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**THE IMPACT OF SOCIAL SECURITY
REFORM ON LOW-INCOME
AND OLDER WOMEN**

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Foreword

Despite women's increased labor force attachment, rising earnings, and expanded pension coverage, Social Security is the mainstay of retirement income for older women, 90 percent of whom receive benefits from the program. Widowed, divorced, and never-married women are especially dependent on Social Security, which accounts for at least half of the income of nearly three-fourths of nonmarried women aged 65 and older. It is the only source of income for about one-fourth of them.

Though the program is gender neutral, many of Social Security's provisions are particularly beneficial to women. Women are, for example, disproportionately represented among low-wage workers. Social Security's benefit calculation formula replaces a higher proportion of the earnings of low-wage workers than of higher-wage workers. Women's longer life expectancy is not taken into consideration when benefits are calculated, so men and women with identical work histories and earnings receive identical benefits. In addition, women's lower life-time earnings and discontinuous work histories mean that their spouse and/or survivor benefits are often higher than their own retired worker benefits. They receive the larger of the two benefits. A divorced women who had been married for at least 10 years also qualifies for benefits based on the earnings record of her former husband.

Over the years, the Social Security Act has been amended numerous times in ways that further enhance the financial well-being of women, in particular. The duration of marriage requirement, for example, has been shortened from 20 to 10 years. A divorced spouse who has reached retirement age can begin drawing Social Security benefits on the earnings record of a former spouse, even if the former spouse has not retired. Women who remarry after the age of 60 now have the right to collect Social Security based on their current or former husband's record, whichever produces higher benefits. Yet, despite all the ways in which women benefit from Social Security, millions of older women have incomes near or below the poverty level.

In the research reported on in this study, Melissa Favreault and Frank Sammartino of the Urban Institute examine the impact on low-income and older women of a number of additional reforms to Social Security, several of which, in one version or another, have been proposed in recent years. Increasing survivor benefits, for example, has long had its proponents, under the assumption that doing this could reduce substantially the number of women who fall into poverty upon widowhood. Using DYNASIM3, a dynamic microsimulation model, Favreault and Sammartino compare distributions of Social Security benefits under current law and under eight reform options that would increase benefits and under three options that would "pay" for some benefit improvements by combining benefit increases with benefit cuts. The analyses reveal widely varying and sometimes unanticipated impacts of the various reforms and should serve as a warning that, as the investigators observe, "using intuition alone to guide reform efforts can be dangerous."

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Executive Summary

Introduction

Social Security is vitally important to American women, keeping millions out of poverty in old age each year. Yet many analysts have raised concerns that it does not do enough for some needy older women, for example, low-income unmarried women. Others express concern that the program provides smaller benefits to some women who have contributed to the system than to other women who have never worked (for example, married women who do not work outside the home and who have high-earning husbands can receive more generous benefits than some low-earning workers). They argue that the system should be reformed to increase women's economic security in retirement, while treating women with different family arrangements more equitably. However, the Social Security system's enormous long-term fiscal deficit complicates the prospects for reforming the program to better meet the needs of contemporary women.

Purpose

This report first describes how women's Social Security benefits are likely to change over the next four decades. It then considers how proposed reforms to the Social Security system might affect American women's economic well-being. Proposals advanced by current movements to reform women's Social Security benefits fall into two major groups: The first includes *structural reforms* that would fundamentally change the system, for example, by introducing individual accounts (either added on to the current system or carved out of it). The second group deals with *programmatic reforms* that would alter parameters of the existing system without changing its basic features. This report concentrates on the latter type. We examine 11 incremental proposals that would modify the relationship between benefits and family status or age. These reforms include eight proposals that would increase benefits and three packages that would combine benefit increases for some with reductions for others, as follows:

Proposals That Increase Benefits

- Change the current level of survivor benefits by:
 1. increasing the survivor benefit to 75 percent of a couple's benefit;
 2. increasing the survivor benefit to 67 percent of a couple's benefit.
- Expand minimum benefits by:
 3. providing a benefit equal to 60 percent of the wage-indexed poverty threshold for workers with at least 20 years of qualified earnings, and increasing the benefit by 2 percentage points for each additional year of qualified earnings to reach a maximum of 100 percent of the wage-indexed poverty threshold for workers with 40 or more years of earnings.

- Expand eligibility and benefit levels for divorced spouses and survivors by:
 4. raising the divorced spouse benefit from 50 to 100 percent of the worker's Primary Insurance Amount (PIA);
 5. raising the divorced spouse benefit from 50 to 75 percent of the worker's PIA;
 6. reducing the required marriage duration for divorced spouse and survivor benefits to 5 years;
 7. reducing the required marriage duration for divorced spouse and survivor benefits to 7 years.
- Recognize childcare by implementing credits, specifically by:
 8. crediting parents with half of the average wage for up to five total years in which they have a child under age six in their care.

Packages That Combine Benefit Increases with Cuts

- Change the current mix of spousal and survivor benefits by:
 1. combining an increase in the survivor benefit to 75 percent of a couple's benefit with a reduction in the spouse benefit to 33 percent of a worker's PIA and reductions of 5 percent each in the upper two bend percentages; and
 2. combining an increase in the survivor benefit to 67 percent of a couple's benefit with a reduction in the spouse benefit to 33 percent of a worker's PIA and reductions of 1 percent each in the upper two bend percentages.
- Change the indexation of benefits in retirement, namely by:
 3. cutting initial benefits by 12 percent but wage indexing subsequent benefits.

Methodology

We use a dynamic microsimulation model, DYNASIM3, to compare distributions of Social Security benefits under current law and under the alternative reforms. The model ages a representative population of more than 100,000 persons from the 1990-1993 Survey of Income and Program Participation (SIPP) in yearly increments, replicating family and individual economic and demographic processes such as birth, death, marriage, divorce, work, and earnings. Through this aging process, the model produces a file of life histories that analysts can use to compute Social Security benefits under current law and under various alternatives. We focus on results for women who are ages 62 and older in 2040, and pay special attention to differences in benefits, total income, and poverty status by age, lifetime earnings, and marital status.

Principal Findings

We find that the composition of women's current-law Social Security benefits will change markedly in coming decades. Fewer women will be entitled to benefits solely as spouses or survivors, and more will receive worker-only benefits, dually entitled spouse benefits, and especially dually entitled survivor benefits. This trend should reduce, though not eliminate, some concerns about the equity of Social Security benefits.

The distributional implications of the benefit increase proposals that we examine differ in significant ways. Increases in survivor benefits effectively target older and widowed women, but grant the largest increases to women in the highest lifetime family earnings quintiles. (Caps on the survivor benefits could address this concern.) Increased eligibility and benefit levels for divorced spouse benefits target more of their gains to women in the bottom family earnings quintiles, but, of course, do not reach those women who never marry, and only reach a small fraction of married or widowed women. Higher minimum benefits have a more global reach, not excluding any potential recipients on the basis of marital status, and target those with the lowest lifetime earnings quite effectively. Childcare credits have fairly modest effects but are likewise well targeted toward women at the bottom of the lifetime earnings distribution.

The three packages that combine benefit increases and cuts likewise have different effects. Although all three successfully redistribute women's benefits from earlier to later in life, the wage indexing proposal does so more progressively than the spouse/survivor options. The simulations of packages do suggest that reforms to improve adequacy and equity of the Social Security system for women could be designed to be low-cost or revenue-neutral, an important consideration given that the current system is underfunded.

Conclusions

Models can reveal important distributional differences in proposals aimed at improving the Social Security system's treatment of women. Policymakers should be careful not to rely on intuition when designing reforms to shore up women's Social Security benefits, but rather to rely on rigorous analyses. Using DYNASIM3, we have demonstrated that policymakers can change parameters in the existing system to target the highest-risk low-income and older women. Our analyses also show how legislators can combine a series of changes into packages that meet multiple needs.

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Introduction

This report considers how reforms to the Social Security system might affect the economic well-being of American women. We use a dynamic microsimulation model, the Dynamic Simulation of Income Model Version Three (DYNASIM3), to compare distributions of Social Security benefits under current law and a variety of alternative reforms. Particular attention is paid to incremental proposals that would alter the relationship between benefits and family status—for example, by changing the current mix of spousal and survivor benefits, implementing childcare credits, expanding eligibility and benefit levels for divorced spouses, or expanding minimum benefits. We also examine proposals that modify the relationship between benefits and age—for example, by changing indexation of benefits in retirement. When using DYNASIM to analyze proposals, we focus on how gains and losses from the reform are distributed among women Social Security beneficiaries, and specifically examine differences by age, lifetime income, marital status, and race. Our analyses devote particular attention to the program’s treatment of the most economically vulnerable of women: those with low lifetime incomes, and those later in life (the “oldest old”). We discuss the mechanisms that generate differences in Social Security benefits among women at present and project how benefits may change in the future.

Advocates with two competing views on Social Security have shaped the proposals that we study. In recent years, one group has assailed Social Security as unfair and detrimental to women, while another has defended the program as essential to women’s economic well-being. Those who seek greater change to the program tend to focus on retirement benefit “rates of return” and marginal returns to payroll tax contributions. For example, in her party’s response to the 1999 State of the Union address, Representative Jennifer Dunn of Washington claimed that the program is “especially not fair to young people and women” and that it “works against wives.” Dunn, presumably, was referring to the low, and often zero, return to their Federal Insurance Contribution Act (FICA) and Self Employment Contributions Act (SECA) contributions that some married women workers receive from Social Security (see, for example, Feldstein and Samwick, 1992). In its recently released interim and final reports, the President’s Commission to Strengthen Social Security (2001a; 2001b) expressed similar concerns. Because a married woman is eligible for a spousal benefit equal to roughly half of her spouse’s benefit regardless of whether she worked,¹ she may receive a higher benefit based on her husband’s earnings record than her own. Indeed, a woman who worked may receive a lower Social Security benefit than a woman who never worked or contributed to Social Security. Further, a single-earner couple with a given level of total earnings will usually receive higher total benefits than a dual-earner couple with the same level of total earnings (U. S. Department of Health, Education, and Welfare, 1979).

¹ In technical terms, a married woman is entitled to a benefit equal to half of her spouse’s Primary Insurance Amount (PIA), which is the base amount for computing the Social Security benefit that an individual can receive at the Social Security normal retirement age (between ages 65 and 67, depending on one’s birth cohort). As both the worker and spouse benefits are reduced (the spouse’s benefit at slightly higher rates) if a beneficiary retires before the normal retirement age, the spouse benefit for which a beneficiary is eligible may not equal exactly half of the spouse’s worker benefit.

Those who are more sympathetic to the Social Security program's current structure, in contrast, focus on its redistributive features and their substantial poverty alleviation effects, especially among women. "It can be argued that women have become the major beneficiaries of Social Security" contend Smeeding, Estes, and Glasse, (1999). Social Security undeniably helps a tremendous number of women. More women than men receive benefits from the program (24.2 million women in December 2000, compared to 18.1 million men that same month). Further, the program's progressive benefit formula favors lower-income workers, who are disproportionately women, and its practice of paying annuitized benefits favors those who live longer, again, disproportionately women. Nonetheless, women remain at particular risk of poverty in retirement, and estimates from projection models suggest that this elevated risk will continue into the future, despite increases in women's labor force participation and wages over recent decades (Toder et al., 1999, 2002).

That analysts could reach such different conclusions about Social Security's treatment of women reveals that one's view of the program can depend on the particular group of women that is examined—for example, married women in dual-earner families, married women in single-earner families, or never-married women—and on the relative weights that are placed on adequacy and equity issues.² To evaluate and perhaps even reconcile these competing claims—that the program is unfair to women on one hand yet benefits women more than men on the other—one needs to look at the Old Age, Survivors, and Disability Insurance (OASDI) program and reforms to it both cross-sectionally and longitudinally, and from both individual and family perspectives.

Literature Review

Students of Social Security have expressed concern about the program's treatment of women for decades. An extensive literature explores issues related to the adequacy and equity of women's OASDI benefits. We classify these studies into several areas: (1) estimates and explanations of the relatively high post-Social Security poverty risk of some women; (2) estimates and explanations of differences in Social Security's treatment of women; and (3) proposals to improve the economic status of women through Social Security reform and estimates of these proposals' distributional effects.

Poverty Risk

Poverty risk estimates consistently suggest that women are much worse off in retirement than men. For more than a quarter century, the Office of Research, Evaluation, and Statistics of the Social Security Administration has regularly used Current Population Survey data to produce a detailed study of the income of the population ages 55 and older. Estimates from the most recent volume (Social Security Administration, Office of Research, Evaluation, and Statistics, 2002b) illustrate important patterns in well-being in retirement. About 12.2 percent of women

² By *adequacy issues*, we refer to the extent to which Social Security benefits keep workers and their dependents out of need (for example, as measured by the poverty threshold). By *equity issues*, we have in mind the extent to which individuals and couples with the same lifetime earnings receive the same level of benefits. For additional discussion of equity and adequacy issues, see, for example, Favreault, Sammartino, and Steuerle (2002, forthcoming).

aged 65 and older were estimated to be in poverty in 2000, compared to just 7.5 percent of men the same age (Social Security Administration, Office of Research, Evaluation, and Statistics, 2002b: Table 8.1, p. 139).

The estimates further reveal that women in different groups face very different risks. Married women are much better off than single people, and especially single women. The fraction of unmarried women ages 65 and older in poverty is about four times higher than the fraction of married women in poverty (17.8 percent compared to 4.4 percent) (Social Security Administration, Office of Research, Evaluation, and Statistics, 2002b: Table 8.1, pp.139-140). Among unmarried women, widows (15.8 percent of whom are in poverty after age 65) are slightly better off than those who are divorced (20.3 percent of whom are in poverty) or, especially, those who never married (23.1 percent of whom are poor) (Social Security Administration, Office of Research, Evaluation, and Statistics, 2002b: Table 8.1, pp.139-140). These differences are likely due in large part to Social Security spousal and survivor benefits, which offer protection to nearly all widows and to many divorced women, but not to never-married women.

The Social Security Administration estimates also reveal that the risk of poverty often increases with age, even within marital status groups.³ For example, married couples' poverty rates increase from 4.2 percent at ages 65 to 69 to 5 percent at ages 85 and older. Unmarried women's poverty rates do not increase with age, but rather remain high throughout retirement: 17.9 percent at ages 65 to 74 and 16.8 percent at ages 85 and older (Social Security Administration, Office of Research, Evaluation, and Statistics, 2002b: Table 8.2, pp. 143-144).

For those with lower incomes, Social Security often provides a substantial fraction of total retirement income. Indeed, about one-sixth (18 percent) of family units with a head age 65 and over report that they have *no* income from sources other than Social Security. In the bottom income quintile, nearly half of the family units (49 percent) report that Social Security is their *only* source of income. (See Social Security Administration, Office of Research, Evaluation, and Statistics, 2002b: Table 6.A2, p. 107.) More women than men fall into this high-risk category (Social Security Administration, Office of Research, Evaluation, and Statistics, 2002b: Table 6.B2, p. 114).

