

# Social Security Reform: Evaluating Current Proposals

## Latest Results of the EBRI-SSASIM2 Policy Simulation Model

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# Issue Brief

- The present Social Security program has been shown to be financially unsustainable in the future without modification to the current program. The purpose of this *Issue Brief*, EBRI's fourth in a series on Social Security reform, is threefold: to illustrate new features of the EBRI-SSASIM2 policy simulation model not available in earlier EBRI publications, to expand quantitative analysis to specific proposals, and to evaluate the uncertainty involved in proposals that rely on equity investment.
- This analysis compares the Gregg/Breaux-Kolbe/Stenholm (GB-KS) and Moynihan/Kerrey proposals with three generic or "traditional" reforms: increasing taxes, reducing benefits, and/or increasing the retirement age. Both proposals would create individual accounts by "carving out" funds from current Social Security payroll taxes.
- This analysis also examines other proposed changes that would "add on" to existing Social Security funds through the use of general revenue transfers and/or investment in the equities market. President Clinton has proposed a general revenue transfer and the collective investment of some of the OASDI trust fund assets in equities. Reps. Archer and Shaw have proposed a general revenue tax credit to establish individual accounts that would be invested partially in the equities markets.
- When comparing Social Security reform proposals that would specifically alter benefit levels, the Moynihan/Kerrey bill compares quite favorably with the other proposals in both benefit levels and payback ratios, when individuals elect to use the individual account option. In contrast, the GB-KS bills do not compare quite as favorably for their benefit levels, but do compare favorably in terms of payback ratios.
- An important comparison in these bills is the administrative costs of managing the individual accounts, since benefits can be lowered by up to 23 percent when going from the assumed low to high administrative costs. Moreover, allowing individuals to decide whether to save the 2 percent of their OASDI taxable income or to receive higher take-home pay, as would be allowed in Moynihan/Kerrey, could lead to substantial differences in ultimate retirement income.
- Allowing for individual investment choices and using actual 401(k) participant allocation data, as opposed to an assumed average allocation for everyone, results in substantial differences in account balances. The Archer/Shaw approach mandates a 60 percent/40 percent equity/bond split specifically to avoid the variations in returns that arise from individual investment allocation decisions.
- Although there are greater chances for higher returns for equity investment in the president's proposal, there are also greater chances for worse outcomes. This is also true for other reforms that would invest Social Security assets in equities.

Craig Copeland and Dallas L. Salisbury of EBRI and Jack VanDerhei of Temple University wrote this *Issue Brief* with assistance from the Institute's research and editorial staffs. Any views expressed in this article are those of the authors and should not be ascribed to the officers, trustees, members, or other sponsors of EBRI, EBRI-ERF, or their staffs. Neither EBRI nor EBRI-ERF lobbies or takes positions on specific policy proposals. EBRI invites comment on this research.

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## Introduction

There has been much debate over the necessity to reform Social Security to ensure its long-range

financial stability. Social Security is the largest entitlement program in the United States and directly affects 96 percent of the American work force and their employers every pay period; not surprisingly, the president and congressional leaders have all said at one time or another that reforming Social Security is a national priority. Consequently, numerous proposals have been introduced in an attempt to maintain Social Security benefits for generations to come.

It is critical to the achievement of that goal that thorough evaluation be given to all proposals under consideration, to ensure that legislators understand the consequences of any changes they make to such a popular and important program. The EBRI-SSASIM2 Policy Simulation Model is uniquely able to provide comparative analysis of proposals for Social Security reform under random (dynamic) outcomes on the future growth of the economy and on returns in both the equity and bond markets, rather than relying on deterministic (static) predictions of the future.

The extent of the Social Security program's financial problems has been well established. Based on the most recent (1999) Social Security Administration Trustees' Report, the Social Security trust funds will remain solvent until 2034, and—of more immediate consequence to the federal budget—the trustees project that in 2013 benefit payments will begin to exceed Social Security payroll tax revenues. Overall, a 2.07 percentage point increase in Federal Insurance Contributions Act (FICA) taxes would keep Social Security solvent for the next 75 years, according to trustee estimates.

Several alternatives have been proposed to solve these long-term financing problems. The 1994–96 Advisory Council on Social Security developed two basic approaches.<sup>1</sup> One of these would involve collective

investment of trust fund assets in the private sector.<sup>2</sup> The second approach would involve either a “carve out” of some of the current payroll tax that pays for the existing (defined benefit-type) retirement benefits, and transferring it to an individual account (defined contribution-type) retirement program, or an “add-on” individual accounts component, which would be financed by additional taxes or contributions.

In an attempt to provide a framework for analyzing and comparing various Social Security reform alternatives, EBRI's first *Issue Brief* in this series, which appeared in 1997,<sup>3</sup> developed a list of 11 broad policy outcome considerations: (1) adequacy; (2) equity; (3) monetary costs; (4) other economic effects; (5) effects on the rest of the U.S. retirement system; (6) governmental effects; (7) administrative effects; (8) political effects; (9) social effects (or, nonmonetary cost considerations); (10) protection against uncertainties; and, finally, (11) the determination of the best policy by weighing each of the aforementioned factors. It also provided a discussion of the relative effectiveness of the various metrics available to measure the potential reform alternatives with respect to these considerations.

As the policy debate continued to evolve, it was clear that there was a need for a model that could simulate both the stochastic (random) nature of the returns resulting from investments in the equity market and the macroeconomic impact expected from the various proposed structural reforms. Largely in response to this void, EBRI's second *Issue Brief* in this series, which appeared in March 1998,<sup>4</sup> provided an early indication

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<sup>1</sup> For a complete description of these proposals as well as several others, see Olsen (1996).

<sup>2</sup> This concept has evoked concerns over political interference from some; however, recent studies by Wilshire Associates (see [www.calpers.org/whatshap/hottopic/w-study.htm](http://www.calpers.org/whatshap/hottopic/w-study.htm)) and Cost Effectiveness Measurement Inc. (see [www.calpers.org/whatshap/hottopic/cem-study.htm](http://www.calpers.org/whatshap/hottopic/cem-study.htm)) suggest that state and local pension plans obtain rates of return commensurate with those gained by private pension plans.

<sup>3</sup> See Olsen, VanDerhei, and Salisbury (1997).

<sup>4</sup> See Olsen, VanDerhei, Salisbury, and Holmer (1998).

*One key concern with individual account reforms is their potentially high administrative costs, compared with the current system.*

of our ability to model a generic carve-out approach to Social Security reform.

