important feature of the analysis given that earnings sharing among married couples typically results in the transfer of earnings from husband to wife as a result of women's historically lower lifetime earnings (Iams 1993). Thus, a married person may individually have lower benefits under earnings sharing but the couple may have higher benefits. To make the results for married individuals more comparable to the

¹⁸ Table 1 and the subsequent tables report the average individual percent difference to measure the change in benefits from current law. The average individual percent difference is produced by calculating the percent differences for each individual and then taking a weighted average of the individual values. This differs from the percent average difference, which involves summing the weighted benefit amounts of all the individuals in each subgroup and finding the percent difference of the summed benefits of that subgroup under the proposal. In calculating the percent average difference, those with relatively higher benefit amounts will have a greater effect on the average than those with relatively lower benefit amounts. For a distributional analysis of Social Security benefits, where the effects on low earners and the progressivity of the program are of concern, the average individual percent difference better illustrates the distributional results for groups with low benefit amounts that might be lost using the percent average difference measure.

¹⁹ Requiring the spouse to also be a beneficiary under current law eliminates approximately an additional 14 percent of married beneficiaries from the analysis. Also note that a small number of non-beneficiaries under current law become beneficiaries under earnings sharing (less than half of 1 percent of the overall population). These new beneficiaries would gain benefits due to earnings sharing. These new beneficiaries are not included in the analysis.

results for the other marital subgroups, the couple benefit is halved in Tables 1-3 and referred to as the per capita benefit.

Table 1 shows that, overall, *ESI* would lead to benefit decreases of 8 percent of current law, while *ES2* would lead to benefit increases of 1 percent.²⁰ As might be expected, a higher share of retirees would receive reduced benefits under *ESI* (61 percent) than under *ES2* (39 percent). However, the reduction for those receiving benefit decreases would be substantive under either proposal, 17 percent under *ESI* and 13 percent under *ES2* less than current law benefits. Conversely, 28 percent of aged beneficiaries would receive benefit increases under *ESI*, by an average of 10 percent of current law benefits. Under *ES2*, the percentage receiving benefit increases would rise to 49 percent, by an average of 13 percent of current law benefits. The improved outcomes are driven by aged beneficiaries who have deceased spouses and under the inheritance modification would inherit the earnings of their deceased spouse.

To get a sense of the extent to which earnings sharing would differentially affect marital groups, Table 2 separates out the effects for married, divorced, and widowed men and women. For *ESI*, the percentage of men and women experiencing benefit reductions would be relatively equal. However, the overall average percentage reduction would be higher for women than men (21 percent and 11 percent, respectively). For married men and women, the average percentage reduction in benefits would be 9 percent of current law benefits. The results for married men and women are similar because the per capita couple benefit is used in the analysis.

²⁰ The reported results in the tables are based on the average individual percent difference measure. See Iams, Reznik, and Tamborini (2009) for an earnings sharing analysis using the percent average difference measure. The results are qualitatively similar.

The effect on survivors is very different from that of married persons. Consistent with prior work, benefits are projected to decrease under *ESI* for the vast majority of widows (93 percent), by an average percentage difference of 27 percent, and widowers (96 percent) by an average percentage difference of 20 percent. Part of the explanation for why widows would receive such sharp decreases is that the widow under *ESI* would receive the same benefit after the death of her husband as when her husband was alive, but under current law, the death of a husband would initiate a survivor benefit of up to 100 percent of the deceased husband's benefit. Assuming the husband was the higher earner in the couple, earnings sharing would reduce the earnings credited to the husband and increase the earnings credited to the wife; however, the credited shared earnings of each spouse would be lower than the unshared earnings credited to the husband under current law. Thus, the widow's benefit under earnings sharing would be lower than her current law survivor benefit. In contrast, most widowers would receive benefit decreases under basic *ESI* because sharing earnings with a lower-earning deceased spouse during each year of marriage would cause the benefit received under earnings sharing to be lower than his current law benefit based on his own unshared earnings.

The addition of inheritance (*ES2*) would substantially reduce the percentage of widows and widowers with benefit decreases, while raising the percentage with benefit increases. Nevertheless, with the inheritance provision applied, 17 percent of widowers and 40 percent of widows would receive reduced benefits compared to current law, with the reductions averaging about 20 percent of benefits. Many widows would continue to experience benefit decreases primarily because inherited earnings would only come from years of marriage, and the deceased husband could have higher earnings than the wife in

years before marriage. These “unmarried” earnings contribute to the current law survivor benefit but would be omitted from the inherited earnings sharing survivor benefit.

Earnings sharing would also impact divorced men and women. Divorced men would fare, on average, worse than divorced women under both scenarios. *ES1* would reduce benefits for a higher percentage of divorced men (77 percent) than women (45 percent). Divorced women who receive benefit increases would experience higher average gains than their male counterparts; however, among those receiving benefit decreases, the average decline would be higher than that of divorced men.

Divorced women would fare much better under *ES2* than *ES1*. 63 percent of divorced women would receive an average benefit increase of 18 percent relative to current law under *ES2* compared to 38 percent of divorced women who would receive an average benefit increase of 16 percent under *ES1*. Underlying the differences between the two earnings sharing designs for divorced women is the fact that under current law many divorced women receive survivor benefits based on a deceased ex-husband’s record. Such women, as later analysis will show, would therefore fare much better under an earnings sharing approach that includes some type of survivor benefits (for example, *ES2*).

The next section delves deeper into the effects of the options across different demographic and socioeconomic subpopulations of married, widowed, and divorced women, in order to better identify the underlying factors that drive the distributional outcomes for women under earning sharing.

Benefit Changes for Women by Demographic and Socioeconomic Characteristics

Married Women. Table 3 shows estimates of the effect of *ESI* on married women across various demographic and socioeconomic characteristics. Note that women who are not affected by earnings sharing are not included in Tables 3-5; consequently, the share with higher and lower benefits under the proposals do not necessarily sum to 100 percent.

The Social Security benefit type under current law, which is essentially a proxy for relative lifetime earnings between spouses, is important in the understanding of the impact of earnings sharing.²¹ Married women who collect current-law spouse-only benefits, that is, women who are not entitled to their own retired-worker benefit under current law, would be the hardest hit benefit type; 73 percent would receive reduced benefits by an average of 27 percent. This would occur because under current law the total couple benefit of spouse-only beneficiaries would be based on half of the husband's retired-worker benefit (based on unshared earnings) along with the retired-worker benefit of the husband, compared with *ESI* under which the total couple benefit would be based on roughly total combined earnings during marriage, plus any earnings outside of marriage.

The socioeconomic characteristics (current income quintiles, lifetime earnings quintiles, and education) highlight the extent to which earnings sharing yields progressive outcomes for married women.²² Generally speaking, the pattern is very similar for the

²¹ There are many types of benefits paid under the Social Security program. The benefit types analyzed in the paper are: Retired Worker (receives only a Social Security benefit on their own earnings records); Spouse & Worker (receives a retired worker benefit and some of an aged spouse benefit); Spouse only (receives an aged spouse benefit); Survivor & Worker (receives a retired worker benefit and some of an aged survivor benefit); and Survivor only (receives an aged survivor benefit).