Reasons Women's Social Security Outcomes Differ from Men's

A series of court challenges and legislative changes between 1950 and 1983 transformed Social Security from a system that contained explicit sex discrimination to a sex-neutral system. Although Social Security regulations no longer explicitly offer different protection to men and women, their impacts nonetheless still vary considerably by sex. As Social Security regulations continue to offer explicitly different protection to married and unmarried persons and depend on lifetime family income, their impacts differ greatly by marital status and economic position as well.

The reasons that women have different Social Security and poverty outcomes from men are numerous, and the literature has discussed them widely (see, for example, U.S. General

³ Note that a significant fraction of older women will change from married to widowed as they age.

Accounting Office, 1997, and Williamson and Rix, 1999). Among the most prominent features of OASDI that tend to favor women (several of which we have already noted) are the progressive benefit formula, the provision of spouse and survivor benefits, the mandatory annuitization that is inherent in the system, and the indexing of benefits. Women are far more likely than men to qualify for spouse and survivor benefits, by a ratio of almost 40 to 1 in recent years (Urban Institute tabulation from Social Security Administration, Office of Research, Evaluation, and Statistics, 2002a: Table 5.A1).⁴ Put another way, almost 98 percent of spouse/survivor beneficiaries are women. Further, their longer life expectancy means that women will, on average, collect Social Security benefits for more years than men. Taking all of these factors into account, studies consistently show that, on a lifetime basis, women receive larger transfers (lifetime benefits less lifetime contributions) from Social Security than do men (see, for example, Burkhauser and Warlick, 1981, Moffitt, 1984, Steuerle and Bakija, 1994).⁵

However, longer life expectancies also mean that women need to spread their retirement savings over longer periods and that they can expect to spend greater fractions of their retirement years alone rather than as part of a couple (and thus are at much higher risk of low income and even poverty). Because, on average, women marry men who are older than themselves, they experience even longer spells of widowhood than the relative differences in male and female life expectancy would already imply.

Women's lower annual and lifetime wages and their more intermittent work histories interact with Social Security in ways that are quite problematic, especially for women who have not had any marriages that would qualify them for spouse and survivor benefits. Although the gap has narrowed greatly in recent years, women are still less likely than men to be insured for Social Security benefits, especially disability benefits that require that one meet a recency of work test in addition to the quantity of work test (for discussion, see Mitchell and Phillips, 2001). Women also receive lower benefits when they are insured. Although from a longitudinal perspective the program may appear to treat women more favorably than men, when we examine Social Security benefits at just a point in time, men's benefits are much higher than women's. Among retired workers in current payment status, for example, women's Social Security benefits are, on average, slightly more than three-quarters of men's benefits: \$730 a month for women, compared to \$952 for men in December, 2000 (Social Security Administration, Office of Research, Evaluation, and Statistics, 2002a: Table 5.A1).

Transitions to widowhood and divorce also affect women's Social Security benefits and retirement well-being more generally. The income declines that accompany widowhood and divorce often exceed the declines in living expenses that coincide with the spouse's death or departure.⁶ Divorced women only qualify for Social Security benefits based on their ex-husbands' records if their marriages lasted at least 10 years. Survivors face fewer restrictions on

⁴ This ratio will surely decline in the future as the gap between husbands' and wives' earnings declines.

⁵ When one considers family rather than individual contributions to the program (for example, by considering that each spouse in a marriage is credited with half of the couple's total Social Security contributions), the transfers to women are much smaller but still significant (see, for example, Favreault and Caldwell, 2000).

⁶ For example, for many women, fixed costs like housing expenses are a large part of a family budget, and these often do not decrease with the spouse's death. Specific concerns with Social Security income losses at widowhood and divorce are compounded by the fact that women have lower levels of pension coverage than men.

Social Security receipt than do divorced spouses, but they may experience particularly steep declines in income upon widowhood. This is especially likely if they had earnings that were close to their spouse's (so that their survivor benefit does not represent a significant increase over their worker benefit).

Reform Proposals

Researchers and Members of Congress have proposed many ways to increase the adequacy of Social Security benefits, especially for older women, and to boost the low returns that dual-earner couples receive relative to single-earner couples (Table 1). We classify these proposals into two main groups: *structural* reforms that would fundamentally change the existing relationship between earnings, marital status, and benefit entitlement, and *programmatic* reforms, incremental changes that would make relatively minor adjustments to existing Social Security benefit parameters. This report concentrates on the programmatic reforms. Recent review articles that compare Social Security reform proposals aimed at women include Devine (2000), Smeeding, Estes, and Glasse (1999), U.S. General Accounting Office (1997), and Williamson and Rix (1999).⁷

Distributional studies of these proposals have relied on a variety of modeling techniques, including representative worker simulations, dynamic microsimulation, and analytic models. Toder et al. (2000) describe some of the strengths and limitations of each of these model types.

Structural Reforms

In the mid-1980s, earnings sharing proposals played an especially prominent role in discussions of Social Security reform. Rapid increases in women's labor force participation and divorce had led many analysts to question the emphasis on single-earner, married-couple families that was implicit in Social Security law. Earnings sharing had a lot of early appeal. At its core was the popular principle that marriage is an economic partnership in which men and women ought to share completely. An important study by the U.S. Department of Health, Education, and Welfare (HEW) highlighted earnings sharing as one of two possible solutions to equity and adequacy problems in Social Security (1979). In the wake of this HEW report, several research teams undertook large-scale studies to evaluate the distributional consequences of a wide variety of proposals of this type (for example, Congressional Budget Office, 1986, U.S. Department of Health and Human Services, 1985, Zedlewski, 1984). This wealth of research revealed many of the strengths and, particularly, shortcomings of earnings sharing. Ross and Upp (1993) concluded that the main reasons why these earnings sharing proposals eventually failed were inherent conflicts in the competing objectives, costs, lengthy transition periods, and unintended consequences. With a few noteworthy exceptions (see, for example, Feldstein, 1998, Steuerle, 1997), relatively few analysts have discussed earnings sharing in much depth since this extended period of study.

Although only a small number of conservative academics and policy analysts advocated full or partial privatization of the Social Security system in the 1980s, partial privatization

⁷ Works offering more general reviews of Social Security reform options include Moon and Mulvey (1995) and Steuerle and Bakija (1994).

proposals gained great momentum and relatively widespread acceptance in the boom stock markets of the late 1990s.⁸ Scholars and Members of Congress alike began advocating instituting individual accounts into Social Security at that time. One factor that surely contributed to the increasing legitimacy of this once taboo idea was that two of the three groups that emerged from the 1994-1996 Advisory Council on Social Security advocated partial privatization plans. One Advisory Council plan incorporated a small “add-on” account to the system, and the other was a more significant “carve-out.”

After the Advisory Council released its report, dozens of legislators from both sides of the aisle quickly followed suit and proposed their own individual account plans. The plans that these legislators designed would institute the new accounts in highly variable ways. Some legislators proposed to make the accounts mandatory, while others would make them optional. For example, the bipartisan National Commission on Retirement Policy (1998) created a mandatory account and allowed additional voluntary contributions, while Senators Moynihan and Kerrey (1998) molded a plan that included voluntary accounts. Senator Roth (1999) and Representatives DeMint (2001), Kasich (2000), Petri (2001), Sanford (1999), Shaw (2001), and Smith (1999) offered additional variants. A number of economists like Kotlikoff and Sachs, who advanced a plan that combines individual accounts with earnings sharing (Kotlikoff, 1997), also entered the arena on behalf of privatization. Several research and advocacy organizations began well-publicized programs on privatization (see, for example, Cato Institute, 2002).

These varied proposals spurred a plethora of research on the likely consequences of individual account plans for women. Many of these studies were highly limited because the earnings of the women examined in the studies were so stylized—for example they would receive the economy-wide average wage for their entire careers (see, e.g., Shirley and Spiegler, 1998). Other studies contained somewhat more realistic earnings data, such as allowing women to have career interruptions (Hill, Shaw, and Hartmann, 2000) or constructing earnings profiles based on empirically observed profiles (Burtless, Bosworth, and Steuerle, 1999), but most still failed to capture the heterogeneity of women’s experiences. Two studies are noteworthy exceptions. Feldstein and Liebman (2000) used real earnings data on a full distribution of Americans, but limited their sample to those born between 1925 and 1929. Penner and Cove (2002) considered a much broader range of cohorts, examining full distributions of outcomes as far into the future as 2040. Personal account issues revealed in these and other studies (e.g., U.S. General Accounting Office, 1997) that are likely to have particularly significant consequences for women’s well-being include annuitization requirements and rates (whether sex-specific or unisex), the level and structure of transaction costs, portfolio allocation choices of families, and, of course, the returns to the accounts that result from these portfolio choices.

Programmatic Reforms

Other recent proposals to expand the adequacy and equity of women’s Social Security benefits have been more incremental than earnings sharing or instituting individual accounts. In

⁸ *Privatization, prefunding, and diversification* are separate components of reform that may or may not coincide. The terms are frequently confused in debates about Social Security. For details, see Geanakoplos, Mitchell, and Zeldes (1998). In this paper, we use the term privatization to refer to plans to replace all or part of the current system with privately held individual accounts (that may or may not have government mandates attached to them).

particular, there has been considerable attention paid to less radical approaches that would shore up benefits (especially in widowhood), or in some way compensate individuals (overwhelmingly women), who engage in unpaid caring work. The National Council of Women's Organizations has played an active role in renewing attention to some of these proposals (Hartmann and Hill, 1999).

For example, many advocates have proposed granting additional dropout years or some form of earnings credit for childcare (or caregiving more broadly) to address the gaps in women's labor force trajectories that leave them with relatively low Social Security benefits. Research on the detrimental effects of caregiving on women's Social Security benefits (e.g., Kingson and O'Grady-LeShane, 1993) spurred some of these efforts. Iams and Sandell (1994) conducted important distributional analyses of such proposals, and identified potentially regressive effects, especially for proposals to increase dropout years.

To cushion the transition to widowhood, several analysts have proposed increasing survivor benefits. Some plans to increase survivor benefits also cut spouse benefits to raise at least some of the funds that would be diverted toward survivors. Among the first to propose the latter type of Social Security reform were Hurd and Wise (1991) and Burkhauser and Smeeding (1994). Such a reform was included in one of the plans from the Advisory Council on Social Security (1997). Sandell and Iams (1997), Iams and Sandell (1998), and FitzPatrick and Entmacher (2000) have all analyzed such plans. They tend to find that the plans do alleviate poverty and reduce inequities between single- and dual-earner couples, but that they are not always well-targeted (e.g., some higher income women benefit disproportionately from the increases). These targeting issues could be addressed in part by capping the noncontributory benefits.

Like earnings sharing, double-decker plans (which would add a demogrant to Social Security) and two-tier plans (which would shore up the means-tested Supplemental Security Income [SSI] program) also were discussed widely in the 1980s. Proponents of double-decker plans contend that Social Security should have a base benefit that will meet adequacy needs and then an additional earnings-related component (Warlick, Berry, and Garfinkel, 1982). If such benefits were incorporated into the social insurance program, supporters argue, then they might not suffer from the low levels of take-up that plague social assistance benefits like SSI. Those who favor two-tier plans argue that a redistributive function is more appropriate for a social assistance program, as too much redistribution could undermine support for the social insurance system (Munnell and Stiglin, 1982). Specific aspects of SSI that analysts have targeted include the program's asset thresholds and income disregards. McGarry (2000) and Kijakazi (2001) present distributional estimates of the effects of these SSI proposals.

Minimum benefit plans are the close relatives of these double-decker and two-tier plans of the 1980s. Social Security currently has a very small special minimum PIA provision.⁹

⁹ Social Security provides for a minimum benefit for some rare cases of low-wage workers who have worked at least 10 years in covered employment. The number of years of creditable earnings are equal to years in which earnings exceed 15 percent of the adjusted maximum taxable earnings in that year. In 2001, workers needed to earn at least \$8,955 to meet this requirement. In 2000, the minimum benefit was equal to \$30 per month for each year in excess of 10, up to a maximum of \$601 per month for workers who had worked 30 or more years. Very few workers

Recent reform proposals that have included enhanced minimum benefits include the National Commission on Retirement Policy (NCRP) plan (1998) and legislation supported by Representatives Kolbe and Stenholm (2002).

Data Sources

To compare and contrast benefits under current law and 11 separate programmatic Social Security reform options, we use data from two main sources: published estimates from the Social Security Administration (Social Security Administration, Office of Research, Evaluation, and Statistics, 2002a), and projections from the latest version of the Urban Institute's Dynamic Simulation of Income model (DYNASIM3). This model starts with a sample of slightly more than 100,000 individuals from the 1990-1993 Survey of Income and Program Participation (SIPP), a large, nationally representative survey that oversamples low-income households. The model then uses parameters estimated from longitudinal data to age this sample one year at a time, simulating individual and family demographic, labor force, and Social Security outcomes as far as 2040. Additional information about DYNASIM is available in the appendix and in Toder et al. (2000).

Most of the results that we report are from the year 2040. Although this is past the peak retirement years for baby boomers (who will reach age 62 between 2008 and 2026), examining effects in 2040 gives us a better sense of the distributional impacts of Social Security proposals because it allows us to see the effects when they have been fully phased in for beneficiaries. We concentrate on Social Security beneficiaries who are ages 62 and over, as most reform proposals target this group.¹⁰

Findings

Distributions of Social Security Benefits by Type

At the present time, nearly two-thirds of women Social Security beneficiaries ages 62 and older are receiving benefits at least partially on the basis of their own earnings (Social Security Administration, Office of Research, Evaluation, and Statistics 2002a: Table 5.A14, p.192). Most of these women are receiving worker-only benefits (38 percent), while additional fractions are receiving dually entitled wife (12 percent) and dually entitled widow (15.6 percent) benefits (Figure 1). Dual entitlement occurs when a worker is eligible for a retired worker benefit based on his or her own earnings record, but would receive a higher benefit as the spouse or survivor of another retired worker. Such persons receive their retired worker benefit, and then the difference between the amount they are eligible to receive as a spouse and their own worker benefit. We refer to this difference as the dual entitlement benefit "top up."

receive the special minimum benefit. In 2000, only 127,000 retired workers out of a total of 28.5 million received benefits based on the special minimum primary insurance amount. Their average PIA was \$519.

¹⁰ One noteworthy exception in Table 1 is the proposal to expand disabled widows' eligibility for Social Security.

There is fairly dramatic patterning in women's Social Security benefit types by age (also Figure 1). An older woman is more likely to receive benefits as a survivor or dually entitled survivor, and less likely to receive benefits as a spouse or a worker. In 2000, for example, 45 percent of the women ages 65 to 69 were receiving worker benefits, while 7 percent were receiving dually entitled survivor benefits and 15 percent were receiving widow-only benefits (Social Security Administration, Office of Research, Evaluation, and Statistics, 2002a: Table 5.A15, p. 192). At ages 80 and above, just 31 percent of the women were receiving worker benefits, while 27 percent were dually entitled widows, and 30 percent were widow-only beneficiaries.¹¹

We expect that the distribution of older women's Social Security benefits by type will change markedly over the next few decades. DYNASIM projects that the proportion of women ages 62 and older receiving benefits at least partially on their own records will increase to well over 90 percent by 2040 (Figure 2). This projection is consistent with Social Security Administration data on the insured status of working-age women in 2001, which revealed that between 88 and 91 percent of women in their thirties and forties were fully insured for Social Security benefits (Social Security Administration, Office of Research, Evaluation, and Statistics, 2002a: Table 4.C5, p. 172).¹² The most dramatic projected shift from 2000 that DYNASIM reveals is an increase in the number of women who will be receiving benefits as dually entitled survivors.