The results were based on the EBRI-SSASIM2 Model, created with the Policy Simulation Group in consultation with policy experts from the fields of finance, economics, and actuarial science who hold differing views on how Social Security should be reformed.<sup>5</sup>

Using similar assumptions and running the model in deterministic mode, the EBRI model is able to closely replicate the program cost and benefit projections calculated by the Social Security Office of the Actuary.<sup>6</sup> Furthermore, the model has several additional features, such as allowing for the modeling of the complex interrelationships between the Social Security program and the broader U.S. economy as a whole, and for analysis of the uncertainty of returns in the equity market, growth in the economy, and other important macroeconomic factors. This model also contains realistic gender/age earnings profiles that allow for better estimates of the returns to individual accounts.<sup>7</sup>

After the March 1998 *Issue Brief* was published, several legislative proposals were introduced that provided specific applications of the generic carve-out approach EBRI modeled. One example of this was legislation introduced in 1998 by Sens. John Breaux (D-LA) and Judd Gregg (R-NH) and Reps. Jim Kolbe (R-AZ) and Charles Stenholm (D-TX) (referred to hereafter as Gregg/Breaux-Kolbe/Stenholm or GB-KS). This proposal would carve out 2 percentage points of the FICA payroll taxes and transfer that tax revenue into mandatory private retirement accounts. The authors of this proposal were drafting revisions at this writing (May 1999); this analysis examines GB-KS as introduced in 1998 as S. 2313 and H.R. 4256 (see Appendix A for more detail).

A somewhat similar approach was introduced by Sens. Daniel Patrick Moynihan (D-NY) and John Kerrey (D-NE) (this has recently been reintroduced in the 106th Congress as S. 21, The Social Security Solvency Act of 1999). This proposal attempts to eliminate the current surplus in the Old-Age, Survivors and Disability Insur-

ance (OASDI) trust funds and returns Social Security to pay-as-

you-go financing by implementing a 2 percentage point reduction in payroll taxes. The employee share of the rebate (1 percent of taxable payroll) could be used to establish voluntary investment accounts, which could be maintained either as individual retirement accounts or as accounts held in a new Voluntary Investment Fund, similar to the federal Thrift Savings Plan. Employers would be required to use their 1 percent share of the payroll tax cut to make matching contributions to the voluntary investment accounts of participating employees, and could do so either through an employer-operated plan or the federal fund (see Appendix B for more detail).

One key concern with individual account reforms is their potentially high administrative costs, compared with the current system. EBRI's third *Issue Brief* in this series, published in November 1998,<sup>8</sup> focused on the administrative feasibility of individual accounts. This study served as a backdrop to the EBRI December 1998 policy forum, "Beyond Ideology: Are Individual Social Security Accounts Feasible?" Nearly 300 leaders representing the private and public sectors and the news media gathered at this event to examine the issues surrounding individual Social Security accounts. The

<sup>5</sup> The EBRI-SSASIM2 model has also been licensed for use by the U.S. Treasury Department, the Social Security Administration, the Office of Management and Budget, the General Accounting Office, and other entities.

<sup>6</sup> For more information on cross-validity testing of the model, see Holmer (1996), pp. 79-83. When the model is run in deterministic mode, assumptions about the future outcomes of the economy are fixed and predetermined. This mode is generally used only to benchmark the model against other models, such as that used by the Social Security actuaries.

<sup>7</sup> This type of analysis is important because many models assume that individuals make the same overall economywide average wage for their entire working years. Empirical research has shown instead that, in most cases, individuals' income is lower when they start out and increases until near retirement, when income begins to decrease again. Thus, smaller amounts of individual account balances would be able to take advantage of the extra years of compounding in this model relative to other models. Consequently, smaller account balance accumulations are predicted in this model to match the observed true earnings patterns.

<sup>8</sup> Olsen and Salisbury (1998).

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papers presented at the forum explored in detail the difficult administrative issues raised by individual Social Security accounts.<sup>9</sup>

Regardless of one's assessment of the political feasibility of adopting and implementing an individual account system, there appears to be overwhelming concern that this type of reform not be structured in a manner that imposes excessive administrative burdens on small employers. One individual account administrative option is the payroll deduction. A form of this method is currently used to transmit taxes to the Social Security program, and many proponents of universal individual account initiatives have envisioned some form of this administrative system. The options for administering these accounts through payroll deductions range from designs that would closely mimic 401(k) plan administration to others that would continue to use today's payroll tax deposit and wage reporting system for all Social Security contributions. Thus, in some cases, the use of payroll deductions to administer individual accounts would obligate employers to act as liaisons between workers and investment provider(s) in terms of sending account contributions and/or communicating workers' investment decisions.

In an attempt to gauge the attitudes of those most directly affected by these proposals, EBRI commissioned a 1998 survey of 500 small businesses on their attitudes and knowledge of the administration of individual accounts. The survey, conducted by Mathew Greenwald & Associates and published in the April 1999 issue of *EBRI Notes*,<sup>10</sup> revealed that a majority of small-business decision makers were unaware that they may have to help administer these accounts. When asked whether they would be willing to support an individual account Social Security reform under different administrative scenarios, decision makers' opinions varied widely. Many who favored individual accounts indicated that they would be willing to spend relatively small amounts or nothing at all on administration and still support this type of reform, while an equal portion said they would be willing to spend upwards of \$1,000

annually in administrative costs to support it.

Recent additions to the growing list of Social Security reform proposals may leave observers wondering whether successive iterations of individual account plans are converging. In addition to arguing the merits of a system of private retirement accounts carved out of the current system—versus a system where the government invests Social Security trust fund assets collectively to increase the rate of return—recent debate has added the idea of general revenue financing. For example, in his State of the Union address in January 1999, President Clinton revealed the broad outline of a reform proposal in which a portion of the projected federal budget surplus would be transferred to the Social Security trust funds (see Appendix C for more detail). This proposal, which includes some equity funding for the trust fund, also includes a broad outline for a government-matched savings incentive program dubbed the Universal Savings Account (USA).<sup>11</sup>

The most recent proposal (not yet introduced as legislation at this writing) is the Social Security Guarantee Plan, sponsored by Reps. Bill Archer (R-TX) and E. Clay Shaw (R-FL). This proposal (see Appendix D for more detail) would create individual Social Security Guarantee Accounts (SSGAs) for all workers participating in the Social Security program. The accounts would be funded with a refundable income tax credit of 2 percent of OASDI taxable earnings. Under this proposal, individuals would have no control over how their portfolio

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<sup>9</sup> Salisbury (1999).

<sup>10</sup> Olsen and Salisbury (1999).