²² The current (per capita) income quintiles and present value of shared lifetime earnings quintiles are calculated on the population of married (if the husband also receives benefits under current law), divorced, and widowed women (age 62 and older) in 2030 who receive benefits under current law. Current income is based on annual household income. This includes household earnings, asset income, Social Security,

three socioeconomic measures; married women who have higher levels of income, lifetime earnings, and education would be much more likely to receive benefit increases under *ESI* than married women who have lower levels of income, lifetime earnings, and education. Likewise, married women in the lowest quintiles of income and lifetime earnings and with less than 12 years of education would have the highest prevalence and percentage reduction in benefits.

In general, the impact of *ESI* would be only modestly different for married women by age and race/ethnicity. However, a markedly higher percentage of the oldest married women (90 and older) would receive benefit decreases. This outcome is likely related to lower labor force participation among women in the cohort reflected by this age group, which is characterized by higher probabilities of being in a one-earner couple. In terms of race/ethnicity, White married women would be somewhat more likely to have benefit increases and less likely to have benefit reductions, as compared to their Black and Hispanic counterparts.

Figures 1 and 2 allow us to test if *ESI* would have differential effects on married women from one-earner and two-earner couples.²³ To recall, a major rationale for

Supplemental Security Income (SSI), and income from non-spousal co-residents. Lifetime earnings are the present value of real (inflation-adjusted) shared lifetime total earnings. Shared earnings are the same as individual earnings except that the earnings for married couples are ‘shared,’ that is, the sum total of the married couple’s earnings is divided in half and each half is attributed to one of the spouses. The present value is calculated using a discount rate equal to the effective rate for the Social Security trust funds. Education is based on the reported number of years of education: 12 years is categorized as High School; 14 years is categorized as Associate; 16 years is categorized as Bachelor; and more than 16 years is categorized as Graduate.

²³ For computational reasons, Figures 1 and 2 are restricted to married women in their first marriage with both spouses receiving benefits under current law. Thus the Figures include approximately 73 percent of the total population of Table 3. The one-earner and two-earner designation is defined by the current-law benefit type of the husband and wife. If one spouse receives a retired-worker benefit and the other spouse receives a spouse benefit, then the couple’s status is one-earner. Two-earner couples are couples where each spouse independently has enough earnings to receive benefits. Couples where both spouses are entitled to a worker benefit are separated out by two-earner couples in which both the husband and wife receive retired-worker benefits and two-earner couples where one spouse’s benefit type is retired worker

earnings sharing is to improve horizontal equity between one-earner and two-earner married couples. Under *ESI*, per capita couple benefits would increase for about 40 percent of married women in the two types of two-earner couples, by an average of 7 percent, compared with 23 percent of married women in one-earner couples, by an average of 18 percent. Likewise, benefit reductions would be more widespread for married women in one-earner couples, with 70 percent receiving benefit decreases by an average of 29 percent. In contrast, 40 percent of married women in two-earner couples with retired-worker beneficiaries and 49 percent of married women in two-earner couples with dual entitlement (where the spouse gets higher spouse benefits under current law) would experience benefit reductions, with relatively smaller average percentage declines of 5 and 7 percent, respectively. As seen in Table 3, much of what is driving the sharp benefit reductions for married women in one-earner couples is the loss of the current-law spouse benefit.

In sum, 45 percent of married women would receive benefit decreases under *ESI*, and 40 percent would receive benefit increases. Married women in one-earner couples would be more likely to receive benefit decreases than married women in two-earner couples, and those reductions would be much greater for married women in one-earner couples (or spouse-only beneficiaries) than for married women in two-earner couples. Married women from higher socioeconomic groups would be more likely to receive

and the other spouse's benefit type is dually-entitled spouse. In dual entitlement, the lower earning spouse receives her earned worker's benefit and an unearned supplement up to the level of the auxiliary spouse benefit (about one-half of the higher earner's benefit). Due to the progressive benefit formula, dual entitlement generally occurs when the lower earning spouse has earnings about a third or less than the earnings of the higher earning spouse.

benefit increases and smaller reductions when receiving benefit decreases than those from lower socioeconomic groups.

Widows. Another way to explore the options' impact on women is to focus on different subpopulations of widows. To recall, Table 2 showed sharp benefit decreases for widows under *ESI*, but also showed that *ES2* would be successful in reducing the percentage receiving benefit decreases. However, even with inheritance, 40 percent of widows would receive benefit decreases compared to current law. One explanation for this pattern is that the deceased husband had higher earnings than the wife in the years before marriage. These prior-to-marriage earnings, which contribute to current law survivor benefits, would be omitted from the inherited survivor benefit under earnings sharing, thus reducing the benefit received by the widow.

Table 4 displays how widows fare under *ESI* and *ES2* by various characteristics. Estimates across current-law benefit types show variation in the effect of earnings sharing on different subpopulations of widows. In general, widows receiving retired-worker benefits would do better under earnings sharing (both *ESI* and *ES2*) than their counterparts receiving at least some of their current law benefit off the record of their deceased husband (dually-entitled widows and survivor-only widows). Still, more than three-quarters (78 percent) of retired-worker widows would receive benefit decreases as a result of *ESI*. These widows, however, would experience benefit declines under earnings sharing for very different reasons than other widows. Namely, since these widows were receiving retired-worker benefits (and not survivor benefits) under current law, they had higher lifetime earnings than their husbands. Thus, under *ESI*, the earnings of these

high-earning widows would have been shared with their lower-earning husbands during years of marriage, thus reducing the earnings credited toward their benefit.

In including an inheritance provision, the percentage of retired-worker widows receiving benefit decreases drops substantially from 78 to 3 percent, while the percentage receiving benefit increases rises sharply from 13 percent to 86 percent. This is to be expected; when there is the inheritance of earnings, the widow now inherits the deceased husband's earnings in addition to her own earnings in the years of marriage. This can result in an increase in benefits and a greater percentage experiencing benefit increases under earnings sharing. This is true even for these higher-earning retired-worker widows, who inherit the earnings of their lower-earning husbands.

By contrast, almost all of current-law dually-entitled widows and survivor-only widows, who represent the majority of widows, would receive reduced benefits under *ESI*. Interestingly, the results show that current-law survivor-only widows would experience dramatic average percentage reductions under both *ESI* and *ES2*, of approximately half of their current-law benefits under *ESI* and two-fifths under *ES2*. In contrast, the benefits for widows who were dually entitled under current law would be reduced by about a quarter under *ESI* and 15 percent under *ES2*. Thus, widows who were eligible for their own retired-worker benefit but were dually-entitled would be less negatively affected by earnings sharing (*ESI* or *ES2*) than widows with current law survivor-only benefits. Survivor-only widows would fare worse than the other widows because they have little or no earnings of their own. Under current law, these widows receive up to 100 percent of their husband's benefit which was based completely on his unshared earnings, but now under earnings sharing (*ESI*), they would receive a benefit

based on half of their husband's unshared earnings during years of marriage. Since retired-worker widows and dually-entitled widows have their own earnings, the effects of earnings sharing would not be as dramatic.