Our analyses suggest that the distribution of women Social Security beneficiaries will vary greatly by race (also Figure 2), lifetime family earnings quintile (Figure 3), and age (Figure 4). In the projections, white women are far more likely to be receiving dual entitlement benefits than are nonwhite women, who are far more likely to be classified as workers. Harrington Meyer (1996) has found similar results with respect to spouse benefits in the recent historical period. A number of factors likely contribute to this outcome, including higher levels of labor force participation, lower levels of marriage, and higher levels of divorce among African-American women (the majority of nonwhite women) than among white women. Ozawa and Kim (2001) have also pointed to a more even split in earnings between husbands and wives in black couples. Taken together, these patterns would imply that fewer black women than white women would qualify for Social Security spouse or survivor benefits.

The projected Social Security benefit distribution in 2040 by family lifetime earnings quintile suggests that women who are in the highest income quintiles are those most likely to be receiving benefits as workers (Figure 3).¹³ Virtually no women in the highest earnings quintile

¹¹ These figures, of course, combine both the effect of aging (more women becoming widowed) and a cohort effect (women born earlier had different levels of attachment to the labor force).

¹² Workers are fully insured for benefits both for themselves and for their spouses/survivors if they have earned a quarter of coverage for each year elapsing between age 21 and the age when they reach 62, become disabled, or die. Some of the women insured for disability and survivor benefits in their thirties and forties may not be fully insured at retirement, while others not insured for disability and survivor benefits in their thirties and forties may eventually become insured for retirement benefits.

¹³ Our family lifetime earnings measure reflects average Social Security-covered earnings (so it excludes earnings above the taxable maximum or those not covered by the OASDI system) as a fraction of the average wage between ages 25 and 62, inclusive. Although similar to the Social Security Administration's AIME measure, ours is not equivalent to that measure for a number of reasons (for example, we do not consider computation years).

receive benefits solely as spouses or as survivors. This result is due in large part to the way that we have defined both earnings and the quintile thresholds.¹⁴ Our measure reflects *family* (or, more precisely, *couple*) earnings rather than *individual* earnings.¹⁵ Because we *average* spouses' lifetime earnings and earnings are capped at the taxable maximum, dual-earner families are more likely to be in higher quintiles than single-earner families. Age differences across the quintiles also impact this finding. Those women with the lowest lifetime earnings tend to be older, and hence more likely to be receiving survivor benefits. This result differs from analyses of previous retirement cohorts (e.g., Harrington Meyer, 1996), in which women from higher income quintiles often received spouse and survivor benefits. Although our method for defining lifetime family earnings is a key reason for this difference, increases in women's work, especially at higher educational levels, and increases in educational homogamy (see, for example, Mare, 1991 or Pencavel, 1998), or the fact that similar people tend to marry one another, likely contribute to this outcome.

The projected pattern of women's Social Security benefit types by age in 2040 (Figure 4) clearly mirrors the present distribution of benefit types, although again with the dramatic increase in dual entitlement for survivors. At the youngest ages, 62 to 64, more than 70 percent of women beneficiaries qualify as workers. This declines steadily with age, so that only about 40 percent of the recipients aged 80 and over are workers. Women in this age range are predominantly receiving survivor benefits, mostly as dually entitled beneficiaries. That is to say, their worker benefits are topped up by survivor benefits that are based on the earnings records of their deceased spouses or ex-spouses.

Top-Up of Social Security Benefits of Dually Entitled Beneficiaries

The fraction of benefits that these dual entitlement top-ups comprise varies greatly by whether one is a spouse or a survivor recipient (Figure 5). For the majority (54 percent) of dually entitled spouse recipients in 2040, the dual entitlement top-up is less than 10 percent of their total Social Security benefit. In absolute terms, this translates to less than \$50 (1998 dollars) a month for nearly half of the beneficiaries (Figure 6). For the dually entitled survivors, in contrast, the dual entitlement top-ups are far more significant, both in proportional and absolute terms. We see that the bulk of survivors have top-ups in the range of 20 to 69 percent of their total benefits. In absolute terms, this translates to a range of \$300 to \$1,000 (1998 dollars) a month in additional benefits, clearly a significant source of income for this vulnerable group.

Note that Figures 5 and 6 illustrate the distribution of benefit top-ups *among* dually entitled beneficiaries. If we combine this information with the information from Figure 2 (on the proportion of women who receive Social Security benefits of each type), we can garner a more complete view of the expected distribution of spouse and survivor benefits, including top-ups, among older women in 2040 (Figure 7). Figure 7 differs from Figure 5 in that it includes dual

¹⁴ The pool that determines the quintile thresholds thus includes men and women who are both single and married. Women disproportionately have earnings that fall into the lower quintiles (i.e., more than one-fifth of women fall into quintile one, while less than one fifth fall into quintile five).

¹⁵ For married persons, the measure equals the sum of the head's lifetime earnings from age 25 through 62 and the spouse's lifetime earnings from 25 through 62, divided by two. For a widowed woman, the deceased spouse's earnings are included in this calculation. If a woman is divorced, we do not include her former spouse's earnings.

entitlement fractions of zero (for married or widowed women who are only receiving worker benefits) and of 100 percent (for married or widowed women who are receiving spouse or survivor-only benefits). This figure reminds us that the majority of women in 2040 are *not* receiving spouse or survivor benefits. About two-thirds of married women, and nearly 20 percent of widows, receive no spouse or survivor benefit component from Social Security.

Comparisons of Alternative Proposals

The 11 Social Security reform proposals that we have chosen to model are all programmatic reform options. We first describe the proposals in detail, and then report our results. We discuss the proposals in two groups: those that simply add new benefits to the Social Security system, and those that combine benefit increases for some individuals with benefit cuts for others. We begin with the increase options, which we discuss in approximate order of size, starting with the larger total benefit increases and finishing with the smaller increases. We restrict our discussion to the proposals' effects on women who are ages 62 and older and express all dollar amounts in constant (1998) dollars.

Increase Options 1 and 2: Increasing Survivor Benefits

We simulate two versions of this proposal: a more generous version that would increase survivor benefits to 75 percent of a couple's combined benefit, and a less generous version that would increase survivor benefits to 67 percent of a couple's combined benefit. Both reforms would remove some of the current disparity in survivor benefits among couples with the same lifetime earnings but with a different share of earnings from each spouse. The first version—or the increase to 75 percent of the combined benefit—would raise benefits for all survivors, but particularly survivors of couples who do not receive spousal benefits, for whom current survivor benefits can be as low as 50 percent of the couple's benefit when both were alive. It would raise survivor benefits by a maximum of 50 percent for survivors from two-earner couples with equal lifetime earnings, and a minimum of 12.5 percent for survivors from one-earner couples. The second version—or increase to 67 percent of the couple's benefit—would only raise benefits for survivors from two-earner couples, as survivors in one-earner couples already currently receive roughly two-thirds of the combined benefit when both spouses are alive. It would raise survivor benefits by a maximum of 34 percent for a two-earner couple with equal lifetime earnings. Neither version of this reform would change the survivor benefits received by a divorced surviving spouse.

Increase Option 3: The Work-Related Minimum Benefit

We consider a minimum benefit option that would provide a benefit equal to 60 percent of the wage-indexed poverty threshold for workers with at least 20 years of qualified earnings (earnings that meet the current-law threshold for four covered quarters per year).¹⁶ The benefit would increase by 2 percentage points for each additional year of qualified earnings, and reach a maximum of 100 percent of the wage-indexed poverty threshold for workers with 40 or more years of earnings. Because the minimum benefit would increase with average wages in the economy, it would allow recipients to maintain their relative economic standing in the

¹⁶ The poverty threshold would be wage indexed starting in 2010.

population. It would grow faster than the official poverty level, which grows only as fast as prices. The option that we examine would continue to wage index the benefit guarantee *after* retirement as well. Thus, it would provide the greatest benefits to older workers, as some retirees whose initial retirement benefits exceed the minimum would switch later on when their price-indexed benefit fell below the minimum.

Increase Options 4 and 5: Increasing Benefit Levels for Divorced Spouses

The next two increase options target divorced persons. They specifically address the anomaly that a divorced spouse beneficiary is better off when his or her former spouse is deceased than when he or she is alive. The fourth option raises the divorced spouse benefit from 50 to 100 percent of the worker's Primary Insurance Amount, thereby eliminating the difference between a divorced spouse and a divorced survivor benefit. The fifth option raises the benefit to 75 percent of the former spouse's PIA, thus reducing but not eliminating the anomaly.¹⁷

Increase Options 6 and 7: Reducing the Length of Marriage Requirement for Spousal and Survivor Benefits

A sixth option also targets divorced persons, specifically aiding certain divorced men and women whose marriages are of relatively short duration. Under this option, a person would be eligible for divorced spouse/survivor benefits if his or her marriage lasted at least 5 years (rather than the current minimum of 10 years). A less generous variant of this proposal, our seventh increase option, extends eligibility to those with seven years of marriage.¹⁸

Increase Option 8: Childcare Credits

This final increase option would provide up to five years of earnings credits to parents who have children under the age of six in their care. The credits would raise countable annual earnings for purposes of computing Social Security benefits to one-half of the average wage in each childcare year. Childcare credits with a cap on the amount of credit provide a somewhat more even subsidy to workers who are raising children than alternative proposals that would exclude childcare years from the averaging period for calculating benefits. The effect of a closely related alternative—childcare dropout years—is to replace some zero or low earnings with a worker's average earnings from his or her own remaining work years, thus providing more generous credits for childcare to workers with higher lifetime earnings.

¹⁷ Although these options do eliminate or reduce the anomaly of making a divorced person better off when the spouse is dead, they also create a new anomaly. If this policy were implemented, most married couples who had been together for at least 10 years would be better off if they were to divorce than if they remained married.

¹⁸ Phasing in the divorced spouse benefit, for example by tying the benefit level to the marriage duration (e.g., 50 percent of the full benefit for 5 years of marriage, 60 percent for 6 years, and so forth), would be one way to avoid threshold effects present under current law and the simulated options.

Comparison of Increase Options

As we have already noted, the eight benefit increase proposals vary significantly in size (Table 2).¹⁹ The increase in survivor benefits to 75 percent of a couple's total benefit is by far the largest. The next largest proposal, the minimum benefit, is only about two-fifths its size (in terms of aggregate change in benefits expenditures in 2040). The increase in survivor benefits to 67 percent of the couple's benefit is more closely comparable to the minimum benefit, and just 36 percent the size of the larger survivor benefit increase. The increase in divorced spouse benefits to 100 percent of the former spouse's PIA is slightly more than a quarter of the size of the larger survivor benefit increase. The remaining four increase proposals (the childcare credits, the increase in divorced spouse benefits to 75 percent of the worker's PIA, and the 2 expansions of eligibility for divorced spouse benefits) are all much smaller, less than 10 percent of the 75 percent survivor option's size. To take into account these important differences in the relative sizes of the eight increase reforms, we concentrate on the *shares* of benefits that go to women in different groups under each option. We present results from the simulations of these eight options in Tables 3 through 10.

Options 1 and 2, which increase survivor benefits, target the oldest old extremely effectively. In the case of the increase to 75 percent of the couple's benefit, over half (54 percent) of the women who are ages 80 and over receive higher benefits, compared to about 17 percent of the women ages 62 to 64 (see "all women" in Table 3). For the 67 percent option, the figures are similarly patterned but slightly lower, with 47 percent of the women ages 80 and over and 12 percent of the women ages 62 to 64 receiving higher benefits (Table 4). This is not surprising, given that widowhood (and thus survivor benefits receipt) is concentrated at older ages. As Tables 8 and 9 illustrate, options 6 and 7 to broaden eligibility for divorced spouse benefits benefit relatively few women but once more reach a higher percentage at older ages than at younger ages. This is again most likely because of a widowhood effect (i.e., for many of these women, a spouse benefit based on their ex-husband's record would not be larger than their own benefit; however, the survivor benefit would be larger).

For the two options to increase benefits for divorced spouses, age patterns differ (Tables 6 and 7). Under the option to raise benefits to 100 percent of the former spouse's PIA, the fraction of women benefiting from the option (both for divorced women and for all women) increases through ages 70 to 74 and then declines. With the option to raise benefits to 75 percent of the former spouse's PIA, higher fractions of women gain at ages 65 to 79 than in the older (80-plus) or younger (62 to 64) age groups. In the case of both options, declining fractions at ages 80 and older likely reflect the fact that a higher proportion of older women than younger women are already receiving survivor benefits, so had less chance of gaining from the reform. Why relatively low fractions at the youngest ages gain under these options is less clear. This could reflect a combination of factors, including cohort effects (i.e., younger women are more likely than older women to have earnings that exceed 75 or 100 percent of their former

¹⁹ For our measure of option size, we consider changes in aggregate benefits in 2040. These changes at a single point in time will differ from the changes in the long-term actuarial balance that each option produces.

husbands', so are less likely to gain) and selectivity among those who elect to receive their Social Security benefits before age 65.

The effects of minimum benefits (Table 5) are somewhat less patterned by age than the other reforms. Although older women do receive the bulk of the aggregate gains from the minimum benefit option, the fractions experiencing benefit increases are more uniform across groups. Childcare credits, in contrast to all the other options, primarily benefit women who are younger (Table 10). Forty-four percent of the women ages 62 to 64 receive a benefit increase, compared to slightly less than 4 percent of the women aged 80 plus. This may reflect the complement of the pattern in several of the above reforms: at earlier ages, more women are receiving benefits on their own records, so the childcare credit reform affects them at that point, but it makes little to no difference in the survivor benefit many eventually receive.

The minimum benefit, in contrast to the other options, has very dramatic effects on the gap between Social Security benefits and the poverty threshold. It reduces the fraction of women who had Social Security benefits that failed to bring them above the poverty level in 2040 from the current law level of 7.8 percent to just 4.8 percent. Given the relative expense of the two survivor benefit increase options, their projected potential poverty alleviation effects appear modest in comparison. After the 75 percent survivor benefit reform, only 6.9 percent of 2040 women had benefits of less than poverty. Although this represents a substantial improvement (0.9 percentage points) over current law, it, of course, represents significantly less improvement than the minimum benefit achieves. The less expensive 67 percent option affects only a subset of the same women and, as a necessary consequence, performs less well with respect to poverty. Under the 67 percent option, 7.6 percent of women have benefits that do not exceed poverty. Childcare credits do a bit better than the 67 percent survivor benefit option, with 7.4 percent of women having benefits below poverty after implementation. The increase in divorced spouse benefits to 75 percent of the ex-spouse's PIA leads to benefits that do not exceed poverty for 6.9 percent of women, the same level as for the 75 percent survivor benefit. When these divorced spouse benefits are increased to 100 percent of the former spouse's PIA, the resulting fraction of women with benefits less than poverty is 6.4 percent, which is better than the more expensive survivor option. The relatively small divorced spouse eligibility benefit option (with at least 7 years of marriage required) has a barely discernible impact on the fraction of women with benefits below poverty, reducing it from 7.8 to 7.7 percent. The more generous expansion (from 10 years to 5 years) reduces the fraction with benefits of less than poverty to 7.6 percent.