<sup>11</sup> In March 1999, EBRI analyzed the potential cost of the USA proposal as well as the potential impact on private 401(k) plans, assuming no coordination between the government and private plans. For details of this cost analysis, see "Social Security's Goals and Criteria for Assessing Reforms," Statement of Dallas L. Salisbury, President & CEO, Employee Benefit Research Institute, Committee on Ways and Means, Subcommittee on Social Security, U.S. House of Representatives, March 25, 1999 (available at [www.ebri.org/testimony/t118.htm](http://www.ebri.org/testimony/t118.htm)). In April 1999, a detailed proposal was released that explicitly provided some allowance for the potential average deferral percentage (ADP) problems that might have occurred without coordination between USA and private 401(k) plans.

lio is invested; instead, assets would be invested with a mandatory 60/40 split between stocks and bonds.<sup>12</sup> The 60/40 split was selected because, given individual control, some workers would have a portfolio insufficiently aggressive<sup>13</sup> to produce the 5.35 percent annual real rate of return assumed under Archer/Shaw.<sup>14</sup> Benefits paid by the OASDI program would be the higher of benefits scheduled under current law or the scheduled SSGA withdrawal rate based on a life-annuity calculation.<sup>15</sup>

The purpose of this *Issue Brief*, EBRI's fourth in the series on Social Security reform, is twofold:

1. New features of the model, not available in earlier EBRI publications, allow for an analysis of additional birth cohorts. Furthermore, survivor benefits and widow benefits can now be analyzed for the different reform proposals.
2. Quantitative analysis is provided on each of the four specific proposals mentioned above. The analysis of two of the proposals (GB-KS and Moynihan/Kerrey) includes comparisons of benefits, payback ratios, and survivor and widow benefits. The final two proposals (President Clinton's and Archer/Shaw) do not actually modify the existing benefit structure per se; therefore, EBRI's analysis of this proposal is limited to general revenue transfers and the uncertainty of equity market returns.

## Comparison of Reforms

The present Social Security program has been shown to be financially unsustainable in the future without

modification to the current program. Consequently, the GB-KS and Moynihan/Kerrey proposals are compared with three generic reforms that would provide financial stability. These three generic reforms contain what are called "traditional" reforms: increasing taxes, reducing benefits, and/or increasing the retirement age. Both of these Senate proposals would involve a 2 percent carve-

out individual account, although in the Moynihan/Kerrey bill, individual account use would be optional.<sup>16</sup> "Carve out" refers to the process of taking 2 percentage points out of the already-established level of Social Security payroll taxes, instead of an "add-on" contributions to a new individual account in addition to the payroll tax.<sup>17</sup>

## Generic Reforms

The first generic reform is "raising taxes only" (referred to here as RTO), under which payroll taxes are raised enough to fully fund current-law benefits. This involves gradually raising the Old-Age and Survivors Insurance (OASI) tax rate from 10.6 percent in the year 2000 to 16.4 percent in the year 2060.<sup>18</sup> "Reducing benefits only" (referred to here as RBO) is the second generic reform and is just the opposite of raising taxes, as benefits are reduced gradually to allow current-law taxes to fully fund the new lower benefits. This reform gradually reduces benefits until they are approximately 28 percent lower than under current law.

<sup>12</sup> Goss (1999a).

<sup>13</sup> In a study of more than 6.5 million 401(k) participants, VanDerhei, Galer, Quick, and Rea (1999) found a substantial percentage of the participants had zero exposure to diversified equity funds. Overall, 30.6 percent of the participants had none of their account balances invested in diversified equity funds. This percentage varied from a low of 28.3 percent for participants in their 20s to 46.2 percent for those in their 60s. Slightly more than one-half of those with no investments in diversified equities had at least some of their 401(k) account balance invested in either balanced funds and/or company stock.

<sup>14</sup> Goss (1999a).

<sup>15</sup> Goss (1999a).

<sup>16</sup> The Moynihan/Kerrey proposal does not involve a true 2 percent carve-out because it is optional and the account is not directly administered within the Social Security Administration.

<sup>17</sup> An add-on type proposal would include the Archer-Shaw bill, where general revenue surpluses are used to create individual accounts. See the section on general revenue transfers and equity investment. The president's USA account proposal could be argued to be an add-on proposal. However, it is not universal for all workers, as is the Archer-Shaw proposal.

<sup>18</sup> The disability insurance (DI) tax rate remains at 1.8 percent.

*Knowing how individuals will choose to invest when given choices is critical for evaluating any proposal with an individual account.*

The last of the generic reforms, “raising taxes/normal retirement age” (referred to here as RTNRA), is a combination of the first two. This is because raising the normal retirement age is essentially a benefit cut, since beneficiaries will receive a lower benefit when they retire at the same age as previous cohorts, or they will have to wait to a later age to receive full benefits. Under this reform, the OASI tax would gradually increase from 10.6 percent in 2000 to 14.92 percent in 2060, while the normal retirement age would increase from age 65 for those who reach 62 in 1999 by two months each year until it reaches age 67 for those who attain age 62 in 2011.<sup>19</sup> The retirement age is then indexed to longevity thereafter.

## Proposed Bills

Some of the main provisions of the GB-KS bills include increasing both the early retirement age and the normal retirement age. Furthermore, the benefit computation years<sup>20</sup> are increased, while the two higher “bend-point percentages”<sup>21</sup> for calculating benefits are scaled back. The annual cost-of-living adjustment (COLA) increase is lowered by subtracting 0.5 percentage point from the consumer price index for wage earners and clerical workers (CPI-W). Finally, 2 percentage points of current-law OASDI payroll taxes are redirected to an individual account in which individuals would be allowed to choose investment options.<sup>22</sup>

Under the Moynihan/Kerrey bill, proposed provisions include an increase in benefit computation years, a lower annual COLA increase, and a gradual increase in the normal retirement age. This bill would initially lower the OASDI payroll tax by 2 percentage points,<sup>23</sup> allowing that amount to be placed in an individual account each year at the worker’s option. The bill would later increase the OASDI payroll tax to maintain actuarial balance, but it would still allow for the 2 percent of OASDI taxable earnings to be placed in an individual account.

One of the primary rationales for creating

individual Social Security accounts is to allow participants to take advantage of the historically higher rates of return in the equities market than found in other financial markets. Consequently, knowing how individuals will choose to invest when given choices is critical for evaluating any proposal with an individual account. The EBRI/ICI Defined Contribution and Participant Behavior Research Program has collected data from over 6 million defined contribution participants, and the magnitude of these data allows reliable analysis of how individuals currently in the 401(k) market tend to allocate their assets by demographic groups such as age and gender.<sup>24</sup> The results of this research are used to predict the asset allocations of participants in comparing the Social Security reform proposals that include individual accounts.

## Cohorts

In the analysis of birth cohorts 1946–1996, each individual works full time, earning the average wage, from age 22 until retirement at age 67. Average wage earners

<sup>19</sup> This means that if an individual turns 62 in 2004, his/her normal retirement age or the age the individual would qualify for full benefits is 65 years, 10 months. Furthermore, if an individual turns 62 in 2008, his/her normal retirement age would be 66 years, 6 months.

<sup>20</sup> Currently, individuals’ retirement benefits are computed by using the highest 35 years of indexed earnings. This proposal would increase the number of computed years to 40.