Moving to socioeconomic status, under *ES2* widows in the lowest quintile of current per capita income would be slightly more likely to receive increased benefits and less likely to receive reduced benefits compared to widows in the highest quintiles of current per capita income. However, for those who receive lower benefits, the average percentage reduction would be greater for these low-income widows relative to widows in the higher quintiles. Interestingly, widows in the lowest lifetime earnings quintile would also experience large average percentage reductions under both *ESI* and *ES2* compared to their counterparts in higher lifetime quintiles. This occurs, in part, because more widows in the lowest quintiles of current income and lifetime earnings are current law survivor-only widows, as compared to widows in the higher quintiles. The results for levels of education are similar to the results for the current income and lifetime earnings quintiles in that the average percentage reduction in benefits would be greater for less-educated widows than for more highly-educated widows.

Younger widows would be slightly better off, on average, than older widows under both options. This result is largely a function of the interaction between cohort and women's labor force participation rates. By and large, older widows in the sample are less likely to be eligible for benefits off their own earnings record (i.e., more likely to be survivor-only beneficiaries), while younger widows are more likely to be eligible for benefits off their own earnings record (i.e., more likely to be retired-worker beneficiaries). Under *ESI*, widows in the Hispanic and Other race/ethnicity group would be slightly

more likely to receive increased benefits, but White widows would receive slightly greater average percentage increases in benefits when receiving increased benefits than other race/ethnic groups.

Divorced Women. The final section looks at the impact of *ESI* and *ES2* across different socioeconomic subgroups of divorced women (Table 5). It is important to keep in mind that under current law many divorced women are eligible for a divorced survivor benefit based on the earnings of a deceased ex-husband. The inheritance of earnings option *ES2* is therefore an important piece of the analysis here.

The type of Social Security benefit received under current law is very important in understanding the effects of earnings sharing for divorced women. In general, divorced women with their own worker benefits and a living ex-spouse would fare better than those without worker benefits and a deceased ex-spouse. Under *ESI*, half of divorced women who only collect retired-worker benefits under current law would receive increased benefits and the average percentage increase would be 13 percent. Only a quarter of retired-worker divorced women would receive reduced benefits; their average percentage decrease would be 6 percent of benefits. A large percentage of these divorced women do well under earnings sharing because they now share the earnings of their higher earning ex-husband.²⁴ *ES2* would increase the percentage of retired-worker divorced women receiving increased benefits and would decrease the percentage of retired-worker divorced women receiving reduced benefits (as compared to *ESI*) because

²⁴ There is a 10-year length of marriage requirement to receive spouse benefits from an ex-spouse. Earnings sharing would allow divorced women who have marriages of less than 10 years to count the earnings of their ex-husbands during years of marriage in the calculation of their benefit. This group of retired-worker divorced women would also receive increased benefits under earnings sharing.

retired-worker divorced women who have deceased ex-husbands would inherit the earnings of the ex-husbands, thus increasing the benefits received under earnings sharing.

The majority of divorced women receiving spouse-only benefits or spouse and retired-worker benefits (dually entitled) would receive benefit increases from *ESI*. Among the dually entitled, divorced women receiving benefit increases would average a 33 percent gain, and those with reduced benefits would average a 15 percent decrease. These divorced women do well because they have low earnings relative to their ex-husbands and often have long marriages, so they receive spouse benefits under current law, but under earnings sharing, they would share the earnings of the high earning ex-husband during years of marriage, and so their benefits would increase. In contrast, most divorced women with deceased ex-husbands would experience benefit declines under *ESI*, and these reductions would be large, on average, 28 percent for dually entitled survivors and 46 percent for survivors only.

It is important to emphasize that earnings sharing, as is the case under current law, has different effects on divorced women depending on whether the ex-husband was alive or deceased. Many divorced women whose ex-husbands are still alive may receive higher benefits under *ESI* than current law, but if their ex-husbands were deceased these same women would receive benefit decreases under *ESI*. This is because many divorced women would switch to a dually-entitled benefit upon the death of their ex-husband, whose work history yields a benefit larger than their own retired-worker benefit (Butrica and Iams 2000; Williamson and Rix 2000).²⁵ This relationship is observed in the large

²⁵ In other words, sharing the ex-husband's earnings could increase the benefit of divorced women over the benefit received under current law, when their ex-husband is alive. However, the survivor benefit for divorced women is equal to up to 100 percent of the ex-husband's benefit, so sharing the ex-husband's

positive effect of *ES2* on divorced women who receive a current-law survivor benefit (either survivor-only or dually-entitled).

The effects of earnings sharing on different socioeconomic subpopulations of divorced women are complex. First, less-educated divorced women would be slightly less likely to receive increased benefits and more likely to receive reduced benefits. They would also receive greater average percentage increases in benefits and would receive greater average percentage reductions in benefits. Second, in contrast to the less-educated subgroup, divorced women in the lowest current income and lifetime earnings quintile would be more likely to receive increased benefits than divorced women in the higher quintiles. In addition, they would average greater percentage increases in benefits when receiving increased benefits. However, divorced women in the lower current income and lifetime earnings quintiles would average greater percentage reductions than their counterparts in the higher quintiles when they receive reduced benefits.

With respect to age, younger divorced women would be more likely to receive benefit increases, and older divorced women would be more likely to receive benefit decreases under *ESI* and *ES2*. The percentage reduction would be modestly greater for older divorced women under *ESI*. This is not surprising in light of the fact that older divorced women are more likely to have a deceased ex-husband. As previously observed, divorced women receiving survivor benefits under current law would experience sharper reductions in their benefits under the options, especially *ESI*.

Meanwhile, Black divorced women would be slightly less likely to receive increased benefits under *ESI* and they would average smaller percentage increases when

earnings could reduce the benefit compared to the benefit received under current law, when their ex-husband is deceased.

receiving increased benefits than the other race/ethnicity groups. Hispanic divorced women would be slightly more likely to receive benefit decreases under *ESI* than the other race/ethnicity groups, and Black divorced women would average slightly smaller percentage reductions.

CONCLUSIONS

Social Security policy reforms have distinct distributional impacts, depending on their provisions as well as the demographic and socioeconomic characteristics of the population analyzed. This study advances the understanding of the implications of adopting an earnings sharing approach to Social Security benefits for an aged population mainly consisting of baby boomers. Utilizing the MINT model, the results provide insights into the household and individual characteristics associated with benefit gains and reductions under earnings sharing, shedding light on the complex interactions between marriages, earnings histories of spouses, and Social Security program rules.

Taken together, several themes encapsulate the results of the paper. First, earnings sharing would have wide-ranging distributional impacts on future retirees' benefits. Consistent with prior research, the paper finds that the proposals would incur particularly steep benefit decreases for married women from one-earner couples and surviving spouses. Second, the modified *ES2*, with the inheritance provision, reduces the proportion of widows (and surviving divorced spouses) receiving benefit decreases and the relative decline for those with lower benefits. However, inheritance does not completely protect surviving spouses from reductions, as might be expected. Moreover, given downward trends in marriage, as well as a rising age of first marriage, it can be

expected that baby boomers would inherit less of the earnings of their deceased husbands than current retirees, due to having fewer years of marriage, and thus, fewer years to inherit earnings.