When we combine these findings on Social Security benefits with information on income from other sources such as pensions, earnings, and assets, a more optimistic situation emerges for older women in 2040 than we see when considering the information on Social Security alone. The percentage of women who would be poor under current law drops dramatically, to 3.6 percent, when all of these income types are taken into account. With the increase in survivor benefits to 67 percent of a couple's benefit, the poverty rate drops to 3.5 percent, the same reduction as achieved by the extension of eligibility for divorced spouse benefits to those women with at least 7 years of marriage. The more ambitious divorced spouse benefit eligibility extension (to those with at least 5 years of marriage) and the more generous survivor benefit increase (to 75 percent of the couple benefit) drop the overall women's poverty rate to 3.4 and 3.3 percent, respectively. The increases in divorced spouse benefits to 75 and 100 percent of the

ex-spouse's PIA reduce poverty further still, to 3.2 and 3.1 percent, respectively. Finally, the minimum benefits come very close to eliminating poverty once total incomes are taken into account, reducing the poverty rate to just 2.2 percent for older women.

A number of factors contribute to the dramatic decline in poverty from levels that we observe today to those that we project for 2040 under current law and with these benefit increase options. Probably most important, as we have already noted, is that initial Social Security benefits are indexed to wages, while the poverty threshold is indexed to prices. As wages have historically grown more quickly than prices, we expect that under current law and these add-on options, Social Security benefits will grow in real terms over time, bringing more and more women out of poverty.²⁰ Another interesting aspect of these poverty estimates is the rather sizable reduction in poverty for women in the lowest earnings quintile (defined as above, in our discussion of benefit types)²¹ when other income is added. This is somewhat surprising, given that wealth tends to be highly correlated with lifetime earnings. We should keep in mind, however, that some of those people whom we classify as having low lifetime earnings may have worked outside Social Security-covered employment for part or all of their careers. As a result, their lifetime earnings covered by Social Security are relatively low, but their total lifetime earnings need not be. Further, some may have access to fairly generous government pensions.

Returning to our comparisons of the options, we project the survivor benefit increase options to be among the least progressive of the various increase options. In the 67 percent scenario (option 2), slightly more than 6 percent of the gains go to women in the lowest lifetime family earnings quintile even though these women make up almost 21 percent of the full population of women ages 62 and over. Women in the highest lifetime earnings quintile receive more than five times the aggregate gain (36 percent in all), even though they make up only 19 percent of the population. Figures for the 75 percent scenario (option 1) are similar, though slightly less regressive.

Far more progressive are the options that institute childcare credits and minimum benefits, that increase benefits to divorced spouses, and that reduce the marriage duration requirements for divorced spouses. The minimum benefit option directs nearly three-fifths (or more than 58 percent) of the total gain to women in the lowest earnings quintile and an additional 27 percent to women in the second lowest quintile, while directing less than 1 percent of the gain to women in the top quintile. The childcare proposal similarly concentrates almost 45 percent of the gains on the bottom quintile, and directs slightly more (just 4 percent), to the top quintile. The expansions of divorced spouse benefit eligibility and benefit levels likewise target the very bottom. For both increased eligibility options (to seven or five years of marriage required), around two-thirds of the benefits go to women in the bottom two quintiles, and just around five to six percent goes to the top. For the increases in divorced spouse benefit levels, gains are even more concentrated at the bottom. The option that increases benefits to 100 percent of the ex-spouse's benefit directs almost three-quarters of benefits to the lowest two

²⁰ The wage growth appears to more than offset increases in actuarial reductions that are accompanying ongoing increases in the Social Security normal retirement age. This is due in part to DYNASIM's forecasted increases in the fraction of workers who delay take-up of Social Security past age 62, perhaps in response to the increased actuarial reduction.

²¹ See footnotes 14 through 16 for details.

quintiles, and the 75 percent benefit directs more than 80 percent to the bottom two, making them about as progressive as the minimum benefit.

Information on the relative size of benefits granted to women in each lifetime earnings quintile provides further evidence on the progressivity and regressivity of these options. For the two survivor benefit options, average benefit increases are highest in the highest quintile, more than \$5,000 a year with the 75 percent benefit and more than \$2,600 a year for the 67 percent benefit option, while for the minimum benefit option the increases are highest in the lowest quintile, almost \$2,000 a year. Benefit increases are similarly highest in the lowest quintile for all four divorced spouse benefit options, ranging from an average benefit increase of over \$2,300 a year for the increase in benefit to 75 percent of the ex-spouse's PIA to more than \$5,100 per year for the reduction in required marriage duration to seven years. We see that this scenario has particularly concentrated effects. It does not affect a lot of women, but those whom it does affect experience very large benefit changes. Childcare credits also give the largest benefit increases to those in the lowest quintile but are much smaller in effect, averaging just more than \$400 per year.

Another interesting aspect of these proposals is how their gains are distributed by marital status. As we pointed out earlier, women who are not married are at much higher risk of poverty than women who are married. Further, among unmarried women, women who never married tend to be worse off than those who are widowed or divorced. The two survivor benefit increase options overwhelmingly target widows. Virtually all of their gains go to widows and, by definition, none go to women who never marry. The minimum benefit and childcare credits, in contrast, are neutral with respect to marital status. Both help never-married women to a significant extent. Indeed, a higher fraction of never-married women benefit from the childcare credit than women from any other marital status group except married women. This reflects the growing fraction of nonmarital births in our society, now about one-third of all births. The increase in divorced spouse benefits and eligibility, not surprisingly, benefit divorced women almost exclusively (though they do impact some married and widowed women—for example, women who remarried after age 60).

We now turn to the remaining three options, those that balance benefit increases with cuts in other parts of the program. As with the options that increased benefits, we begin by describing the options and then move on to our results. These three options are much more comparable in size than are the benefit increase options. All three come quite close to budget neutrality in 2040, with two actually reducing aggregate benefits in 2040, and the third requiring only a small outlay (Table 2).

Balance Options 1 and 2: Increasing Survivor Benefits While Cutting Spouse Benefits

A majority of the 1994-1996 Social Security Advisory Commission (1997) endorsed a 75 percent survivor benefit in combination with a reduction in the spousal benefit to 33 percent. Although the reduction in the spousal benefit would offset some of the cost of the increased survivor benefit, the combination would not be revenue neutral. Social Security actuaries estimated at that time that the combined proposal would increase long-term costs by 0.32 percent of taxable payroll. We simulate an option to increase survivor benefits to 75 percent of a

couple's combined benefit, and, like the Advisory Council proposal, reduce spousal benefits to 33 percent to partially compensate for the additional cost. To make up the remainder of the increase in benefits, we make cuts of five percent each in the replacement rates (or "bend percentages") for the top two brackets of the benefit formula. The middle bend percentage declines from 32 percent to 30.4 percent, and the highest bend percentage declines from 15 percent to 14.3 percent.

We simulate a second version of this option that increases survivor benefits to 67 percent of the couple's combined benefit while cutting spouse benefits to 33 percent of the worker's PIA as a compensation. The spouse benefit cut does not balance the option in 2040 in this case either, so we additionally reduce the top two percentages in the PIA formula by just one percent (to 31.7 and 14.9 percent).

Balance Option 3: Wage Indexing the PIA and Cutting Benefits

We also consider an option to wage index rather than price index benefits, but to reduce initial benefits by a sufficient amount to keep total expenditures constant. In our simulations, an across-the-board cut in benefits of 12 percent for beneficiaries aged 62 and over fully offsets the increase in benefits in the simulation year from wage indexing. Wage indexing of the benefits would increase benefits for widows and other older recipients, but in this option, at the expense of lowering benefits for all recipients at younger ages.

Comparison of Balance Options

As one would anticipate, under all three options, the number of women who experience a benefit increase relative to current law increases with age. For the 75 percent spouse/survivor scenario, 5 percent of women ages 62 to 64 have benefits that increase relative to current law, while 35 percent of women ages 80 and older experience an increase relative to current law (Table 11). For the 67 percent spouse/survivor option, the pattern is similar, with fewer women experiencing increases in each range—4 and 26 percent, respectively (Table 12). The shift of benefits to old age is even more dramatic with the option that combines wage indexing with a benefit cut. Under that change in policy, only 5 percent of women ages 62 to 64 experience benefit increases, while 96 percent of women ages 80 and older do so (Table 13). The absolute size of benefit increases differs across the three options as well. Benefits for those who gain under the 75 percent spouse/survivor scenario on average increase by almost \$3,200 per year. The more modest spouse/survivor option increases benefits among those who gain by an average of less than \$2,200 per year. In the wage-indexing scenario, gains are smaller still, an average of slightly more than \$1,300 per year.

The three options have different impacts on the women at highest risk of poverty as well. Under the larger spouse/survivor option (the increase to 75 percent of the couple benefit), the fraction of women whose Social Security benefits fail to exceed the poverty threshold actually increases from the current-law level of 7.8 percent to 7.9 percent. Recall that this is possible because of the spouse benefit cut and the cut in the upper bend percentages. The smaller increase in the survivor benefit, coupled with the equal spouse benefit cut and the smaller benefit cut at upper rates, does better with respect to benefits as a percent of poverty (reducing the

fraction of women with low benefits to 7.7 percent). The wage indexing option reduces the fraction of women with sub-poverty benefits more substantially, to about 7.3 percent. Taking into account other income sources, differences in the reductions in the fraction of women with total incomes less than poverty are, of course, similar. The wage indexing option does best, reducing projected poverty to 3.4 percent from its base level of 3.6 percent. This option compares with a reduction to 3.5 percent for the 67 percent survivor benefit increase, and an increase in poverty to 3.8 percent for the 75 percent survivor benefit.

All three balance options largely maintain the relative positions of women at different points in the earnings distribution. In the aggregate, the two spouse/survivor changes are very slightly regressive, while those in the wage-indexing scenario are very slightly progressive. In the first case (the 75 percent survivor option), the fraction of benefits going to those in the lowest lifetime family earnings quintile declines from 12.1 under current law to 11.8 percent. In the second case (the 67 percent survivor benefit), the fraction declines a bit less, to 11.9 percent. In the wage-indexing case, however, the fraction actually increases to 12.3 percent.

Summary and Conclusions

We have presented projections of some of the distributional consequences of eight separate options that would increase Social Security benefits for various groups of beneficiaries and of three packages that would balance increases in benefits for some beneficiaries with benefit cuts for others. Although advocates of all 11 proposals have argued that their plans would improve the lives of vulnerable women beneficiaries, we found that the distributional implications of these proposals differ in significant ways. Increases in survivor benefits effectively target older and widowed women, but grant the largest increases to women in the highest lifetime family earnings quintiles. Increased eligibility and benefit levels for divorced spouse benefits target more of their gains to women in the bottom family earnings quintiles. However, they do not reach those women who never marry, and only reach a small fraction of married or widowed women. Higher minimum benefits have a more global reach, not excluding any potential recipients on the basis of marital status, and target those with the lowest lifetime family earnings quite effectively. Childcare credits have fairly modest effects, but are likewise well targeted toward women at the bottom of the lifetime earnings distribution.

We hope that these analyses will serve to increase discussion of these 11 proposals and of others that might improve the Social Security system's treatment of women and their families. Although women's issues have been on the table for several decades, Social Security reform in this area has been modest since the series of changes that gradually instituted sex-neutrality in the sixties, seventies, and eighties. One could make a multitude of additional adjustments to these proposals in order to alter their costs and increase their target efficiency. For example, caps on survivor benefits, as explored by FitzPatrick and Entmacher (2000), could improve these proposals' performance on certain criteria, and changes in minimum benefits' work tests could broaden their reach. One can also combine several individual parameter changes to achieve varying objectives, as our analyses of packages revealed. These package proposals suggest that reforms to improve adequacy and equity of the system could be achieved at low or no cost, an important consideration for an underfunded system.

We also hope that our analyses encourage rigorous examination of the distributional consequences of Social Security reform proposals using models. The sometimes surprising patterns that our results reveal suggest that using intuition alone to guide reform efforts can be dangerous. Unless legislators use analytical methods that take into account the complexity and diversity of women's lifetime experience, the reforms that they propose could have unintended consequences.

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Tables

**Table 1. Social Security Reform Proposals that Target Older and Low-Income Women:
Selected Proposals and Studies**

Reform Proposal	Proponents	Studies
<i>Structural Reforms</i>		
Earnings sharing/benefit sharing	Feldstein (1998); Steuerle (1997)	Burkhauser (1982); CBO (1986); HHS (1985)
Individual accounts		Burtless, Bosworth, and Steuerle (1999)
Add-on plans	1994-96 SSAC (IA); Kasich (2000)	Feldstein and Liebman (2000)
Carve-out plans	1994-96 SSAC (PSA); NCRP (1998); Roth (1999)	Penner and Cove (2002)
Phase-out plans (carve-out eventually covers entire payroll tax)	Cato Institute (2002); Kotlikoff and Sachs (1997); Smith (1999)	Hill, Shaw, and Hartmann (2000); Shirley and Spiegler (1998)
<i>Programmatic Reforms</i>		
Increase progressivity of the benefit formula	Kolbe-Stenholm (2002); NCWO (1999); NCRP (1998); 1994-96 SSAC (IA)	
Childcare dropout years/childcare earnings credits/homemaker credits	1979 SSAC; DeFazio (2001); Gore (2000); NCWO (1999)	Favreault, Sammartino, and Steuerle (2002); Holden (1982); Iams and Sandell (1994)
Increase survivor benefit (e.g. to 75 percent couple benefit, sometimes with a cap) and/or decrease spouse benefit	Aaron and Reischauer (1998); Gore (2000); NCWO (1999); NCRP (1998); Entmacher (2002) for NWLC; 1994-96 SSAC (IA, PSA); Shaw (2001)	Favreault, Sammartino, and Steuerle (2002); FitzPatrick and Entmacher (2000); Hurd and Wise (1991); Iams and Sandell (1998); Sandell and Iams (1997)
Expand eligibility for disabled widows	NCWO (1999); Shaw (2001)	
Shore up minimum benefits in OASDI	Kolbe-Stenholm (2002); NCRP (1998)	Favreault, Sammartino, and Steuerle (2002)
Improve Supplemental Security Income coverage	Munnell and Stiglin (1982); Smeeding (1994)	Kijakazi (2001); McGarry (2000); SSA (2000)
Decrease divorced spouse marriage duration minimum, allow mix of marriage/work	NCWO (1999)	Favreault, Sammartino, and Steuerle (2002)
Use income tax system (for example, tax OASI benefits like private pensions)	1994-96 SSAC (MB, IA); Aaron and Reischauer (1998); Moynihan and Kerrey (1998)	CBO (1999); Pattison and Harrington (1993)
Defer benefits to later in life by indexing changes		Favreault, Sammartino, and Steuerle (2002)

Abbreviations Used: CBO: U.S. Congressional Budget Office; HHS: U.S. Department of Health and Human Services; NCRP: National Commission on Retirement Policy (CSIS); NCWO: National Council of Women's Organizations; NWLC: National Women's Law Center; 1979 SSAC: 1979 Social Security Advisory Council; 1994-96 SSAC: 1994-1996 Social Security Advisory Council (IA is individual accounts, PSA is personal savings accounts, and MB is maintenance of benefits)

Table 2. Comparison of Options by Size, Projected 2040

	Change in Total Benefits in 2040
<i>Benefit increase options</i>	
1.) Increase survivor benefit to 75% of couple's benefit	+4.5 %
2.) Increase survivor benefit to 67% of couple's benefit	+1.6 %
3.) Work-related minimum benefit	+1.8 %
4.) Increase divorced spouse benefit to 100% of ex-spouse PIA	+1.2 %
5.) Increase divorced spouse benefit to 75% of ex-spouse PIA	+0.4 %
6.) Reduce marriage length to 5 years for divorced spouse	+0.3 %
7.) Reduce marriage length to 7 years for divorced spouse	+0.2 %
8.) Childcare credit	+0.3 %
<i>Options that combine benefit increases and benefit cuts</i>	
1.) Increase survivor benefit to 75% of couple's benefit, reduce spouse benefit to 33% of PIA, reduce top 2 percentages in PIA formula by 5% (to 30.4% and 14.3%)	-0.1 %
2.) Increase survivor benefit to 67% of couple's benefit, reduce spouse benefit to 33% of PIA, reduce top 2 percentages in the PIA formula by 1% (to 31.7% and 14.9%)	+0.3 %
3.) Wage index PIA, reduce initial PIA by 12%	-0.2 %

Source: Tabulation of DYNASIM3 by the Urban Institute.