<sup>21</sup> In 1999, the retirement benefit is calculated as 90 percent of the first \$505 of indexed earnings, plus 32 percent of \$506–\$3,043 of indexed earnings, plus 15 percent of the indexed earnings above \$3,043. The bend-point percentages are the different percentages (the 90, 32, and 15 percents) applied to the indexed earnings to calculate the benefits. The 32 percent bend-point percentage would be lowered to 21.36 percent, and the 15 percent bend-point percentage would be lowered to 10.01 percent under this proposal.

<sup>22</sup> See Appendix A for further information on this proposal and the others evaluated in this Issue Brief.

<sup>23</sup> As mentioned before, 1 percentage point would come out of the tax on workers, and the other 1 percentage point would come out of the tax on the employer.

<sup>24</sup> For more information on this program and results of its research, see VanDerhei, Galer, Quick, and Rea (1999).

Table 1  
**Comparison of Average Earners' Annual Real Benefits for Various Reform Proposals,  
 by Birth Cohort and Gender (1998\$)<sup>a</sup>**

	1946	1956	1966	1976	1986	1996	2006	2016	2026
Raising Taxes Only									
Male	\$17,556	\$18,806	\$19,873	\$21,956	\$24,110	\$26,487	\$31,740	\$35,164	\$38,445
Female	11,989	12,670	13,543	14,976	16,459	18,075	21,651	23,998	26,253
Reducing Benefits Only									
Male	16,215	14,762	14,244	15,718	17,252	18,928	22,647	25,055	27,381
Female	11,074	10,069	9,703	10,719	11,775	12,924	15,453	17,099	18,694
Raising Taxes/NRA <sup>b</sup>									
Male	16,906	17,516	18,948	20,300	21,620	23,012	26,690	28,682	30,886
Female	11,542	11,948	12,913	13,848	14,712	15,707	18,207	19,568	21,082
GB-KS <sup>c</sup>									
Male	15,829	15,240	15,758	17,790	19,609	20,015	23,957	25,136	26,934
Female	10,729	11,064	11,227	12,517	13,818	14,051	16,855	17,546	18,877
Moynihan/Kerry <sup>d</sup>									
Male	16,134	17,374	20,432	23,409	25,248	26,670	31,079	34,524	37,226
Female	10,749	11,298	13,096	14,976	16,175	17,089	19,893	22,118	23,896

Source: EBRI-SSASIM2 Policy Simulation Model.

<sup>a</sup>Values are the average over 1,000 scenarios.

<sup>b</sup>Normal retirement age.

<sup>c</sup>Mid-range administrative costs, Gregg/Breaux-Kolbe/Stenholm.

<sup>d</sup>With everyone electing to use the individual account option every year while working and mid-range administrative costs.

are defined in this analysis as individuals who make the same relative earnings level for their age and gender at each year of their working life.<sup>25</sup> The individual is then scheduled to die with certainty at age 86.

For the birth cohorts 2006–2026, individuals again work full time from age 22 until retirement, but they retire at age 68. This is done because GB-KS schedules the early retirement age to increase to 68 for these cohorts. Thus, if their retirement age were not increased, they would receive no benefits for their first year of retirement. Again, individuals' income is the average wage for their age/gender during all of their working years. These individuals are scheduled to die at age 87 to maintain the same number of post-retirement years as the previous cohorts.

## Benefits<sup>26</sup>

In this section, the benefits for average wage earners are compared across the five reform proposals discussed in this section. For the proposals with an individual account, the balances are valued as a real life annuity, so that the benefit levels can be compared with the benefits generated from the traditional part of Social Security and with the other reforms.<sup>27</sup> For the 1946 birth cohort, the generic reforms provide the highest level of benefits, since most of the changes in these reforms (phased-in tax increases and benefit reductions) do not affect them, whereas many of the changes in the proposed individual account bills have an immediate impact (table 1).

However, for later cohorts, the RTO reform and the Moynihan/Kerrey bill with individual accounts provide the highest level of benefits.<sup>28</sup> The RBO reform provides the lowest level of benefits, except for the 2026 cohort, when the early retirement age and normal retirement age reach their maximum under the GB-KS bills. The RTNRA reform proposal holds relatively constant in or near the median average of benefit levels.

When examining benefits across earning levels for males, the same patterns appear to emerge as those for average wage earners. The major exception is that the male high-wage earners in the Moynihan/Kerrey proposal would receive higher benefits than under RTO in the 1996 birth cohorts and later, where the individual account had sufficient time to accumulate significant

<sup>25</sup> See Olsen, VanDerhei, Salisbury, and Holmer (1998) for information on how these average earnings were calculated.

<sup>26</sup> This analysis used the 1998 Social Security Trustees Report assumption values as the baseline for simulations of 1,000 real-world scenarios. The benefits and payback ratios are the average values of these 1,000 scenarios. For further information on the assumptions of the model and the simulation process used see Olsen, VanDerhei, Salisbury, and Holmer (1998) and Holmer (1996).

<sup>27</sup> This is done because the benefits paid from Social Security are essentially a real life annuity. A monthly benefit amount is paid to each recipient, with the benefit amount adjusted annually for inflation.

<sup>28</sup> The benefits described for Moynihan/Kerrey with individual accounts are not precisely a Social Security benefit but include both the Social Security benefit and the benefit that would be generated from the individual account. This is noted to make the distinction that the individual account is not specifically part of the Social Security benefit generated under the Moynihan/Kerrey bill.



balances. However, the male average- and low-wage earners both would receive higher benefits under RTO than under Moynihan/Kerry (table 2). This leads to further support the finding that those with higher earnings are the ones who would receive the greatest benefit from individual accounts.

## Payback Ratios

The percentage of the present value of taxes paid that individuals get back in benefits is their “payback ratio.”<sup>29</sup> Starting with the 1966 birth cohort, the Moynihan/Kerrey bill has the highest payback ratio

<sup>29</sup> The concept of payback ratio was developed as part of the “money’s worth” analysis in the late 1970s. In a pay-as-you-go system, the concept is of questionable value, since one’s payroll taxes frequently pay the benefits of one’s parents, grandparents, great-grandparents, or siblings. As a result, in the absence of Social Security, one might be making direct transfers instead of the SSA program doing the transfer. Also, see Myers (1997) for further arguments against the use of payback ratios in social insurance programs.