Third, the results shed light on how different subpopulations of women would fare under earnings sharing. The analysis underscores the importance of current-law benefits as a window into identifying how the options would affect retirees. For married women who are spouse-only beneficiaries, earnings sharing would result in benefit reductions more often and more extensively than for married women of other benefit types. Among widows, it is those with survivor-only benefits under current law who experience the steepest average percentage reductions. Likewise, among divorced women, it is those with current-law divorced survivor benefits who would most frequently receive reduced benefits.

Demographic and socioeconomic characteristics also shape the impact of earnings sharing on women. Earnings sharing does not result in progressive outcomes for married women, in that benefit reductions are more prevalent among the lower socioeconomic status groups. Earnings sharing would also reduce benefit adequacy among the most needy widows and divorced women. For example, widows from lower socioeconomic groups would receive a much greater average percentage reduction of benefits under both options than widows from higher socioeconomic groups.

Finally, the study highlights one example of how microsimulation methodology can be a useful approach to help determine the distributional implications of major structural changes to U.S. Social Security benefits. Until somewhat recently, researchers and policymakers did not have access to complex microsimulation models based on

microdata that allow for simulating policy changes on future populations across a range of groupings, including gender, education, marital status, and retirement income quintile. The use of microdata in the MINT model allows estimates of subgroups often overlooked in analyses using stylized workers, and thus, permits a better representation of the complex economic and social lives of the population. Further distributional analysis of other hypothetical changes to Social Security, reflecting different sets of provisions and perspectives, would be valuable.

Table 1. Projected Social Security Benefit Impacts of Two Earnings Sharing Scenarios for Individuals Aged 62 and Older in 2030

	ES1: Basic Earnings Sharing (no auxiliary benefits)	ES2: With Inheritance of Earnings for Survivors
Average current law benefit	\$14,877	\$14,877
Average benefit under policy	\$13,609	\$14,980
Average individual percent difference ^a	-8%	1%
Individuals with no benefit change relative to current law		
Percent of population	11%	12%
Average current law benefit	\$15,315	\$15,608
Individuals with benefit increases relative to current law		
Percent of population	28%	49%
Average current law benefit	\$14,401	\$14,584
Average benefit under policy	\$15,512	\$16,140
Average individual percent difference ^a	10%	13%
Individuals with benefit decreases relative to current law		
Percent of population	61%	39%
Average current law benefit	\$15,011	\$15,014
Average benefit under policy	\$12,439	\$13,315
Average individual percent difference ^a	-17%	-13%
Total Population (in 1000s)	53,849	53,849

SOURCE: Authors' calculations using Modeling Income in the Near Term (MINT).

NOTE: Includes only married, divorced or widowed individuals aged 62 or older who receive benefits under current law. Married individuals are only included if the spouse receives benefits under current law. No change in benefits is defined as benefits within 1 percent of current law. Benefits that change by 1 percent or more above or below current law are defined as either increases or decreases. For divorced and widowed individuals, benefits are annual individual benefits. For married individuals, benefits are the per capita benefit (half the combined annual couple benefit). Benefit amounts are expressed in 2005 dollars.

(a) The average individual percent difference is produced by calculating the percent differences for each individual and then taking a weighted average of the individual values. This differs from the percent average difference, which involves summing the weighted benefit amounts of all the individuals in each subgroup and finding the percent difference of the summed benefits of that subgroup under the proposal. See Iams, Reznik, and Tamborini (2009) for an analysis using the percent average difference. The results are qualitatively similar.

Table 2. Projected Social Security Benefit Impacts of Two Earnings Sharing Scenarios for Individuals Aged 62 and Older in 2030, by Sex and Marital Status

	ES1: Basic Earnings Sharing (no auxiliary benefits)				ES2: With Inheritance of Earnings for Survivors ^a	
	Married	Widowed	Divorced	Total	Widowed	Divorced
	<i>Men</i>					
Average benefit under policy	\$14,320	\$13,288	\$14,951	\$14,336	\$17,097	\$15,894
Average individual percent difference ^b	-2%	-19%	-8%	-5%	6%	-1%
Individuals with no benefit change relative to current law						
Percent of population	14%	2%	11%	12%	16%	16%
Average current law benefit	\$14,733	\$16,455	\$16,374	\$15,036	\$17,951	\$17,585
Individuals with benefit increases relative to current law						
Percent of population	36%	3%	12%	29%	68%	38%
Average benefit under policy	\$16,540	\$15,129	\$12,788	\$16,233	\$17,649	\$15,413
Average individual percent difference ^b	8%	6%	12%	8%	13%	11%
Individuals with benefit decreases relative to current law						
Percent of population	50%	96%	77%	59%	17%	47%
Average benefit under policy	\$12,590	\$13,178	\$15,088	\$13,283	\$13,978	\$15,716
Average individual percent difference ^b	-9%	-20%	-12%	-11%	-21%	-11%
Total Population (in 1000s)	14,298	1,968	3,702	19,967	1,968	3,702
	<i>Women</i>					
Average benefit under policy	\$14,303	\$11,702	\$13,412	\$13,181	\$15,588	\$14,866
Average individual percent difference ^b	-1%	-25%	-3%	-10%	1%	7%
Individuals with no benefit change relative to current law						
Percent of population	15%	3%	17%	11%	6%	11%
Average current law benefit	\$14,701	\$14,080	\$17,302	\$15,498	\$15,931	\$16,995
Individuals with benefit increases relative to current law						
Percent of population	40%	5%	38%	27%	53%	63%
Average benefit under policy	\$16,136	\$14,024	\$13,013	\$15,062	\$16,626	\$15,037
Average individual percent difference ^b	8%	9%	16%	11%	17%	18%
Individuals with benefit decreases relative to current law						
Percent of population	45%	93%	45%	62%	40%	26%
Average benefit under policy	\$12,541	\$11,525	\$12,326	\$11,964	\$14,161	\$13,552
Average individual percent difference ^b	-9%	-27%	-21%	-21%	-20%	-17%
Total Population (in 1000s)	14,530	12,136	7,217	33,882	12,136	7,217

SOURCE: Authors' calculations using Modeling Income in the Near Term (MINT).

Note: Includes only married, divorced or widowed individuals aged 62 or older who receive benefits under current law. Married individuals are only included if the spouse receives benefits under current law. No change in benefits is defined as benefits within 1 percent of current law. Benefits that change by 1 percent or more above or below current law are defined as either increases or decreases. For divorced and widowed individuals, benefits are annual individual benefits. For married individuals, benefits are the per capita benefit (half the combined annual couple benefit). Benefit amounts are expressed in 2005 dollars.

(a) The results for ES2 are not reported for married individuals because they generally do not qualify for a survivor benefit. Married individuals can receive a survivor benefit from a deceased spouse if the remarriage occurred past age 60.

(b) The average individual percent difference is produced by calculating the percent differences for each individual and then taking a weighted average of the individual values.