Note: Some options (childcare credits, minimum benefits, and the combination of wage indexing with benefit reduction) were applied to both men and women. Others options (the survivor and divorced spouse benefit increase options) were modeled only for women. In the packages that combine survivor benefit increases with spouse benefit cuts, reductions in the PIA percentages were applied to both men and women, while the spouse and survivor benefit changes were applied only to women. PIA = Primary Insurance Amount.

**Table 3. Increase Survivor Benefit to 75 Percent of a Couple's Combined Benefit
(Increase Option 1)**

	Average Benefit (\$1998)				Percentage Below Poverty Threshold				Percent	
	Winners				Social Security		Total Family Income		Distribution	
	Current		Percentage	Average	Current		Current		of All	
	Law	Option	of Units	Gain	Law	Option	Law	Option	Units	of Gains
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Widows	\$15,099	\$18,157	100.0	\$3,059	5.8	3.2	2.4	1.5	100.0	100.0
Age										
62 - 64	\$14,293	\$16,505	100.0	\$2,212	6.4	2.8	4.3	2.8	3.0	2.2
65 - 69	\$15,883	\$19,119	100.0	\$3,236	3.3	2.3	1.5	1.0	8.4	8.9
70 - 74	\$15,974	\$19,364	100.0	\$3,390	2.8	1.1	0.3	0.2	13.6	15.1
75 - 79	\$15,034	\$18,147	100.0	\$3,113	3.8	2.2	1.2	0.8	19.9	20.2
80 +	\$14,831	\$17,806	100.0	\$2,976	7.7	4.3	3.4	2.1	55.1	53.6
Lifetime Family Earnings Quintile										
Lowest	\$9,602	\$11,209	99.9	\$1,609	27.0	15.0	11.6	7.4	17.6	9.2
Second	\$13,046	\$15,348	100.0	\$2,302	3.0	1.5	0.7	0.3	20.8	15.7
Middle	\$15,411	\$18,262	100.0	\$2,851	1.1	0.6	0.5	0.4	21.8	20.3
Fourth	\$17,580	\$21,162	100.0	\$3,582	0.9	0.5	0.4	0.3	23.7	27.8
Highest	\$19,672	\$24,799	100.0	\$5,126	0.1	0.0	0.0	0.0	16.1	27.0
All										
Women	\$18,533	\$19,581	34.3	\$3,054	7.8	6.9	3.6	3.3	100.0	100.0
Age										
62 - 64	\$18,963	\$19,340	17.1	\$2,213	9.9	9.3	7.9	7.6	6.1	2.2
65 - 69	\$21,146	\$21,689	16.9	\$3,219	5.6	5.4	2.7	2.7	17.3	9.0
70 - 74	\$20,240	\$21,023	23.2	\$3,376	5.8	5.4	2.4	2.4	20.3	15.2
75 - 79	\$18,343	\$19,351	32.4	\$3,111	6.7	6.2	2.4	2.2	21.0	20.2
80 +	\$16,185	\$17,795	54.1	\$2,975	10.4	8.6	4.6	3.9	34.8	53.5
Lifetime Family Earnings Quintile										
Lowest	\$10,744	\$11,211	29.0	\$1,611	35.1	31.7	16.5	15.3	20.9	9.3
Second	\$15,806	\$16,627	35.7	\$2,303	1.6	1.1	0.3	0.2	19.9	15.6
Middle	\$19,065	\$20,149	38.1	\$2,847	0.4	0.2	0.2	0.2	19.7	20.3
Fourth	\$22,225	\$23,649	39.8	\$3,573	0.4	0.2	0.1	0.1	20.4	27.8
Highest	\$25,384	\$26,863	28.9	\$5,115	0.0	0.0	0.0	0.0	19.1	27.0

Source: Tabulation of DYNASIM3 by the Urban Institute.

**Table 4. Increase Survivor Benefit to 67 Percent of a Couple's Combined Benefit
(Increase Option 2)**

	Average Benefit				Percentage Below Poverty Threshold				Percent	
	(\$1998)		Winners		Social Security		Total Family Income		Distribution	
	Current		Percentage	Average	Current		Current		of All	
	Law	Option	of Units	Gain	Law	Option	Law	Option	Units	of Gains
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Widows	\$15,099	\$16,211	84.7	\$1,313	5.8	5.2	2.4	2.2	100.0	100.0
Age										
62 - 64	\$14,293	\$14,726	71.6	\$604	6.4	5.7	4.3	3.6	3.0	1.2
65 - 69	\$15,883	\$17,086	80.4	\$1,497	3.3	3.3	1.5	1.5	8.4	9.1
70 - 74	\$15,974	\$17,273	83.1	\$1,563	2.8	2.8	0.3	0.3	13.6	15.9
75 - 79	\$15,034	\$16,200	84.0	\$1,388	3.8	3.6	1.2	1.2	19.9	20.8
80 +	\$14,831	\$15,900	86.7	\$1,233	7.7	6.6	3.4	3.0	55.1	53.0
Lifetime Family Earnings Quintile										
Lowest	\$9,602	\$10,006	71.0	\$570	27.0	23.3	11.6	10.5	17.6	6.4
Second	\$13,046	\$13,695	83.8	\$775	3.0	3.0	0.7	0.7	20.8	12.2
Middle	\$15,411	\$16,301	86.2	\$1,034	1.1	1.0	0.5	0.5	21.8	17.5
Fourth	\$17,580	\$18,901	88.2	\$1,498	0.9	0.9	0.4	0.4	23.7	28.2
Highest	\$19,672	\$22,143	93.6	\$2,639	0.1	0.1	0.0	0.0	16.1	35.8
All										
Women	\$18,533	\$18,913	29.1	\$1,306	7.8	7.6	3.6	3.5	100.0	100.0
Age										
62 - 64	\$18,963	\$19,036	12.3	\$594	9.9	9.8	7.9	7.8	6.1	1.2
65 - 69	\$21,146	\$21,347	13.6	\$1,476	5.6	5.6	2.7	2.7	17.3	9.1
70 - 74	\$20,240	\$20,539	19.3	\$1,550	5.8	5.8	2.4	2.4	20.3	16.0
75 - 79	\$18,343	\$18,720	27.3	\$1,382	6.7	6.7	2.4	2.4	21.0	20.8
80 +	\$16,185	\$16,763	47.0	\$1,230	10.4	9.8	4.6	4.4	34.8	52.9
Lifetime Family Earnings Quintile										
Lowest	\$10,744	\$10,860	20.7	\$561	35.1	34.1	16.5	16.1	20.9	6.4
Second	\$15,806	\$16,038	29.9	\$776	1.6	1.6	0.3	0.3	19.9	12.2
Middle	\$19,065	\$19,402	32.8	\$1,026	0.4	0.4	0.2	0.2	19.7	17.4
Fourth	\$22,225	\$22,749	35.1	\$1,491	0.4	0.4	0.1	0.1	20.4	28.2
Highest	\$25,384	\$26,097	27.1	\$2,632	0.0	0.0	0.0	0.0	19.1	35.8

Source: Tabulation of DYNASIM3 by the Urban Institute.

Table 5. Minimum Benefits (Increase Option 3)

	Average Benefit (\$1998)		Winners		Percentage Below Poverty Threshold				Percent Distribution	
			Percentage of Units	Average Gain	<i>Social Security</i>		<i>Total Family Income</i>		of All Units of Gains	
	Current	Option			Current	Option	Current	Option		
	Law	Law			Law	Option	Law	Option		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Married Women	\$26,628	\$27,104	29.0	\$1,641	0.5	0.2	0.3	0.1	100.0	100.0
Widows	\$15,099	\$15,176	6.0	\$1,284	5.8	4.2	2.4	1.7	100.0	100.0
Divorced Women	\$12,995	\$13,268	18.0	\$1,521	16.5	9.9	7.0	4.1	100.0	100.0
Never Married Women	\$12,199	\$12,607	24.1	\$1,691	22.8	13.0	12.0	6.7	100.0	100.0
All Women	\$18,533	\$18,828	18.6	\$1,588	7.8	4.8	3.6	2.2	100.0	100.0
Age										
62 - 64	\$18,963	\$19,341	21.1	\$1,789	9.9	7.3	7.9	6.1	6.1	7.8
65 - 69	\$21,146	\$21,421	17.5	\$1,571	5.6	4.1	2.7	1.9	17.3	16.1
70 - 74	\$20,240	\$20,485	16.1	\$1,522	5.8	4.0	2.4	1.6	20.3	16.9
75 - 79	\$18,343	\$18,669	21.3	\$1,533	6.7	3.3	2.4	1.3	21.0	23.2
80 +	\$16,185	\$16,482	18.5	\$1,605	10.4	6.0	4.6	2.4	34.8	35.0
Lifetime Family Earnings Quintile										
Lowest	\$10,744	\$11,567	42.1	\$1,956	35.1	21.8	16.5	10.0	20.9	58.2
Second	\$15,806	\$16,202	29.4	\$1,348	1.6	0.8	0.3	0.2	19.9	26.8
Middle	\$19,065	\$19,205	13.0	\$1,079	0.4	0.2	0.2	0.1	19.7	9.4
Fourth	\$22,225	\$22,296	5.7	\$1,237	0.4	0.3	0.1	0.1	20.4	4.9
Highest	\$25,384	\$25,395	1.1	\$1,036	0.0	0.0	0.0	0.0	19.1	0.7

Source: Tabulation of DYNASIM3 by the Urban Institute.

**Table 6. Increase Divorced Spouse Benefit to 100 Percent of Former Spouse's PIA
(Increase Option 4)**

	Current Law (\$1998)		Winners		Percentage Below Poverty Threshold				Percent Distribution	
	Current Law	Option	Percentage of Units	Average Gain	Social Security		Total Family Income		of All Units	of Gains
					Current Law	Option	Current Law	Option		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
Divorced										
Women	\$12,995	\$14,023	27.9	\$3,691	16.5	10.1	7.0	4.6	100.0	100.0
Age										
62 - 64	\$12,214	\$13,213	26.5	\$3,767	23.8	15.7	19.7	14.3	5.7	5.6
65 - 69	\$13,911	\$15,155	34.9	\$3,567	11.1	4.7	4.4	2.2	17.6	21.3
70 - 74	\$13,770	\$15,015	36.5	\$3,412	14.1	7.2	5.4	3.4	21.8	26.4
75 - 79	\$12,966	\$14,166	30.6	\$3,922	14.0	6.8	4.6	1.6	22.3	26.0
80 +	\$12,140	\$12,794	16.6	\$3,930	21.3	16.2	8.9	7.2	32.6	20.7
Lifetime Family Earnings Quintile										
Lowest	\$9,227	\$10,934	34.8	\$4,902	47.5	29.1	20.5	13.6	34.0	56.5
Second	\$11,283	\$12,611	34.6	\$3,837	1.5	0.9	0.0	0.0	18.1	23.4
Middle	\$13,502	\$14,157	24.8	\$2,639	0.0	0.0	0.0	0.0	14.8	9.4
Fourth	\$15,701	\$16,209	21.6	\$2,349	0.0	0.0	0.0	0.0	13.2	6.5
Highest	\$18,845	\$19,057	16.1	\$1,318	0.0	0.0	0.0	0.0	19.9	4.1
All										
Women	\$18,533	\$18,810	7.6	\$3,656	7.8	6.4	3.6	3.1	100.0	100.0
Age										
62 - 64	\$18,963	\$19,200	6.2	\$3,819	9.9	8.5	7.9	6.9	6.1	5.2
65 - 69	\$21,146	\$21,476	9.3	\$3,541	5.6	4.2	2.7	2.3	17.3	20.6
70 - 74	\$20,240	\$20,591	10.2	\$3,442	5.8	4.2	2.4	2.0	20.3	25.7
75 - 79	\$18,343	\$18,699	9.6	\$3,702	6.7	5.0	2.4	1.7	21.0	27.0
80 +	\$16,185	\$16,356	4.3	\$3,973	10.4	9.2	4.6	4.3	34.8	21.4
Lifetime Family Earnings Quintile										
Lowest	\$10,744	\$11,372	13.0	\$4,828	35.1	29.2	16.5	14.2	20.9	47.3
Second	\$15,806	\$16,158	9.1	\$3,859	1.6	1.0	0.3	0.3	19.9	25.4
Middle	\$19,065	\$19,228	5.7	\$2,862	0.4	0.3	0.2	0.2	19.7	11.6
Fourth	\$22,225	\$22,363	5.0	\$2,771	0.4	0.2	0.1	0.1	20.4	10.2
Highest	\$25,384	\$25,464	4.7	\$1,699	0.0	0.0	0.0	0.0	19.1	5.5

PIA = Primary Insurance Amount.

Source: Tabulation of DYNASIM3 by the Urban Institute.