Table 2  
Comparison of Males’ Annual Real Benefits for Various Reform Proposals, by Birth Cohort and Earnings Level (1998\$)<sup>a</sup>

	1956	1966	2006	2016
<b>Raising Taxes Only</b>				
Average earners	\$18,806	\$19,873	\$31,740	\$35,164
High earners	22,962	24,221	38,699	42,855
Low earners	10,983	11,603	18,583	20,574
<b>Reducing Benefits Only</b>				
Average earners	14,762	14,244	22,647	25,055
High earners	18,024	17,353	27,615	30,541
Low earners	8,616	8,311	13,259	14,661
<b>Increasing Taxes/NRA<sup>b</sup></b>				
Average earners	17,516	18,948	26,690	28,682
High earners	21,742	23,490	32,542	34,950
Low earners	10,394	11,257	15,626	16,784
<b>GB-KS<sup>c</sup></b>				
Average earners	15,240	15,758	23,957	25,136
High earners	19,091	20,350	31,608	33,386
Low earners	10,668	10,780	15,839	16,419
<b>Moynihan/Kerry<sup>d</sup></b>				
Average earners	17,374	20,432	31,079	34,524
High earners	22,027	26,386	40,884	45,436
Low earners	9,764	11,308	16,998	18,857

Source: EBRI-SSASIM2 Policy Simulation Model.

<sup>a</sup>Values are the average over 1,000 scenarios.

<sup>b</sup>Normal retirement age.

<sup>c</sup>Mid-range administrative costs, Gregg/Breaux-Kolbe/Stenholm.

<sup>d</sup>With everyone electing to use the individual account option every year while working and mid-range administrative costs.

(table 3). The lowest payback ratios are found in the RTO reform and RTNRA reform. While the RBO and the GB-KS bills have consistently higher payback ratios than the previous two reforms, they are still lower than

Table 3  
Comparison of Average Earners’ Payback Ratio for Various Reform Proposals, by Birth Cohort and Gender<sup>a</sup>

	1946	1956	1966	1976	1986	1996	2006	2016	2026
<b>Raising Taxes Only</b>									
Male	82.78%	86.72%	88.22%	85.67%	79.08%	73.15%	71.72%	69.78%	68.22%
Female	92.10	95.40	98.26	97.36	90.29	83.21	81.20	79.03	77.05
<b>Reducing Benefits Only</b>									
Male	76.53	68.17	65.82	69.06	69.71	70.77	74.04	74.25	74.30
Female	85.14	74.99	72.93	77.47	78.29	79.48	83.33	83.63	83.73
<b>Increasing Taxes/NRA<sup>b</sup></b>									
Male	79.73	80.76	85.30	82.37	75.63	69.21	66.28	62.60	60.31
Female	88.70	88.83	94.82	93.22	85.95	78.54	75.03	70.90	68.12
<b>GB-KS<sup>c</sup></b>									
Male	74.28	69.68	71.99	77.19	78.68	73.95	77.21	73.36	71.73
Female	82.17	81.68	83.72	89.64	91.68	85.84	90.00	84.91	83.36
<b>Moynihan/Kerry<sup>d</sup></b>									
Male	76.24	80.20	93.01	98.01	93.93	88.36	87.76	87.44	85.30
Female	82.87	84.24	97.24	103.77	99.79	93.67	92.91	92.75	90.66

Source: EBRI-SSASIM2 Policy Simulation Model.

<sup>a</sup>Values are the average over 1,000 scenarios.

<sup>b</sup>Normal retirement age.

<sup>c</sup>Mid-range administrative costs, Gregg-Breaux/Kolbe-Stenholm.

<sup>d</sup>With everyone electing to use the individual account option every year while working and mid-range administrative costs.

those in the Moynihan/Kerrey bill.

When comparing the payback ratios across earning levels for males, Moynihan/Kerry has higher ratios for male average- and high-wage earners than does GB-KS, but for low-wage earners GB-KS has higher payback ratios, particularly for those in later birth cohorts (table 4). This is due the minimum benefit provision contained in the Gregg/Breaux proposal that specifically helps increase lower-wage earners' benefits. Otherwise, the payback ratios across the different earning levels for males follow the same patterns as for average earners.

With the exception of the Moynihan/Kerrey bill, there is an explicit tradeoff between higher benefits and lower payback ratios.<sup>30</sup> Consequently, an important consideration for policymakers is that to increase benefits (in most cases), individuals are going to receive less of their taxes back as benefits. Therefore, the choice between adequacy of benefits and equity of payback ratios will be a policy issue in many Social Security reform proposals.

## Administrative Costs

In comparing the benefits of the three generic reforms with those of the two specific proposals, individual accounts were assumed to be feasible. However, the actual feasibility and the cost of such accounts vary significantly with different approaches.<sup>31</sup> The cost of administering these accounts has drawn particular attention, because the administrative costs under some approaches could be so high as to offset any higher returns from the investment in equities. An important feature of the EBRI model is its ability to incorporate the costs of administering individual accounts, including the loading factor charged when purchasing a real life annuity.

Through consultation with experts in the fields of administering 401(k) plans and the pricing of annuities, a range of costs was determined for the EBRI-SSASIM2 model simulations. The administrative

Table 4  
Comparison of Males' Payback Ratios for Various Reform Proposals, by Birth Cohort and Earning Level<sup>a</sup>

	1956	1966	2006	2016
Raising Taxes Only				
Average earners	86.72%	88.22%	71.72%	69.78%
High earners	66.37	67.59	55.07	53.58
Low earners	112.56	114.49	93.32	90.77
Reducing Benefits Only				
Average earners	68.17	65.82	74.04	74.25
High earners	52.17	50.44	56.84	57.00
Low earners	88.48	85.43	96.35	96.59
Increasing Taxes/NRA <sup>b</sup>				
Average earners	80.76	85.30	66.28	62.60
High earners	62.10	65.35	50.90	48.07
Low earners	104.81	110.70	86.25	81.43
GB-KS <sup>c</sup>				
Average earners	69.68	71.99	77.21	73.36
High earners	54.64	58.29	63.84	61.11
Low earners	108.46	110.19	114.33	107.37
Moynihan/Kerrey <sup>d</sup>				
Average earners	80.20	93.01	87.76	87.44
High earners	63.82	75.55	72.59	72.38
Low earners	100.34	114.58	106.95	106.46

Source: EBRI-SSASIM2 Policy Simulation Model.

<sup>a</sup>Values are the average over 1,000 scenarios.

<sup>b</sup>Normal retirement age.

<sup>c</sup>Mid-range administrative costs, Gregg/Breaux-Kolbe/Stenholm.

<sup>d</sup>With everyone electing to use the individual account option every year while working and mid-range administrative costs.

costs were determined to be 10 basis points (0.1 percent of assets) at the low end, 100 basis points (1 percent of assets) for the mid-range, and 200 basis points (2 percent of assets) on the high end. This number will depend on the amount of choice in investment funds, customer service accessibility, the flexibility an individual has to reallocate balances between funds, and the frequency in reporting balances, to name a few contributing factors. Obviously, the more choice and accessibility, the higher the costs will be. The annuity loading factors were determined to range from a low of 5 percent to a high of 15 percent, with a mid-range value of 10 percent.