Table 3. Married Women: Projected Percentage of Women Aged 62 and Older in 2030 Experiencing Benefit Increases and Decreases under the Basic Earnings Sharing Scenario, by Demographic Characteristics

	ES1: Basic Earnings Sharing (no auxiliary benefits)					
	Total Population (in 1000s)	Individuals with benefit increases		Individuals with benefit decreases		
		Percent of Population	Average individual percent difference ^a	Percent of Population	Average individual percent difference ^a	
All Married Women	14,530	40%	8%	45%	-9%	
Current Law Benefit Type^b						
Retired Worker	9,673	43%	8%	39%	-6%	
Spouse & Worker (dually-entitled)	3,379	42%	8%	48%	-7%	
Spouse Only	1,026	20%	13%	73%	-27%	
Current Per Capita Income Quintiles (Current Law)						
Highest Quintile	2,650	52%	8%	33%	-8%	
2nd Highest Quintile	2,952	48%	8%	38%	-9%	
Middle Quintile	3,288	40%	7%	46%	-7%	
2nd Lowest Quintile	2,990	31%	9%	55%	-9%	
Lowest Quintile	2,650	30%	9%	53%	-13%	
Present Value Shared Lifetime Earnings Quintiles (Current Law)^c						
Highest Quintile	3,376	58%	7%	23%	-6%	
2nd Highest Quintile	3,201	49%	7%	37%	-6%	
Middle Quintile	2,778	29%	8%	58%	-7%	
2nd Lowest Quintile	2,489	25%	10%	64%	-7%	
Lowest Quintile	2,686	32%	12%	51%	-20%	
Education						
Graduate	1,609	49%	7%	32%	-8%	
Bachelor	2,823	50%	9%	35%	-9%	
Associate	2,580	43%	8%	43%	-7%	
High School	6,250	34%	7%	51%	-8%	
Less than 12 Yrs	1,266	30%	11%	59%	-21%	
Age						
62-69	5,346	40%	11%	45%	-10%	
70-79	6,370	41%	7%	44%	-9%	
80-89	2,462	40%	6%	47%	-7%	
90+	352	31%	8%	55%	-10%	
Race/Ethnicity						
White	11,300	41%	8%	44%	-8%	
Black	867	32%	8%	53%	-9%	
Hispanic	1,402	38%	9%	49%	-14%	
Other	961	43%	9%	41%	-19%	

SOURCE: Authors' calculations using Modeling Income in the Near Term (MINT).

Note: Includes married women where both the husband and wife receive benefits under current law. Benefits are the per capita benefit (half the combined annual couple benefit). Quintiles are defined for married (if the husband also receives benefits under current law), divorced, and widowed women (age 62 and older) in 2030 who have benefits under current law. Benefits that change by 1 percent or more above or below current law are defined as either increases or decreases. Benefit amounts are expressed in 2005 dollars.

(a) The average individual percent difference is produced by calculating the percent differences for each individual and then taking a weighted average of the individual values.

(b) The table does not report separately married women with "Survivor & Worker (dually-entitled)" or "Survivor Only" current law benefit types; however, these groups are not excluded from the other rows of the table. A married woman must remarry after age 60 to qualify for these benefit types.

(c) The present value is calculated using a discount rate equal to the effective rate for the Social Security trust funds.

Table 4. Widowed Women: Projected Percentage of Women Aged 62 and Older in 2030 Experiencing Benefit Increases and Decreases under Two Earnings Sharing Scenarios, by Demographic Characteristics

	Total Population (in 1000s)	ES1: Basic Earnings Sharing (no auxiliary benefits)				ES2: With Inheritance of Earnings for Survivors			
		Individuals with benefit increases		Individuals with benefit decreases		Individuals with benefit increases		Individuals with benefit decreases	
		Percent of Population	Average individual percent difference ^a	Percent of Population	Average individual percent difference ^a	Percent of Population	Average individual percent difference ^a	Percent of Population	Average individual percent difference ^a
All Widowed Women	12,136	5%	9%	93%	-27%	53%	17%	40%	-20%
Current Law Benefit Type^b									
Retired Worker	2,617	13%	10%	78%	-15%	86%	19%	3%	-40%
Survivor & Worker (dually-entitled)	8,333	2%	7%	97%	-27%	47%	16%	47%	-15%
Survivor Only	1,176	2%	*	98%	-51%	23%	19%	73%	-40%
Current Individual Income Quintiles (Current Law)									
Highest Quintile	2,834	5%	9%	92%	-25%	49%	15%	43%	-16%
2nd Highest Quintile	2,445	5%	13%	92%	-26%	52%	17%	41%	-16%
Middle Quintile	2,179	4%	6%	95%	-26%	55%	16%	40%	-17%
2nd Lowest Quintile	2,314	4%	8%	95%	-29%	54%	17%	40%	-21%
Lowest Quintile	2,363	5%	8%	93%	-31%	57%	19%	38%	-32%
Present Value Shared Lifetime Earnings Quintiles (Current Law)^c									
Highest Quintile	1,976	6%	4%	89%	-17%	49%	10%	41%	-10%
2nd Highest Quintile	2,305	4%	8%	94%	-23%	56%	14%	37%	-10%
Middle Quintile	2,497	3%	7%	96%	-26%	59%	17%	35%	-12%
2nd Lowest Quintile	2,584	4%	7%	95%	-28%	57%	19%	39%	-15%
Lowest Quintile	2,773	6%	17%	91%	-38%	46%	22%	49%	-41%
Education									
Graduate	1,313	5%	6%	91%	-22%	53%	14%	37%	-16%
Bachelor	1,728	5%	6%	93%	-24%	56%	15%	38%	-16%
Associate	1,855	4%	7%	93%	-25%	55%	16%	39%	-15%
High School	5,842	4%	12%	94%	-28%	54%	18%	40%	-18%
Less than 12 Yrs	1,398	4%	8%	93%	-38%	46%	21%	48%	-37%
Age									
62-69	1,933	6%	17%	90%	-25%	60%	20%	34%	-21%
70-79	4,207	5%	8%	93%	-27%	54%	17%	40%	-21%
80-89	3,941	4%	7%	94%	-28%	50%	16%	44%	-19%
90+	2,054	5%	6%	93%	-29%	52%	16%	40%	-19%
Race/Ethnicity									
White	9,491	4%	10%	94%	-27%	52%	16%	42%	-17%
Black	982	4%	7%	93%	-28%	57%	16%	36%	-29%
Hispanic	1,029	7%	7%	89%	-31%	56%	21%	37%	-30%
Other	633	7%	8%	91%	-29%	62%	20%	31%	-37%

SOURCE: Authors' calculations using Modeling Income in the Near Term (MINT).

Note: Includes widowed women who receive benefits under current law. Benefits are annual individual benefits. Quintiles are defined for married (if the husband also receives benefits under current law), divorced, and widowed women (age 62 and older) in 2030 who have benefits under current law. Benefits that change by 1 percent or more above or below current law are defined as either increases or decreases. Benefit amounts are expressed in 2005 dollars.

(a) The average individual percent difference is produced by calculating the percent differences for each individual and then taking a weighted average of the individual values.

(b) The table does not report separately the small group of widowed women with "Spouse & Worker (dually-entitled)" current law benefit type; however, this group is not excluded from the other rows of the table.