**Table 7. Increase Divorced Spouse Benefit to 75 Percent of Former Spouse's PIA
(Increase Option 5)**

	Current Law (\$1998)				Percentage Below Poverty Threshold				Percent	
	Winners				Social Security		Total Family Income		Distribution	
	Current		Percentage	Average	Current		Current		of All	
	Law	Option	of Units	Gain	Law	Option	Law	Option	Units	of Gains
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Divorced										
Women	\$12,995	\$13,356	20.3	\$1,780	16.5	12.5	7.0	5.3	100.0	100.0
Age										
62 - 64	\$12,214	\$12,612	17.7	\$2,252	23.8	17.7	19.7	15.7	5.7	6.3
65 - 69	\$13,911	\$14,349	25.6	\$1,714	11.1	7.3	4.4	2.4	17.6	21.3
70 - 74	\$13,770	\$14,176	24.0	\$1,692	14.1	9.5	5.4	4.1	21.8	24.5
75 - 79	\$12,966	\$13,394	23.6	\$1,812	14.0	9.8	4.6	2.8	22.3	26.4
80 +	\$12,140	\$12,380	13.3	\$1,803	21.3	18.3	8.9	7.7	32.6	21.6
Lifetime Family Earnings Quintile										
Lowest	\$9,227	\$9,969	31.6	\$2,345	47.5	36.2	20.5	15.7	34.0	69.8
Second	\$11,283	\$11,689	28.6	\$1,418	1.5	1.1	0.0	0.0	18.1	20.3
Middle	\$13,502	\$13,629	15.3	\$830	0.0	0.0	0.0	0.0	14.8	5.2
Fourth	\$15,701	\$15,793	10.1	\$911	0.0	0.0	0.0	0.0	13.2	3.3
Highest	\$18,845	\$18,869	3.9	\$616	0.0	0.0	0.0	0.0	19.9	1.3
All										
Women	\$18,533	\$18,630	5.4	\$1,795	7.8	6.9	3.6	3.2	100.0	100.0
Age										
62 - 64	\$18,963	\$19,055	4.1	\$2,263	9.9	8.8	7.9	7.2	6.1	5.8
65 - 69	\$21,146	\$21,257	6.5	\$1,703	5.6	4.8	2.7	2.3	17.3	19.8
70 - 74	\$20,240	\$20,356	6.8	\$1,690	5.8	4.8	2.4	2.2	20.3	24.3
75 - 79	\$18,343	\$18,468	7.0	\$1,774	6.7	5.7	2.4	1.9	21.0	27.2
80 +	\$16,185	\$16,249	3.3	\$1,937	10.4	9.7	4.6	4.3	34.8	22.8
Lifetime Family Earnings Quintile										
Lowest	\$10,744	\$11,016	11.7	\$2,329	35.1	31.5	16.5	14.9	20.9	58.8
Second	\$15,806	\$15,917	7.2	\$1,550	1.6	1.2	0.3	0.3	19.9	23.1
Middle	\$19,065	\$19,104	3.7	\$1,039	0.4	0.3	0.2	0.2	19.7	7.9
Fourth	\$22,225	\$22,262	2.6	\$1,409	0.4	0.3	0.1	0.1	20.4	7.8
Highest	\$25,384	\$25,397	1.3	\$983	0.0	0.0	0.0	0.0	19.1	2.5

PIA = Primary Insurance Amount.

Source: Tabulation of DYNASIM3 by the Urban Institute.

Table 8. Reduce Required Marriage Duration to Five Years (Increase Option 6)

	Current Law (\$1998)		Winners		Percentage Below Poverty Threshold				Percent Distribution	
			Percentage of Units	Average Gain	Social Security		Total Family Income		of All	
	Current Law	Option			Current Law	Option	Current Law	Option	Units	of Gains
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Divorced										
Women	\$12,995	\$13,158	3.9	\$4,134	16.5	15.4	7.0	6.4	100.0	100.0
Age										
62 - 64	\$12,214	\$12,234	0.7	\$3,023	23.8	23.8	19.7	19.7	5.7	0.7
65 - 69	\$13,911	\$13,952	1.8	\$2,336	11.1	10.7	4.4	4.2	17.6	4.5
70 - 74	\$13,770	\$13,864	3.0	\$3,091	14.1	13.6	5.4	5.0	21.8	12.6
75 - 79	\$12,966	\$13,167	4.6	\$4,408	14.0	13.1	4.6	4.0	22.3	27.4
80 +	\$12,140	\$12,414	5.9	\$4,667	21.3	19.1	8.9	7.8	32.6	54.8
Lifetime Family Earnings Quintile										
Lowest	\$9,227	\$9,509	6.1	\$4,645	47.5	44.4	20.5	18.8	34.0	59.0
Second	\$11,283	\$11,423	4.7	\$2,962	1.5	1.3	0.0	0.0	18.1	15.6
Middle	\$13,502	\$13,685	3.4	\$5,330	0.0	0.0	0.0	0.0	14.8	16.6
Fourth	\$15,701	\$15,778	2.1	\$3,706	0.0	0.0	0.0	0.0	13.2	6.2
Highest	\$18,845	\$18,866	1.2	\$1,824	0.0	0.0	0.0	0.0	19.9	2.6
All										
Women	\$18,533	\$18,602	1.7	\$3,947	7.8	7.6	3.6	3.4	100.0	100.0
Age										
62 - 64	\$18,963	\$18,967	0.2	\$1,811	9.9	9.9	7.9	7.9	6.1	0.4
65 - 69	\$21,146	\$21,163	0.7	\$2,364	5.6	5.5	2.7	2.7	17.3	4.3
70 - 74	\$20,240	\$20,297	1.8	\$3,125	5.8	5.6	2.4	2.3	20.3	17.0
75 - 79	\$18,343	\$18,442	2.1	\$4,725	6.7	6.5	2.4	2.3	21.0	30.3
80 +	\$16,185	\$16,279	2.2	\$4,194	10.4	10.0	4.6	4.4	34.8	48.0
Lifetime Family Earnings Quintile										
Lowest	\$10,744	\$10,868	2.8	\$4,494	35.1	34.1	16.5	15.9	20.9	38.0
Second	\$15,806	\$15,899	2.7	\$3,488	1.6	1.6	0.3	0.3	19.9	27.2
Middle	\$19,065	\$19,129	1.6	\$4,079	0.4	0.4	0.2	0.2	19.7	18.3
Fourth	\$22,225	\$22,264	1.0	\$3,891	0.4	0.4	0.1	0.1	20.4	11.6
Highest	\$25,384	\$25,402	0.6	\$3,028	0.0	0.0	0.0	0.0	19.1	4.9

Source: Tabulation of DYNASIM3 by the Urban Institute.

Table 9. Reduce Required Marriage Duration to Seven Years (Increase Option 7)

	Current Law (\$1998)		Winners		Percentage Below Poverty Threshold				Percent Distribution	
			Percentage of Units	Average Gain	Social Security		Total Family Income		of All	
	Current Law	Option			Current Law	Option	Current Law	Option	Units	of Gains
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Divorced										
Women	\$12,995	\$13,108	2.6	\$4,415	16.5	15.8	7.0	6.6	100.0	100.0
Age										
62 - 64	\$12,214	\$12,234	0.7	\$3,023	23.8	23.8	19.7	19.7	5.7	1.0
65 - 69	\$13,911	\$13,936	1.3	\$1,901	11.1	10.7	4.4	4.2	17.6	3.9
70 - 74	\$13,770	\$13,819	1.8	\$2,705	14.1	14.0	5.4	5.2	21.8	9.3
75 - 79	\$12,966	\$13,096	2.8	\$4,624	14.0	13.6	4.6	4.4	22.3	25.4
80 +	\$12,140	\$12,350	4.0	\$5,330	21.3	19.7	8.9	7.9	32.6	60.4
Lifetime Family Earnings Quintile										
Lowest	\$9,227	\$9,422	4.0	\$4,853	47.5	45.6	20.5	19.2	34.0	58.3
Second	\$11,283	\$11,346	2.8	\$2,249	1.5	1.3	0.0	0.0	18.1	10.0
Middle	\$13,502	\$13,657	2.4	\$6,504	0.0	0.0	0.0	0.0	14.8	20.1
Fourth	\$15,701	\$15,775	1.5	\$4,960	0.0	0.0	0.0	0.0	13.2	8.5
Highest	\$18,845	\$18,862	0.8	\$2,230	0.0	0.0	0.0	0.0	19.9	3.1
All										
Women	\$18,533	\$18,580	1.1	\$4,438	7.8	7.7	3.6	3.5	100.0	100.0
Age										
62 - 64	\$18,963	\$18,967	0.2	\$1,811	9.9	9.9	7.9	7.9	6.1	0.6
65 - 69	\$21,146	\$21,157	0.4	\$2,610	5.6	5.5	2.7	2.7	17.3	4.1
70 - 74	\$20,240	\$20,271	1.0	\$3,049	5.8	5.7	2.4	2.4	20.3	13.4
75 - 79	\$18,343	\$18,412	1.3	\$5,372	6.7	6.6	2.4	2.3	21.0	31.1
80 +	\$16,185	\$16,253	1.4	\$4,854	10.4	10.1	4.6	4.4	34.8	50.9
Lifetime Family Earnings Quintile										
Lowest	\$10,744	\$10,836	1.8	\$5,114	35.1	34.4	16.5	16.0	20.9	40.8
Second	\$15,806	\$15,868	1.6	\$3,949	1.6	1.6	0.3	0.3	19.9	26.6
Middle	\$19,065	\$19,103	0.8	\$4,688	0.4	0.4	0.2	0.2	19.7	16.1
Fourth	\$22,225	\$22,249	0.6	\$3,905	0.4	0.4	0.1	0.1	20.4	10.4
Highest	\$25,384	\$25,399	0.4	\$3,538	0.0	0.0	0.0	0.0	19.1	6.1

Source: Tabulation of DYNASIM3 by the Urban Institute.

Table 10. Childcare Credits (Increase Option 8)

	Average Benefit (\$1998)		Winners		Percentage Below Poverty Threshold				Percent Distribution	
			Percentage of Units	Average Gain	Social Security		Total Family Income		of All Units of Gains	
	Current Law	Option			Current Law	Option	Current Law	Option		
	(1)	(2)			(5)	(6)	(7)	(8)		
Married Women	\$26,628	\$26,719	27.5	\$333	0.5	0.4	0.3	0.2	100.0	100.0
Widows	\$15,099	\$15,119	5.4	\$352	5.8	5.7	2.4	2.3	100.0	100.0
Divorced Women	\$12,995	\$13,054	18.9	\$311	16.5	15.6	7.0	6.5	100.0	100.0
Never Married Women	\$12,199	\$12,272	21.5	\$341	22.8	21.7	12.0	10.7	100.0	100.0
All Women	\$18,533	\$18,592	17.7	\$331	7.8	7.4	3.6	3.3	100.0	100.0
Age										
62 - 64	\$18,963	\$19,115	44.0	\$346	9.9	8.8	7.9	6.7	6.1	15.8
65 - 69	\$21,146	\$21,280	35.8	\$375	5.6	4.6	2.7	2.3	17.3	39.4
70 - 74	\$20,240	\$20,314	23.0	\$320	5.8	5.4	2.4	2.1	20.3	25.5
75 - 79	\$18,343	\$18,376	12.8	\$259	6.7	6.6	2.4	2.3	21.0	11.9
80 +	\$16,185	\$16,195	3.5	\$277	10.4	10.3	4.6	4.5	34.8	5.7
Lifetime Family Earnings Quintile										
Lowest	\$10,744	\$10,870	30.1	\$418	35.1	33.4	16.5	15.2	20.9	44.8
Second	\$15,806	\$15,879	25.0	\$293	1.6	1.5	0.3	0.3	19.9	24.8
Middle	\$19,065	\$19,110	16.6	\$270	0.4	0.4	0.2	0.2	19.7	15.1
Fourth	\$22,225	\$22,258	10.7	\$309	0.4	0.4	0.1	0.1	20.4	11.5
Highest	\$25,384	\$25,396	5.2	\$227	0.0	0.0	0.0	0.0	19.1	3.8

Source: Tabulation of DYNASIM3 by the Urban Institute.

Table 11. Increase Survivor Benefit to 75 Percent of a Couple's Combined Benefit, Reduce Spouse Benefit to 33 Percent of PIA, and Reduce Upper Two Bend Percentages by 5 Percent (Balance Option 1)

	Current Law (\$1998)		Losers		Winners		Percentage Below Poverty Threshold				Percentage Distribution		
			Percentage of Units	Average Loss	Percentage of Units	Average Gain	Social Security		Total Family Income		of Benefits		of all Units
	Current Law	Option					Current Law	Option	Current Law	Option	Current Law	Option	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Married Women	\$26,628	\$25,382	99.3	-\$1,274	0.6	\$3,145	0.5	0.6	0.3	0.4	100.0	100.0	100.0
Widows	\$15,099	\$17,116	0.0	\$0	63.6	\$3,170	5.8	4.4	2.4	2.0	100.0	100.0	100.0
Divorced Women	\$12,995	\$12,525	97.2	-\$489	0.1	\$6,431	16.5	18.9	7.0	8.9	100.0	100.0	100.0
Never Married Women	\$12,199	\$11,870	92.5	-\$357	0.1	\$2,051	22.8	23.8	12.0	12.0	100.0	100.0	100.0
All Women	\$18,533	\$18,646	64.4	-\$904	21.9	\$3,171	7.8	7.9	3.6	3.8	100.0	100.0	100.0
Age													
62 - 64	\$18,963	\$18,375	79.8	-\$922	5.1	\$2,904	9.9	10.3	7.9	8.7	6.3	6.0	6.1
65 - 69	\$21,146	\$20,698	82.3	-\$989	10.1	\$3,628	5.6	6.2	2.7	3.1	19.7	19.2	17.4
70 - 74	\$20,240	\$20,076	75.6	-\$946	14.8	\$3,713	5.8	6.3	2.4	2.7	22.2	21.9	20.4
75 - 79	\$18,343	\$18,488	66.8	-\$844	22.3	\$3,177	6.7	6.8	2.4	2.6	20.8	20.8	21.1
80 +	\$16,185	\$16,865	44.2	-\$814	34.9	\$2,976	10.4	10.0	4.6	4.7	30.4	31.5	35.0
Lifetime Family Earnings Quintile													
Lowest	\$10,744	\$10,587	64.7	-\$621	12.4	1976.2	35.1	35.6	16.5	17.6	12.1	11.8	20.9
Second	\$15,806	\$15,800	64.4	-\$774	21.3	2309.8	1.6	2.0	0.3	0.4	17.0	16.9	19.9
Middle	\$19,065	\$19,170	61.9	-\$930	24.5	2775.0	0.4	0.3	0.2	0.2	20.2	20.2	19.7
Fourth	\$22,225	\$22,457	60.2	-\$1,169	27.3	3424.9	0.4	0.2	0.1	0.1	24.5	24.6	20.4
Highest	\$25,384	\$25,794	71.1	-\$1,045	24.4	4724.2	0.0	0.0	0.0	0.0	26.2	26.4	19.1

PIA = Primary Insurance Amount.

Source: Tabulation of DYNASIM3 by the Urban Institute.