The level of administrative costs will have a significant impact on the benefits that retirees would receive. For example, an average-wage earning male in the 1966 birth cohort would have his annual benefit lowered by about \$2,200 going from individual accounts with low administrative costs to those with high administrative costs, while an average-wage earning male in

<sup>30</sup> One provision of the Moynihan/Kerrey bill that is not reflected in the results of the model is the elimination of the current-law thresholds for taxing OASDI benefits and the taxation of Social Security benefits like that for benefits from private pensions plans. Thus, after-tax benefits for this bill would not likely look as good in comparison to the other reforms' benefits.

<sup>31</sup> For example, see Olsen and Salisbury (1998) and Salisbury (1999).

Table 5  
**Comparison of Average Earners' Annual Real Benefits for GB-KS<sup>a</sup>,  
 by Administrative Cost, Birth Cohort, and Gender (1998\$)<sup>b</sup>**

Administrative Costs	1946	1956	1966	1976	1986	1996	2006	2016	2026
Low Costs									
Male	\$15,982	\$15,778	\$16,967	\$19,812	\$21,844	\$22,342	\$26,741	\$28,224	\$30,155
Female	10,800	11,318	11,847	13,645	15,067	15,362	18,410	19,294	20,686
Mid-Range Costs									
Male	15,829	15,240	15,758	17,790	19,609	20,015	23,957	25,136	26,934
Female	10,729	11,064	11,227	12,517	13,818	14,051	16,855	17,546	18,877
High Costs									
Male	15,687	14,773	14,752	16,195	17,841	18,166	21,783	22,708	24,404
Female	10,668	10,841	10,719	11,643	12,832	13,025	15,646	16,205	17,465

Source: EBRI-SSASIM2 Policy Simulation Model.

<sup>a</sup>Gregg/Breaux-Kolbe/Stenholm.

<sup>b</sup>Values are the average over 1,000 scenarios.

the 2026 birth cohort would have his annual benefit reduced by approximately \$5,700 in high-cost accounts relative to low-cost accounts (table 5).

The impact of administrative costs across earning levels is different. For example, male low-wage earners would have their benefits reduced by up to 14 percent, male average-wage earners by up to 19 percent, and male high-wage earners by up to 23 percent, when administrative costs go from low to high (chart 1).<sup>32</sup> Therefore, anyone attempting to use a

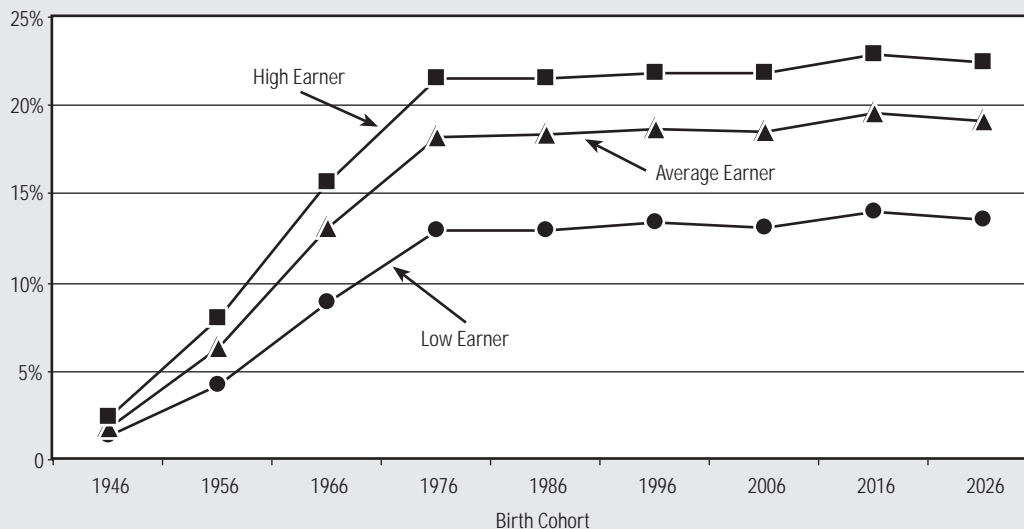
reform that contains individual accounts must recognize this impact; otherwise, some—or even all—of the expected benefit increase could instead merely pay for higher administrative costs.

## Benefits in the Moynihan/Kerrey Bill With and Without Individual Accounts

In the previous section on comparing benefits, the analysis of benefits under the Moynihan/Kerrey bill assumes that all individuals will elect to have the 2 percentage points of the OASDI payroll tax placed in an individual account for retirement every year they work. However, the bill grants the option to take higher take-

<sup>32</sup> Low earners are defined as earning 45 percent of the average gender/age wage, and high earners are defined as earning 160 percent of the average gender/age wage. This correlates with what the Social Security Administration reports as low and high earners in the annual Trustees Report.

Chart 1  
**Percentage Reduction in Males' Benefits, From Low- to High Administrative Cost, by Birth Cohort, GB-KS<sup>a</sup> Proposal**



Source: EBRI-SSASIM2 Policy Simulation Model.

<sup>a</sup>Gregg/Breaux-Kolbe/Stenholm.

Table 6  
**Comparison of Average Earners' Annual Real Benefits for Moynihan/Kerry,  
 by Individual Account Status, Birth Cohort, Gender, and Earnings (1998\$)<sup>a</sup>**

	1946	1956	1966	1976	1986	1996	2006	2016	2026
Average Earners									
With individual accounts									
male	\$16,134	\$17,374	\$20,432	\$23,409	\$25,248	\$26,670	\$31,079	\$34,524	\$37,226
female	10,749	11,298	13,096	14,976	16,175	17,089	19,893	22,118	23,896
Without individual accounts									
male	15,098	14,834	16,012	17,130	18,227	19,334	22,596	25,085	27,391
female	10,282	10,089	10,892	11,664	12,416	13,178	15,372	17,079	18,654
High Earners									
With individual accounts									
male	19,863	22,027	26,386	30,693	33,203	35,062	40,884	45,436	48,880
female	15,138	16,032	18,735	21,590	23,348	24,658	28,722	31,953	34,483
Without individual accounts									
male	18,227	18,034	19,446	20,818	22,068	23,490	27,473	30,490	33,294
female	14,376	14,112	15,230	16,307	17,363	18,420	21,509	23,886	26,091
Low Earners									
With individual accounts									
male	9,235	9,764	11,308	12,802	13,777	14,559	16,998	18,857	20,381
female	6,746	6,960	7,935	8,920	9,591	9,977	11,796	13,106	14,194
Without individual accounts									
male	8,758	8,606	9,296	9,947	10,587	11,237	13,157	14,610	15,951
female	6,533	6,411	6,919	7,407	7,874	8,362	9,754	10,831	11,826

Source: EBRI-SSASIM2 Policy Simulation Model.