(c) The present value is calculated using a discount rate equal to the effective rate for the Social Security trust funds.

* Sample size is too small to report.

Table 5. Divorced Women: Projected Percentage of Women Aged 62 and Older in 2030 Experiencing Benefit Increases and Decreases under Two Earnings Sharing Scenarios, by Demographic Characteristics

	Total Population (in 1000s)	ES1: Basic Earnings Sharing (no auxiliary benefits)				ES2: With Inheritance of Earnings for Survivors			
		Individuals with benefit increases		Individuals with benefit decreases		Individuals with benefit increases		Individuals with benefit decreases	
	Percent of Population	Average individual percent difference ^a	Percent of Population	Average individual percent difference ^a	Percent of Population	Average individual percent difference ^a	Percent of Population	Average individual percent difference ^a	
All Divorced Women	7,217	38%	16%	45%	-21%	63%	18%	26%	-17%
Current Law Benefit Type									
Retired Worker	4,517	50%	13%	25%	-6%	75%	17%	10%	-7%
Spouse & Worker (dually-entitled)	410	89%	33%	10%	-15%	89%	35%	9%	-15%
Spouse Only	50	77%	*	23%	*	77%	*	23%	*
Survivor & Worker (dually-entitled)	2,117	5%	7%	93%	-28%	34%	14%	62%	-19%
Survivor Only	123	13%	*	87%	-46%	43%	31%	55%	-48%
Current Individual Income Quintiles (Current Law)									
Highest Quintile	1,293	32%	16%	45%	-19%	56%	16%	28%	-15%
2nd Highest Quintile	1,379	36%	15%	44%	-20%	64%	16%	24%	-17%
Middle Quintile	1,311	38%	16%	46%	-20%	64%	18%	28%	-16%
2nd Lowest Quintile	1,470	35%	15%	50%	-23%	60%	18%	28%	-18%
Lowest Quintile	1,764	49%	17%	42%	-23%	71%	23%	22%	-21%
Present Value Shared Lifetime Earnings Quintiles (Current Law)^b									
Highest Quintile	1,425	27%	11%	35%	-10%	59%	10%	18%	-10%
2nd Highest Quintile	1,271	40%	18%	43%	-16%	71%	17%	20%	-11%
Middle Quintile	1,502	39%	14%	50%	-20%	66%	17%	27%	-13%
2nd Lowest Quintile	1,703	42%	14%	49%	-24%	64%	20%	30%	-17%
Lowest Quintile	1,317	44%	22%	48%	-33%	58%	29%	34%	-30%
Education									
Graduate	830	39%	18%	40%	-16%	62%	19%	25%	-13%
Bachelor	1,114	38%	15%	39%	-18%	59%	15%	23%	-15%
Associate	1,396	36%	15%	48%	-19%	65%	17%	25%	-17%
High School	3,346	40%	15%	45%	-22%	66%	19%	26%	-17%
Less than 12 Yrs	531	34%	21%	57%	-31%	55%	26%	37%	-25%
Age									
62-69	2,064	46%	17%	39%	-18%	65%	19%	24%	-15%
70-79	2,988	39%	15%	43%	-20%	65%	17%	23%	-17%
80-89	1,689	32%	18%	52%	-25%	60%	20%	30%	-19%
90+	475	26%	10%	62%	-25%	56%	17%	34%	-20%
Race/Ethnicity									
White	5,548	40%	16%	45%	-21%	64%	19%	26%	-17%
Black	877	32%	13%	46%	-18%	60%	16%	24%	-16%
Hispanic	539	39%	16%	49%	-24%	63%	19%	27%	-24%
Other	253	37%	20%	44%	-23%	60%	21%	28%	-22%

SOURCE: Authors' calculations using Modeling Income in the Near Term (MINT).

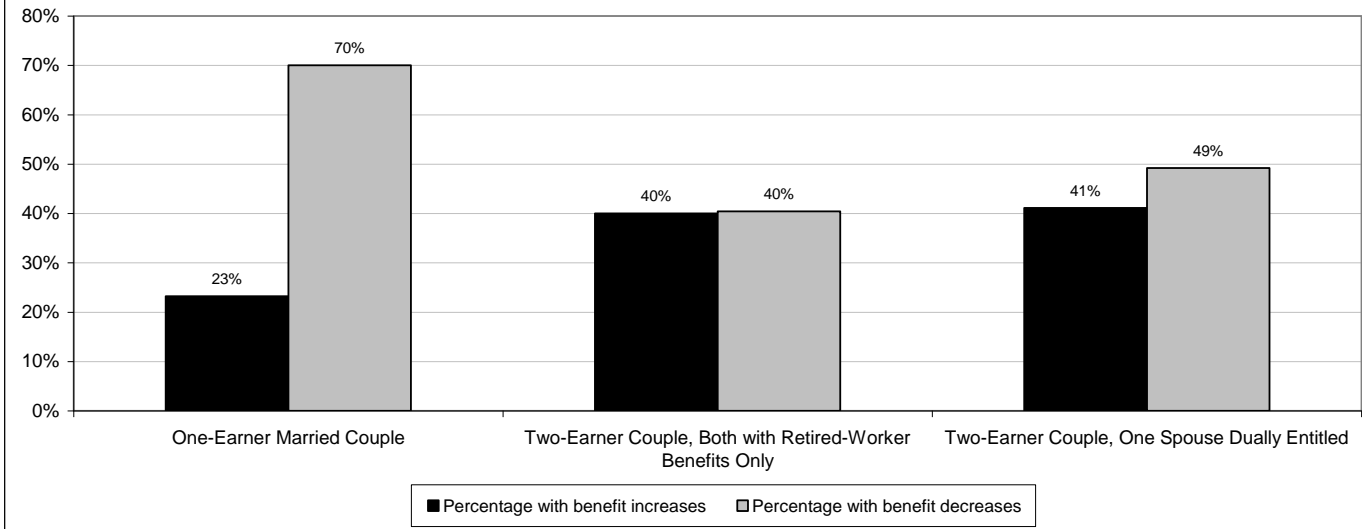
Note: Includes divorced women who receive benefits under current law. Benefits are annual individual benefits. Quintiles are defined for married (if the husband also receives benefits under current law), divorced, and widowed women (age 62 and older) in 2030 who have benefits under current law. Benefits that change by 1 percent or more above or below current law are defined as either increases or decreases. Benefit amounts are expressed in 2005 dollars.

(a) The average individual percent difference is produced by calculating the percent differences for each individual and then taking a weighted average of the individual values.

(b) The present value is calculated using a discount rate equal to the effective rate for the Social Security trust funds.