Table 12. Increase Survivor Benefit to 67 Percent of a Couple's Combined Benefit, Reduce Spouse Benefit to 33 Percent of PIA, and Reduce Upper Two Bend Percentages by One Percent (Balance Option 2)

	Current Law (\$1998)		Losers		Winners		Percentage Below Poverty Threshold				Percentage Distribution		
			Percentage of Units	Average Loss	Percentage of Units	Average Gain	Social Security		Total Family Income		of Benefits		of All Units
	Current Law	Option					Current Law	Option	Current Law	Option	Current Law	Option	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Married Women	\$26,628	\$25,982	99.0	-\$665	0.5	\$2,265.8	0.5	0.6	0.3	0.3	100.0	100.0	100.0
Widows	\$15,099	\$16,133	0.0	\$0	47.9	\$2,159.6	5.8	5.3	2.4	2.2	100.0	100.0	100.0
Divorced Women	\$12,995	\$12,921	87.6	-\$86	0.3	\$609.5	16.5	16.6	7.0	7.1	100.0	100.0	100.0
Never Married Women	\$12,199	\$12,136	77.1	-\$81	0.0	\$0.0	22.8	22.8	12.0	12.0	100.0	100.0	100.0
All Women	\$18,533	\$18,631	60.7	-\$425	16.5	\$2,155.3	7.8	7.7	3.6	3.5	100.0	100.0	100.0
Age													
62 - 64	\$18,963	\$18,679	75.4	-\$460	3.6	\$1,770.4	9.9	10.0	7.9	8.0	6.3	6.1	6.1
65 - 69	\$21,146	\$20,970	78.6	-\$464	8.6	\$2,203.5	5.6	5.7	2.7	2.7	19.7	19.4	17.4
70 - 74	\$20,240	\$20,222	72.3	-\$421	12.1	\$2,369.7	5.8	5.9	2.4	2.4	22.2	22.0	20.4
75 - 79	\$18,343	\$18,459	62.9	-\$383	16.6	\$2,153.2	6.7	6.6	2.4	2.4	20.8	20.8	21.1
80 +	\$16,185	\$16,558	40.6	-\$402	25.6	\$2,098.4	10.4	10.0	4.6	4.5	30.4	30.9	35.0
Lifetime Family Earnings Quintile													
Lowest	\$10,744	\$10,667	47.1	-\$392	9.5	\$1,130.1	35.1	34.5	16.5	16.4	12.1	11.9	20.9
Second	\$15,806	\$15,748	64.2	-\$425	14.3	\$1,506.7	1.6	1.6	0.3	0.3	17.0	16.9	19.9
Middle	\$19,065	\$19,089	62.1	-\$467	17.2	\$1,822.8	0.4	0.4	0.2	0.2	20.2	20.1	19.7
Fourth	\$22,225	\$22,386	60.3	-\$546	20.6	\$2,382.5	0.4	0.4	0.1	0.1	24.5	24.6	20.4
Highest	\$25,384	\$25,844	71.1	-\$304	21.5	\$3,140.6	0.0	0.0	0.0	0.0	26.2	26.5	19.1

PIA = Primary Insurance Amount.

Source: Tabulation of DYNASIM3 by the Urban Institute.

Table 13. Wage Index PIA and Reduce Initial Benefits by 12 Percent (Balance Option 3)

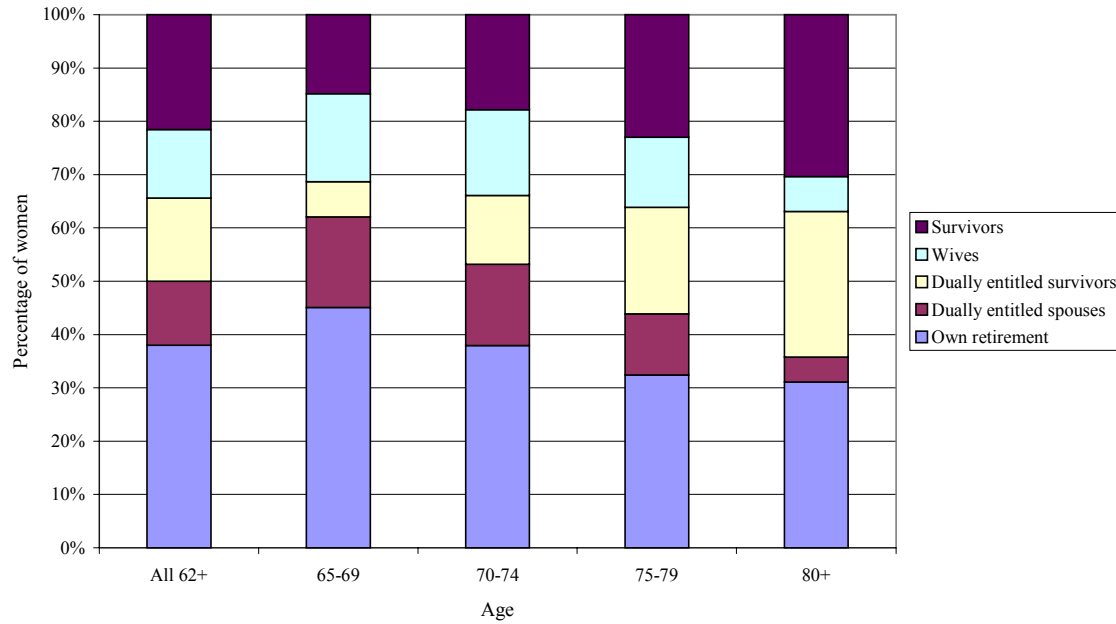
	Current Law (\$1998)		Losers		Winners		Percentage Below Poverty Threshold				Percentage Distribution		
	Current		Percentage of Units	Average Loss	Percentage of Units	Average Gain	Social Security		Total Family Income		of Benefits		of All Units
	Law	Option					Current	Option	Current	Option	Current	Option	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Married Women	\$26,628	\$25,827	67.3	-\$1,731	31.8	\$1,144	0.5	0.5	0.3	0.2	100.0	100.0	100.0
Widows	\$15,099	\$16,108	67.3	-\$1,731	31.8	\$1,144	0.5	0.5	0.3	0.2	100.0	100.0	100.0
Divorced Women	\$12,995	\$12,996	51.6	-\$866	47.3	\$947	16.5	16.2	7.0	7.0	100.0	100.0	100.0
Never Married Women	\$12,199	\$11,867	63.7	-\$900	34.5	\$699	22.8	24.2	12.0	12.3	100.0	100.0	100.0
All Women	\$18,533	\$18,551	49.2	-\$1,293	50.0	\$1,309	7.8	7.3	3.6	3.4	100.0	100.0	100.0
Age													
62 - 64	\$18,963	\$17,318	94.8	-\$1,782	5.0	\$861	9.9	12.7	7.9	10.0	6.3	5.7	6.1
65 - 69	\$21,146	\$19,591	94.2	-\$1,714	5.7	\$1,023	5.6	7.0	2.7	3.1	19.7	18.2	17.4
70 - 74	\$20,240	\$19,448	84.1	-\$1,087	15.1	\$809	5.8	6.5	2.4	2.6	22.2	21.3	20.4
75 - 79	\$18,343	\$18,541	38.7	-\$605	58.5	\$739	6.7	6.4	2.4	2.2	20.8	21.0	21.1
80 +	\$16,185	\$17,671	4.1	-\$604	95.8	\$1,578	10.4	7.5	4.6	3.4	30.4	33.1	35.0
Lifetime Family Earnings Quintile													
Lowest	\$10,744	\$10,971	40.9	-\$707	57.1	\$903	35.1	33.5	16.5	15.7	12.1	12.3	20.9
Second	\$15,806	\$15,996	45.4	-\$998	53.5	\$1,205	1.6	0.9	0.3	0.3	17.0	17.2	19.9
Middle	\$19,065	\$19,159	49.7	-\$1,257	49.7	\$1,448	0.4	0.3	0.2	0.2	20.2	20.3	19.7
Fourth	\$22,225	\$22,219	51.6	-\$1,490	48.2	\$1,580	0.4	0.3	0.1	0.1	24.5	24.5	20.4
Highest	\$25,384	\$24,940	59.1	-\$1,819	40.6	\$1,555	0.0	0.0	0.0	0.0	26.2	25.7	19.1

PIA = Primary Insurance Amount.

Source: Tabulation of DYNASIM3 by the Urban Institute.

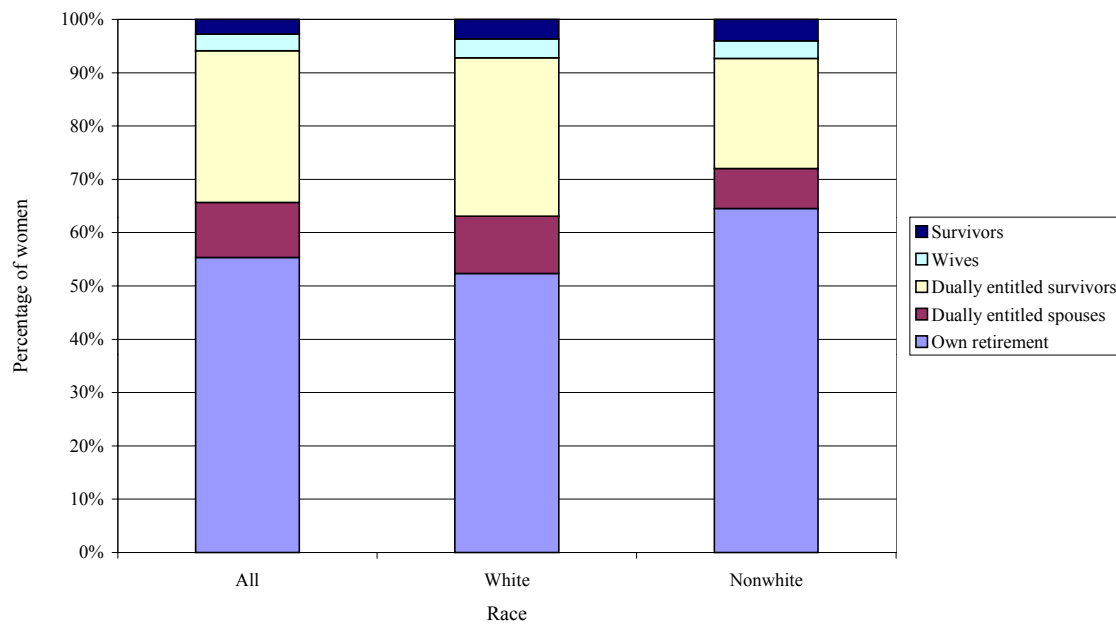
Figures

Figure 1. Distribution of Women Social Security Beneficiaries by Benefit Type and Age, 2000



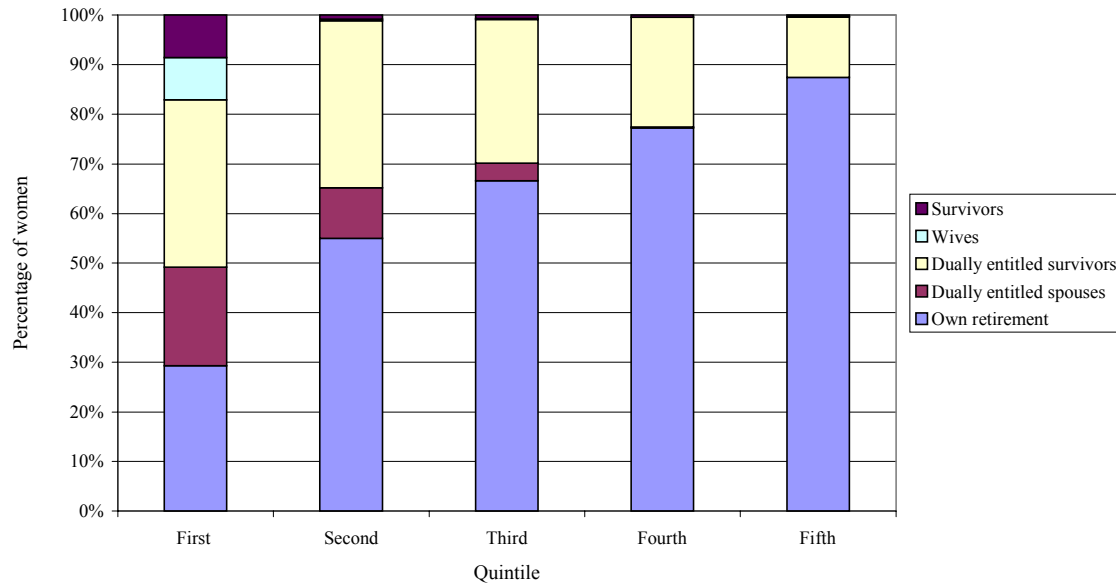
Source: Urban Institute tabulation from Social Security Administration, Office of Research, Evaluation, and Statistics (2002a: Tables 5.A14 and 5.A15, p. 192).

Figure 2. Distribution of Women Social Security Beneficiaries Ages 62 and Over by Benefit Type and Race, 2040



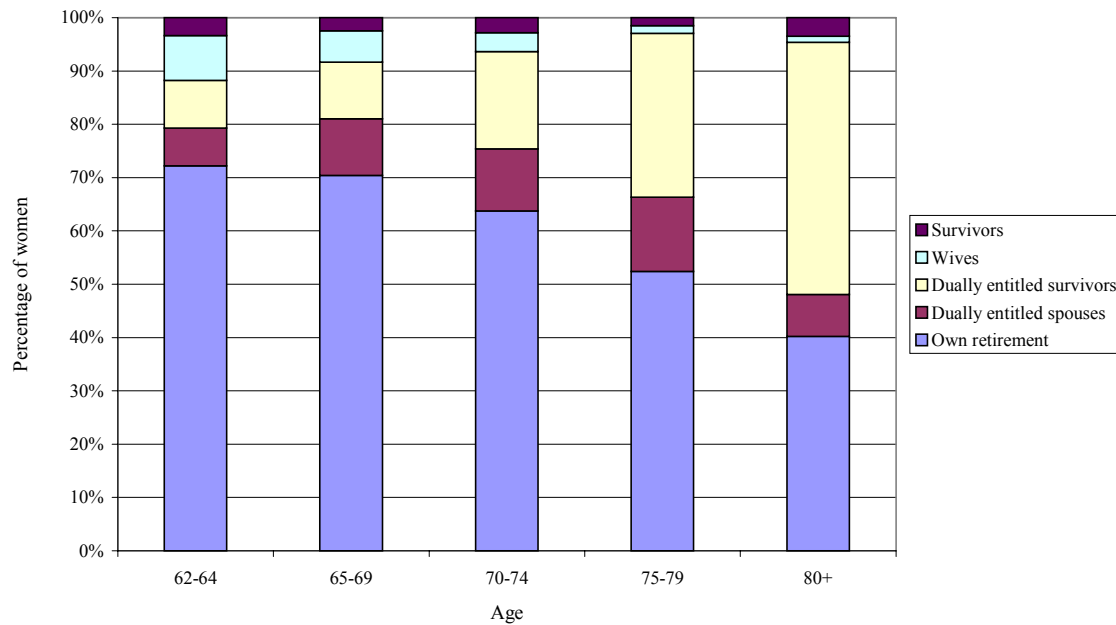
Source: Tabulation of DYNASIM3 by the Urban Institute.