<sup>a</sup>Values are the average over 1,000 scenarios.

home pay instead, which may be the choice of some beneficiaries. Unless individuals who choose the higher take-home pay increase their personal savings, they will have significantly less retirement income when they are eligible to receive benefits.

For female average-wage earners, those who choose the higher take-home pay would have approximately \$5,000 less in average annual benefits<sup>33</sup> by the time the 2026 birth cohort retires (table 6). Males with average earnings who opt not to put the 2 percent in an individual account would have approximately \$10,000 less in average annual benefits by the time the 2026 birth cohort retires. For high-wage earners, the difference could reach as high as \$15,000 annually. For lower wage earners, the differences would be less, ranging from \$1,500 to \$4,000 annually.

Consequently, the adequacy of retirement benefits may become an issue. In addition, individuals could argue that they did not understand the impact of not choosing to have saved the 2 percent in an individual account, and could claim that it is unfair that their benefit is so much lower than the combined benefit and the individual account proceeds, potentially leading to political pressure to alter benefit levels.

## Survivors' and Widows' Benefits

An often-neglected component of the Social Security program is survivors' and widows' benefits.<sup>34</sup> Survivors'

benefits include both the benefits to the children and those to the surviving spouse during the years he or she qualifies for benefits (until the youngest child reaches age 16). The children receive benefits until they reach age 19.

A new feature of the EBRI model is its ability to estimate these benefits. In order to compare the estimated benefits over the above five reform proposals, a representative couple is simulated with two children. For this analysis, the first child is born when the husband and wife are 25 years old, and the second child is born two years later. The husband then dies when he is 32 years old. Since the husband worked full time at the average age/gender earnings from age 22 until death, he fully qualifies for benefits.

In evaluating survivor benefits in the GB-KS bills, the benefits are consistently less than benefits earned in either the RTO or the RTNRA proposals, while the benefits earned in the Moynihan/Kerrey bill with individual accounts are consistently greater than the RTO and RTNRA reforms (table 7). However, the RBO benefits are substantially less than the benefits of the GB-KS bills. For widows' benefits, Moynihan/Kerrey and

<sup>33</sup> Benefits are inclusive of the individual account proceeds, which are not technically a part of the Social Security benefits under Moynihan/Kerrey.

<sup>34</sup> Another often-neglected component of the Social Security program is the disability benefit. However, at this time the model is unable to provide estimates of disability benefits.

Table 7  
**Comparison of Average Earners' Annual Real Benefits  
 for Survivors and Widows: Various Reform Proposals,  
 by Birth Cohort (1998\$)<sup>a</sup>**

	1976	1986	1996	2006	2016	2026
<b>Raising Taxes Only</b>						
Survivor	\$12,233	\$13,757	\$15,514	\$17,496	\$19,619	\$21,824
Widow	17,323	19,050	20,889	23,287	25,624	27,960
<b>Reducing Benefits Only</b>						
Survivor	10,455	9,134	9,002	10,302	11,582	12,954
Widow	13,696	13,909	14,935	16,622	18,268	19,914
<b>Raising Taxes/NRA<sup>b</sup></b>						
Survivor	12,202	13,696	15,443	17,099	19,182	21,356
Widow	14,823	16,093	17,292	19,528	21,092	22,941
<b>GB-KS<sup>c</sup></b>						
Survivor	11,491	10,770	12,304	13,665	16,032	17,719
Widow	15,413	12,355	18,400	20,716	23,033	24,699
<b>Moynihan/Kerry<sup>d</sup></b>						
Survivor	14,986	16,662	18,613	20,157	22,240	24,384
Widow	15,697	17,140	18,166	21,072	23,409	25,288

Source: EBRI-SSASIM2 Policy Simulation Model.

<sup>a</sup>Values are the average over 1,000 scenarios.

<sup>b</sup>Normal retirement age.

<sup>c</sup>Mid-range administrative costs, Gregg/Breaux-Kolbe/Stenholm.

<sup>d</sup>With everyone electing to use the individual account option every year while working and mid-range administrative costs.

GB-KS have similar benefits across the various birth cohorts that are higher than the RBO and the RTNRA benefits, but lower than the RTO benefits.

## Revenue Transfers

Other proposed changes to the Social Security program have not involved "traditional" reforms, but have instead

looked at ways to increase the financial stability of Social Security through the use of the general revenue transfers and/or investment in the equities market. The president has proposed a general revenue transfer and the collective investment of some of the OASDI trust fund assets into equities. Reps. Archer and Shaw have proposed a general revenue tax credit to establish individual accounts that would be invested partially in the equities markets. Others have suggested that future OASDI program revenue surpluses should be invested in equities through the establishment of individual accounts.

### The President's Proposal

President Clinton outlined a proposal in his 1999 State of the Union address to help shore up the finances of Social Security. His proposal includes a transfer of funds

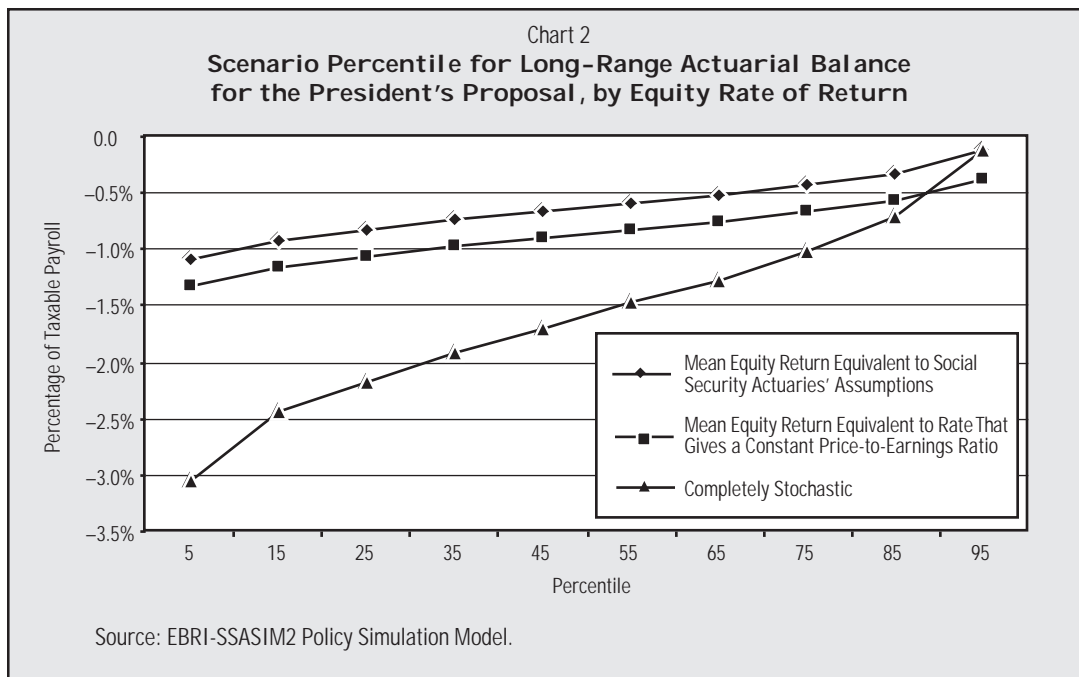
from the General Fund of the Treasury of the United States to the OASDI trust funds each year from 2000 through 2014. In addition, a portion of the transfer would be used to purchase stocks until 14.6 percent of the OASDI trust fund assets are in equities. Thereafter, this percentage of assets in the equity market would be maintained at 14.6 percent.