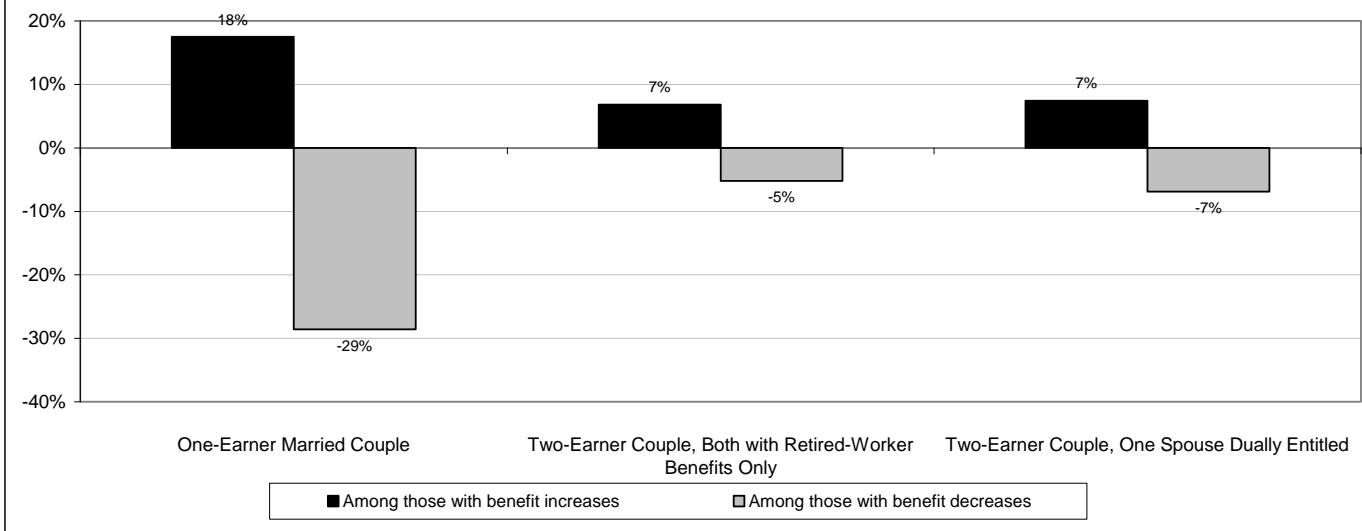
* Sample size is too small to report.

Figure 1. Projected Percentage of Married Women Aged 62 and Older Receiving Benefit Increases and Decreases under ES1, by Earner Status of Couple, 2030



SOURCE: Authors' calculations using Modeling Income in the Near Term (MINT).
 Note: Includes married women where both the husband and wife receive benefits under current law. Includes only married women in their first marriages. Benefits are the per capita benefit (half the combined annual couple benefit). Benefits that change by 1 percent or more above or below current law are defined as either increases or decreases. Benefit amounts are expressed in 2005 dollars.

Figure 2. Projected Average Individual Percent Difference in Total Couple Benefit among Women 62 and older under ES1, by Earner Status of Couple, 2030



SOURCE: Authors' calculations using Modeling Income in the Near Term (MINT).
 Note: Includes married women where both the husband and wife receive benefits under current law. Includes only married women in their first marriages. Benefits are the per capita benefit (half the combined annual couple benefit). Benefits that change by 1 percent or more above or below current law are defined as either increases or decreases. Benefit amounts are expressed in 2005 dollars.

Appendix A: One-earner and two-earner couples under the current Social Security system

Table A.1 demonstrates the distributional effects of Social Security’s current program features for three stylized retired couples, each with the same total average lifetime monthly earnings of \$1,000, but each with different intra-household earnings profiles.

Table A.1.
Social Security benefits for three stylized retirement-age married couples by intra-household earnings profile, 2009 (in dollars)

Stylized couples	Average Lifetime Monthly Earnings	Benefits under current system		
		Retired-worker benefit	Spouse benefit	Total benefit
Couple A				
Husband	1,000	752	0	752
Wife	0	0	376	376
Total	1,000	1,128
Couple B				
Husband	800	688	0	688
Wife	200	180	164	344
Total	1,000	1,032
Couple C				
Husband	500	450	0	450
Wife	500	450	0	450
Total	1,000	900

SOURCE: Authors' calculations using the 2009 primary insurance amount (PIA) benefit formula.
 ... = not applicable.

In *Couple A*, the wife did not work and the husband worked. In *Couple B*, both the wife and the husband worked, and the wife earned one quarter of her husband’s average monthly earnings. In *Couple C*, the wife and the husband both worked, and each earned the same average monthly earnings. While each of the three couples has the same total average monthly earnings of \$1000, under current law, one-earner *Couple A* receives a higher total couple Social Security benefit (\$1,128) than two-earner *Couple B* (\$1,032) and two-earner *Couple C* (\$900). This is due to the secondary worker, in this case a non-working wife, receiving an auxiliary spouse benefit equal to half the primary worker’s benefit of \$752.²⁶ In contrast, under a basic earnings sharing approach, all

²⁶ The benefits in Table A.1 are calculated using the 2009 Primary Insurance Amount (PIA) formula. The PIA is the benefit amount paid if benefits are claimed at the normal retirement age. The PIA is equal to the sum of 90 percent of the first \$744 of average lifetime monthly earnings, plus 32 percent of average lifetime monthly earnings over \$744 and through \$4,483, plus 15 percent of average lifetime monthly

couples would essentially be treated as if they were two-earner couples in which each spouse earns one-half of the total earnings during years of marriage. Thus, if *Couples A, B, and C* were married for the same number of years, had the same total earnings, were of the same age, all earnings were earned during marriage, and all earnings were shared, then the benefits received by two-earner *Couple C* would equal the benefits received by one-earner *Couple A* and two-earner *Couple B*.²⁷

The stylized example in Table A.1 highlights what some analysts refer to as “horizontal inequity” (Steuerle and Bakija 1994, 1997); couples who have the same total lifetime earnings, but different earnings profiles, have different annual combined couple benefits because of the way spouse and survivor auxiliary benefits are structured.

earnings over \$4,483 (the dollar amounts in the formula are indexed each year to the national average wage).

For *Couple A*, the husband’s benefit is equal to $(0.90 * \$744) + (0.32 * \$256) = \$752$. The wife’s benefit is equal to half the husband’s benefit $(0.50 * \$752 = \$376)$. For *Couple B*, the husband’s benefit is equal to $(0.90 * \$744) + (0.32 * \$56) = \$688$. The wife has her own earnings, so she is dually entitled and is entitled to her own benefit $(0.90 * \$200 = \$180)$ and an auxiliary spouse benefit. Since her own benefit is less than the amount she is entitled to as a spouse $(0.50 * \$688 = \$344)$, her total benefit is increased from \$180 to \$344. For *Couple C*, the husband’s benefit is equal to $(0.90 * \$500) = \450 . The wife’s benefit is also equal to $(0.90 * \$500) = \450 . See SSA (2009) for additional information on the PIA and Social Security benefits.

²⁷ In reality the outcomes would be less clear as the earnings and marital histories of individuals are more complex than the stylized example. There is not universal agreement that couples with the same lifetime earnings should receive the same benefits.

Appendix B: The MINT Model

Estimating the impact of earnings sharing on future Social Security beneficiaries requires a sophisticated and extensive data system based on microdata at the individual and household level. Initiated in the late 1990s by SSA's Office of Research, Evaluation, and Statistics with assistance from the RAND Corporation, the Brookings Institution, and the Urban Institute, MINT is a powerful microsimulation model that can be used to examine how hypothetical policy changes to Social Security could affect future retirees' benefits and overall economic status.