Figure 3. Distribution of Women Social Security Beneficiaries Ages 62 and Over by Benefit Type and Family Lifetime Earnings Quintile, 2040



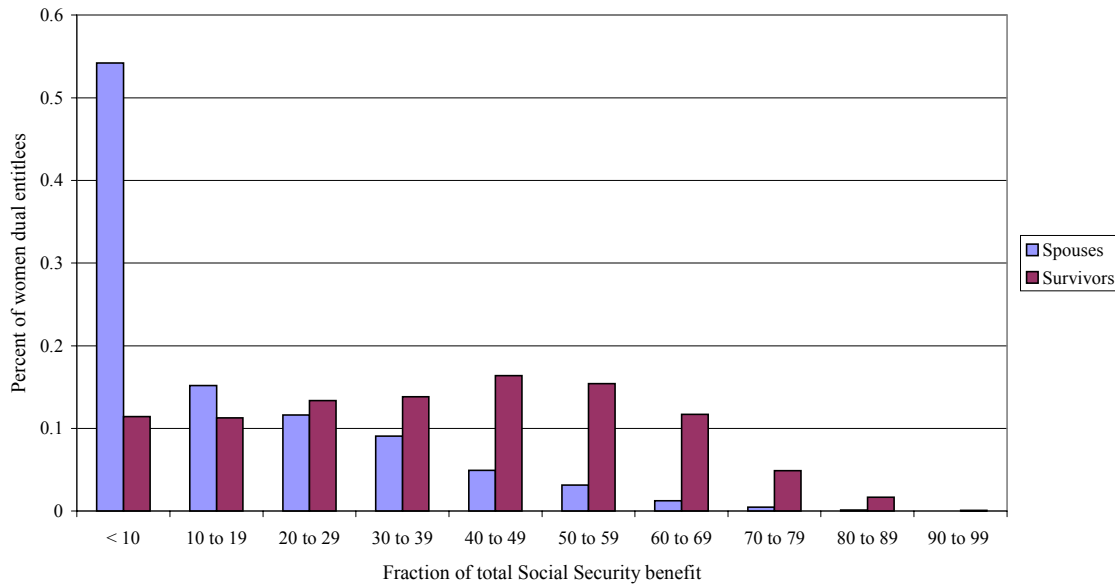
Source: Tabulation of DYNASIM3 by the Urban Institute.

Figure 4. Distribution of Women Social Security Beneficiaries by Benefit Type and Age, 2040



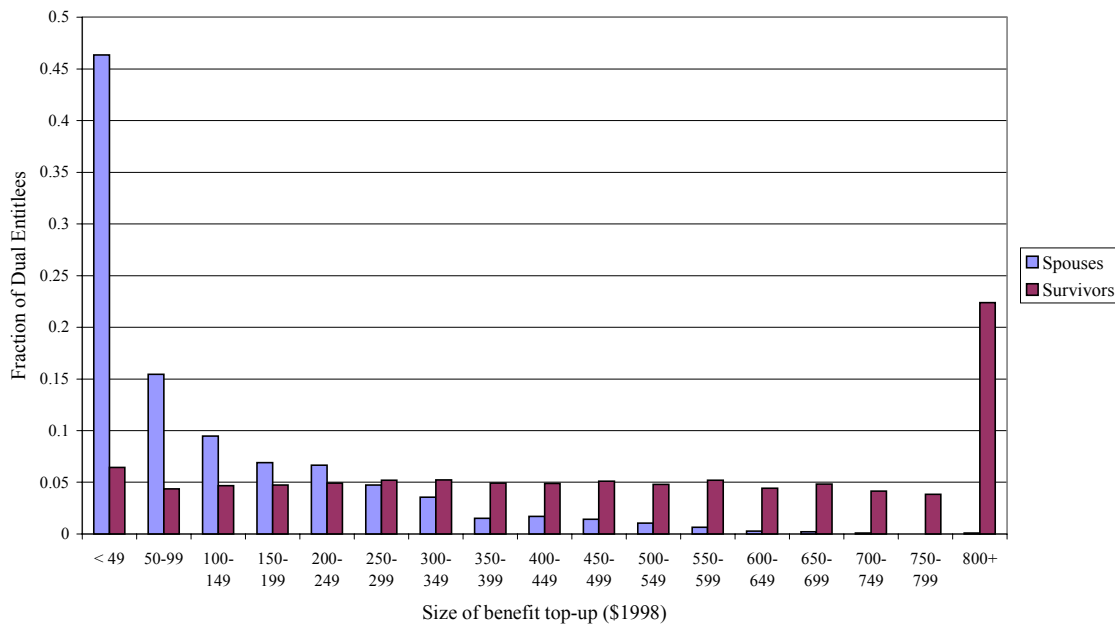
Source: Tabulation of DYNASIM3 by the Urban Institute.

Figure 5. Distribution of Dual Entitlement Top-ups as a Fraction of Total Social Security Benefit for Women Dual Entitlees Ages 62 and Over, by Type of Dual Entitlement, 2040



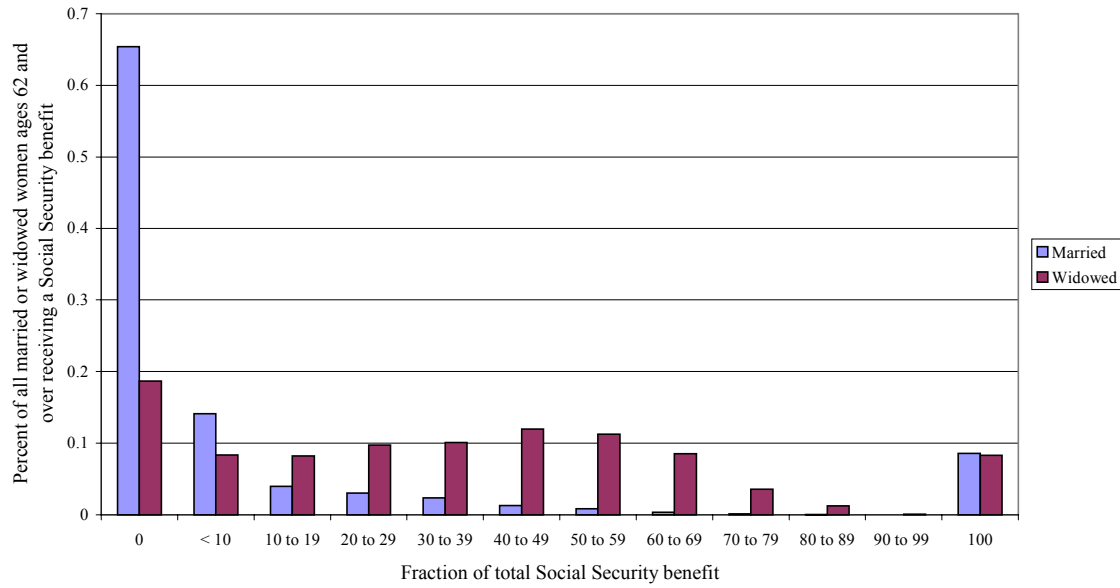
Source: Tabulation of DYNASIM3 by the Urban Institute.

Figure 6. Distribution of Dual Entitlement Top-Ups of Women Dual Entitlees Ages 62 and Over by Type of Dual Entitlement: 2040



Source: Tabulation of DYNASIM3 by the Urban Institute.

Figure 7. Fraction of Total Benefit of Married and Widowed Women Social Security Beneficiaries Ages 62 and Over that Spouse or Survivor Benefit Comprises, 2040



Source: Tabulation of DYNASIM3 by the Urban Institute.

Appendix

The Dynamic Simulation of Income Model, Version 3 (DYNASIM3)

For our analyses, we use a dynamic microanalytic simulation model: DYNASIM3. Guy Orcutt (1957) launched dynamic microanalytic simulation as a projection strategy. Orcutt argued that it is most effective to model demographic and economic processes from the “bottom up,” focusing on the actions of individual decision units rather than on aggregates. DYNASIM3 is a direct descendant of the original DYNASIM model that Orcutt helped to construct in the 1970s (Orcutt, Caldwell, and Wertheimer, 1976). Other Urban Institute researchers revised DYNASIM in the 1980s, and used the model to project the future needs of the aged population and to inform debates about distributional consequences of earnings sharing, a major structural reform of Social Security.²²

In addition to their bottom-up character, dynamic microsimulation models are further characterized by their tendency to incorporate interdependencies and feedbacks. Events in one life domain quite explicitly influence events in another. For example, a woman’s schooling affects the likelihood that she will work or marry, and her childbearing influences the likelihood that she will work. Dynamic microsimulation is thus an ideal vehicle for exploring connections between women’s life-course experiences and their Social Security outcomes.

Three core pieces make up DYNASIM3: a starting file, a series of aging algorithms (or “operating characteristics,” in Orcutt’s language), and then a series of calibration parameters.²³ By the *starting file*, we refer to the initial baseline population, including individuals’ life histories prior to the baseline observation (particularly marriage, fertility, and earnings histories). By *aging algorithms*, we refer to the empirically estimated econometric representations of economic and demographic processes. By *calibration*, we refer to those DYNASIM algorithms that constrain model outputs to match some externally provided control total, for example a historical total or a government projection.²⁴ We discuss each of these aspects of the model in turn.

The DYNASIM3 input file is based on the 1990 to 1993 Survey of Income and Program Participation (SIPP) panels. It is a self-weighting sample of over 100,000 people in 44,000 families (see Table A1). We selected all individuals in the sample in the long asset/pension topical module wave. We then randomly output families based on the panel-adjusted average person weight. For DYNASIM purposes, only nuclear families qualify as families. Subfamilies and unrelated individuals are treated as separate families. The final DYNASIM input file adjusts all year-specific variables as though all interviews were conducted in December of 1992 (what we refer to as “baseline”).

²²Zedlewski (1990) describes how DYNASIM evolved from the early years through the late 1980s. DYNASIM3 has been under development since 1999.

²³Currently, the DYNASIM aging algorithms process life events in two parts: the Family and Earnings History model, which includes the simulations of death, birth, schooling, home leaving, marriage/divorce, disability, and work prior to retirement, and then the Jobs and Benefit History model, which includes the simulation of retirement, pensions, wealth, and Social Security benefits.

²⁴One possible future enhancement of the model would be to combine the aging algorithms with the calibration routines by estimating the aging algorithms subject to constraints (see, for example, Handcock et al., 2000).

In order to calculate Social Security benefits for individuals, it is necessary to know lifetime Social Security covered earnings. Unfortunately, during the period in which we were developing DYNASIM, we were unable to obtain access to SIPP data matched with the Social Security Administration Summary Earnings Records (SER). Instead, we imputed lifetime earnings by statistically matching SIPP records with earning histories constructed from the Panel Study of Income Dynamics (PSID) from 1968 to 1993. We then statistically matched these earnings to earnings from 1951 through 1968 using the original DYNASIM2 input file, which was an exact match of the 1973 Current Population Survey and the SER.

Given this starting file, DYNASIM then ages the population in yearly increments. Most modules are grounded in transition probabilities, frequently produced by discrete-time hazard models. Separate modules replicate each social and demographic process (birth, death, earnings, and so forth), and then alignment procedures ensure that we reproduce observed historical patterns and desired future patterns. Table A2 provides an overview of core DYNASIM modules.

In some cases, users of DYNASIM may wish for model-generated totals to meet an externally provided control total. This can be implemented through aligning outcomes to these totals. For example, we align various fertility and mortality totals to intermediate assumptions from the Social Security Trustees Report (Board of Trustees, 2000; 2001). We also calibrate labor force participation rates and wage growth to assumptions from the Social Security Trustees. Marriage and divorce rates are not calibrated to these Trustees' assumptions, but rather are purely model-generated based on the last observed period rates and compositional changes in the pool of marriageable/married people.

Appendix Tables

**Table A1. Unweighted Number of People and Families and
Average Family Size and Person Weight By Data Source**

	SIPP Panel				DYNASIM3
	1990	1991	1992	1993	
Number of People	55,707	34,952	49,300	47,321	102,877
Number of Families	23,517	14,740	20,942	19,982	44,339
Average Family Size	2.37	2.37	2.35	2.37	2.32
Average Person Weight	4,469	7,352	5,212	5,539	2,498
Basis Wave	4	7	4	7	N/A

Table A2. Summary of Core Processes Modeled in DYNASIM3

Process	Data	Form and predictors
Birth	Estimation: NLSY (1979-94); VS; Target: OACT	7 equation parity progression model; varies based on marital status; predictors include age, marriage duration, time since last birth; uses vital rates after age 39; sex of newborn assigned by race; probability of multiple birth assigned by age and race
Death	Estimation: NLMS (1979-81); VS (1982-97); Target: OACT	3 equations; time trend from Vital Statistics 1982-1997; includes socioeconomic differentials; separate process for the disabled based on age, sex, and disability duration derived from Zayatz (1999)
Schooling	NLSY (1979-94), CPS (Oct. 1995)	10 cross-tabulations based on age, race, sex, and parent's education
Leaving Home	NLSY (1979-94)	3 equations; family size, parental resources, and school and work status are important predictors
First Marriage	NLSY (1979-93)	8 equations; depends on age, education, race, earnings, presence of children (for females); use vital rates at older ages
Spouse Selection		Closed marriage market (spouse must be selected from among unmarried, opposite-sex persons in the population); match likelihood depends on age, race, education
Remarriage	VS (1990)	Table-lookups, separate by sex for widowed and divorced
Divorce	PSID (1985-93)	Couple level outcome; depends on marriage duration, age and presence of children, earnings of both spouses
Labor Supply and Earnings	Estimation: PSID (1980-93); NLSY (1979-89); Target: OACT (LFP, wage/price growth)	Separate participation, hours decisions, wage rates for 16 age-race-sex groups; all equations have permanent and transitory error components; some wage equations correct for selection bias; key predictors include age splines, marital status, number and ages of children, job tenure, education level, region of residence, disability status, schooling status, unemployment level, and age spline-education level interactions
Retirement	RHS (1969-79)	Unrevised model from DYNASIM2, considers value of postponing retirement one year
Disability	PSID (1969-72)	Separate entry/exit equations; includes socio-economic differences
Pensions	BLS; SCF (1990-93); SIPP	Uses SIPP self-reports on defined contribution plans; defined benefit replacement rates vary by occupation, years of service, final salary, and retirement age, including reductions for job changes; defined contribution employer match rates vary by worker contribution rates
Wealth	PSID (1984-94); SIPP	4 random-effects models for ownership/value given ownership separately for housing and non-housing wealth; additional models for spenddown after first OASDI receipt; key predictors include age, race, marital status, family size, birth cohort, dual-earner status, pension coverage, recent earnings
OASDI Benefit Calculator		Calculator used in these analyses incorporates the earnings test and parenting benefits, but does not allow men to collect spouse or survivor benefits

Abbreviations: BLS: Bureau of Labor Statistics; CPS: Current Population Survey; NLMS: National Longitudinal Mortality Study; NLSY: National Longitudinal Survey of Youth; OACT: Intermediate assumptions of the OASDI Trustees; PSID: Panel Study of Income Dynamics; RHS: Retirement History Survey; SCF: Survey of Consumer Finances; VS: Vital Statistics