This paper uses the combined MINT 3.0/4.0 version, which is based on nationally-representative data from the 1990-1993 and 1996 Census Bureau's Survey of Income and Program Participation (SIPP) matched to SSA longitudinal earnings and benefit data through 2001.²⁸ For the 1990-1993 panels, survey data include individuals born from 1926 to 1965; for the 1996 panel, they include individuals born from 1926 to 1972. For the aged population in 2030, the focus of this paper, MINT uses observed survey and matched administrative data through the first third to the first half of respondents' lives and statistically projects their demographic and economic characteristics forward into the future, adjusting for expected demographic and socioeconomic changes, including changes in mortality.

To *age* the current working population into retirement, MINT follows a series of complex statistical techniques that involve careful modeling of income determinants, projected changes in workforce participation, such as women's increase in paid work, longevity, and a number of other factors, such as date of retirement, marital status changes, education patterns, the relationship between educational attainment and pre-retirement earnings, and life course interactions such as relative earnings between spouses across cohorts. MINT estimates of earnings and labor force participation over an individual's career are particularly important to the current study.

To project earnings forward, MINT starts with SIPP respondents' own earnings derived from matched data from SSA's Summary Earnings Record (SER) from 1951 to 2001. Earnings histories of future retirees are completed by following a forecasting method referred to as "earnings splicing," rather than a structural model of lifetime earnings. Using a nearest-neighbor approach, MINT essentially takes the observed annual earnings in 5-year blocks of older SIPP respondents called "donors" and assigns them to younger respondents with similar characteristics called "target" individuals who had not yet completed their careers by 2001, the last year of observed earnings.

Potential donors are randomly selected via a hot-deck procedure that statistically matches targets with donors based on key matching variables, which include: age, gender, minority group status, education level, disability status, average earnings over the five-

²⁸ Earlier versions of MINT such as MINT 3.0 do not include the 1996 panel. The MINT model was originally designed to examine the aged population in the years 2022-2030, a period when baby boomers will make up the majority of retirees. The extended version of MINT has information on more recent cohorts, and thus, allows analysis for the aged population beyond 2030.

year period, number of years with positive earnings in the 5-year period, earnings in the fifth and fourth year of the 5-year segment, and earnings history before the 5-year period. For example, to project the age 45-49 earnings of an individual aged 44 in 2001, the last year of observable earnings, SIPP first finds a donor based on matching characteristics who is at least 49 in 2001. When a match is made, the target individual, aged 44 in 2001, will receive the actual observed earnings sequence, disability status, and mortality of the donor for ages 45-49. MINT applies the same method, but with different donors, for 5-year segments for ages 50-54, 55-59, 60-64, and 65-69. The design preserves the observed heterogeneity in age-earnings profiles for earlier birth cohorts in projecting earnings for the later cohorts. MINT applies a statistical model of earnings after age 50. Separate matching variables and donor restrictions were developed for non-disabled and disabled workers.

MINT also tracks lifetime earnings between actual husband and wife, while imputing former and future marital partners. This is an important feature of the model that is necessary to estimate the effects of earnings sharing proposals. Individuals married at the time of the SIPP panels that remain married through the projected period are exactly matched to their spouse in the survey. Characteristics of former and future spouses are imputed and statistically assigned to a MINT observation with similar characteristics using the nearest-neighbor method similar to the procedure described above. However, because MINT cannot account for possible future cohort-level changes, such as the correlation of spouses' lifetime earnings, it may be difficult to fully depict possible shifts in the relationship between spouses' earnings in the projected data (Toder et al. 2002).

Demographic projections include marital history, household composition, educational attainment, disability status, and mortality. Marriage, divorce, and widowhood in MINT begin with survey responses in the 1990 and 1991 SIPP marital history topical modules. From these inputs, gender-specific time hazard models are developed to predict marriage, divorce, and remarriage events. Explanatory variables include age, education, race/ethnicity, years unmarried, whether widowed, and the calendar year after 1980 (for more details, see Panis and Lillard 1999).

Statistical models for mortality are calibrated to reflect increases in life expectancy for future generations. Mortality estimates draw from gender- and age-specific models based on SSA's Office of the Chief Actuary (OCACT) 2004 Trustees' assumptions through age 66 (Board of Trustees 2004). After this age, mortality projections essentially follow a hazard model outlined in Chapter 8 of Toder et al. (2002).

The retirement decision model in MINT uses a variety of statistical equations that account for the relationship between retirement and economic, demographic, and health characteristics. The model also incorporates the effects of incentives created by Social Security and employer-sponsored pension plans on labor supply. MINT separately models labor force retirement and Social Security benefit claiming. MINT calculates the future Social Security benefits of individuals and their spouses based primarily on projections of earnings histories, disability entitlement status of workers, marital histories,

and earnings histories of current and former spouses.²⁹ Benefits are calculated using a detailed Social Security benefit calculator calibrated to the current law Primary Insurance Amount (PIA) formula. This formula can be altered to allow the model to project Social Security benefits under different policy scenarios.³⁰

MINT also projects retirees' pension income, income received from annuitizing assets, Supplemental Security Income benefits, plus income from any non-spouse co-resident. Projections of pension coverage include income from a defined benefit plan (DB) and account balances of defined contribution (DC) plans. The starting point for account balances is SIPP survey data on pensions, which are adjusted to match levels in the Survey of Consumer Finances (SCF). Pension accruals rely on characteristics of individuals' pension plans in combination with expected job tenure and age. Wealth from retirement accounts (e.g. defined-contribution, IRA) is simulated at retirement date and based on initial account balances, estimates of new contributions, and investment earnings.³¹

MINT projections of retirement income also include housing equity and other wealth components (e.g., stock, mutual funds, other real estate, vehicles, etc.). The statistical techniques to derive financial wealth and home equity in retirement are complicated and essentially use a series of random-effects models based on the Panel Survey of Income Dynamics (PSID), Health and Retirement Study (HRS), and the SIPP.

All of the measures and projections in MINT, to varying extents, have been validated and have undergone thorough sensitivity analyses and benchmarking primarily by researchers at the Urban Institute. A series of validation and sensitivity tests for MINT projections are documented in Toder et al. (2002). Smith, Cashin, and Favreault (2005) detail the changes incorporated in the MINT version 4.0 relative to the 3.0 version.

²⁹ Earnings data come from the Summary Earnings Records (SER) and benefit data from the Master Beneficiary Record (MBR). Data from the MBR provide information on when individuals begin to claim Social Security benefits and whether the individual was entitled to disability benefits.

³⁰ Social Security beneficiaries may choose to work after they start receiving benefits. MINT estimates of beneficiaries' work decisions rely on two equations, one for beneficiaries below age 70 and equations for beneficiaries age 70 and above. Baseline explanatory variables for earnings and labor force participation include demographics (age of individual and spouse, gender, race/ethnicity, marital status, educational attainment, and health status); Social Security eligibility status; labor force attachment and prior earnings.

³¹ Contributions to pensions are based on SIPP data in combination with plan data from the Employee Benefit Research Institute (EBRI) and the Investment Company Institute (ICI). Investment earnings are essentially based on historical returns.

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