The Social Security Administration actuaries evaluated the president's proposal using the 1998 Trustees Report assumptions, and found that with equity investment the 75-year actuarial balance is improved from -2.19 percent of payroll to -0.76 percent of payroll.<sup>35</sup> The EBRI-SSASIM2 model is able to closely replicate this result for the long-range actuarial balance. However, some critics have pointed out that the rate of return on equity assumed by the Social Security actuaries is inconsistent with their projected growth in the economy, and therefore the price-to-earnings ratio in the stock market would have to increase continually to record highs to meet the projections.<sup>36</sup> In addition, the equity return in the actuaries' projection is deterministic at the same level for each year.

Consequently, using the stochastic capability of the EBRI model, the president's proposal is first evaluated by allowing for uncertainty in equity return only,

<sup>35</sup> See Goss (1999b).

<sup>36</sup> For example, see Baker (1997).



with the mean equity return maintained at the Social Security actuaries' assumed level over each of 1,000 real-world scenarios run by the model. Second, the proposal is evaluated allowing again for only the equity return to vary, but in this case the mean rate of return is set to equal the rate of return that will have the price-to-earnings ratio in the stock market remain constant at its 1992 level over each scenario.<sup>37</sup> The Social Security actuaries assume a nominal equity rate of return of 10.49 percent annually, while the equity rate of return that would keep the price-to-earnings ratio at its 1992 level and maintain dividend and corporate earnings growth equivalent to gross domestic product (GDP) growth is a nominal rate of 8.12 percent annually. Lastly, the model is allowed to be fully stochastic over all the potential variables affecting the economy and Social Security.

When evaluating equity return only at the Social Security actuaries' rate, the mean long-range actuarial balance is -0.62 percent of taxable payroll over the 1,000 scenarios, with the 5th percentile of scenarios generating an actuarial balance of -1.08 percent and a 95th percentile of -0.13 percent (chart 2). The second case, where equity mean return is lower, the mean long-range actuarial balance is -0.86 percent of taxable payroll. The 5th percentile in this case falls to -1.32 percent of taxable payroll and the 95th percentile decreases to -0.37 percent. The average long-range actuarial balance

for the fully stochastic runs is -1.58 percent of taxable payroll. This case has much greater variation in the actuarial balance, since all the macroeconomic variables are stochastic. The range of actuarial balances extends from -3.05 percent of taxable payroll at the 5th percentile to -0.13 percent of taxable payroll at the 95th percentile.

When the EBRI model allows the equity rate of return to vary, the president's proposal is shown to likely have a significant positive impact on the long-range actuarial balance; however, the proposal would not achieve long-range actuarial balance. Thus, if long-range actuarial balance is the goal, other reforms would be needed for Social Security to reach this goal. Although there is still a high probability of increasing long-range actuarial balance when running the model in fully stochastic mode, approximately 25 percent of the scenarios reveal a long-range actuarial balance that is worse than the deterministic actuarial balance without any reforms. Consequently, in the real world—where everything is variable—the president's proposal appears to have much greater risk in improving the long range actuarial balance than it appears to have in the deterministic (static) world assumed by the Social Security Trustees' projections.

## Archer/Shaw Proposal

Another Social Security reform proposal that involves using the general revenue budget surplus and some form of equity investment was recently introduced in the House of Representatives by Rep. Bill Archer (R-TX) and

<sup>37</sup> The 1992 price-to-earnings ratio for the New York Stock Exchange (NYSE) Composite Index was 22.7 as of the end of the year.

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Rep. E. Clay Shaw, Jr. (R-FL). This proposal would use 2 percent of OASDI taxable payroll from the general revenue surplus to create individual Social Security accounts for each worker. The balances accumulated in these accounts would be used to purchase an annuity when the individual qualifies for benefits. The value of the annuity would then offset an equivalent amount of the individual's current-law Social Security benefits.<sup>38</sup> However, in cases where the individual account balance would pay a benefit larger than current-law benefit, the individual would be entitled to the higher benefit. In addition, if an individual dies before becoming eligible for benefits and none of the individual's dependents are eligible for benefits based on his/her earnings, the account balance would go to the individual's estate; however, these situations would be quite rare. Thus, individuals would not have true ownership rights over their account balances, but the Social Security program would be able to take advantage of the historically higher rates of return that equities and corporate bonds have achieved.

The EBRI-SSASIM2 is approximately able to model this type of proposal in fully stochastic (random) mode. Rather than assuming the creation of individual accounts, the model assumes that a general revenue transfer equal to 2 percent of taxable payroll is made annually to the OASDI trust funds.<sup>39</sup> However, the EBRI model does not separate the total trust fund assets by source (i.e., payroll tax revenue versus general tax revenue). Therefore, an assumption must be made to determine the asset allocation of the trust funds between the special-issue Treasury bonds and among other investment options.

This assumption results in the necessity of another assumption for an uncertainty that is not accounted for in the model: the exhaustion date of the special-issue Treasury bonds in the trust funds. The exhaustion of special-issue Treasury bonds is assumed, since most of the baby boomers would not have sufficient time until retirement to accumulate large enough balances to pay for their current-law benefits for all their retirement years. Therefore, since OASDI payroll taxes are held constant in this proposal, the benefits to the baby boomers would have to be made up from the surplus payroll tax revenue that is invested in the special-issue Treasury bonds.

Consequently, to account for the exhaustion of the special-issue Treasury bonds, the EBRI model schedules the asset allocation of total trust fund balances to gradually increase from 0 percent to 60 percent for equities and from 0 percent to 40 percent for corporate bonds, and to gradually decrease from 100 percent to 0 percent for special-issue Treasury bonds.<sup>40</sup> Since it is impossible to predict any specific year for exhaustion of the bonds due to the varying possibilities of the rates of investment returns, six years—2034, 2039, 2044, 2049, 2054, and 2059—are chosen to demonstrate any potential impact of when the special-issue Treasury bonds are exhausted on the long-range actuarial balance.

The year 2034 is chosen as the first year of exhaustion, since this is the year predicted by the Social Security actuaries for the depletion of the trust funds without the addition of the individual accounts. This also could represent a best-case scenario, since all of the Social Security revenue transfers to the equity markets would have the maximum time to compound. However,

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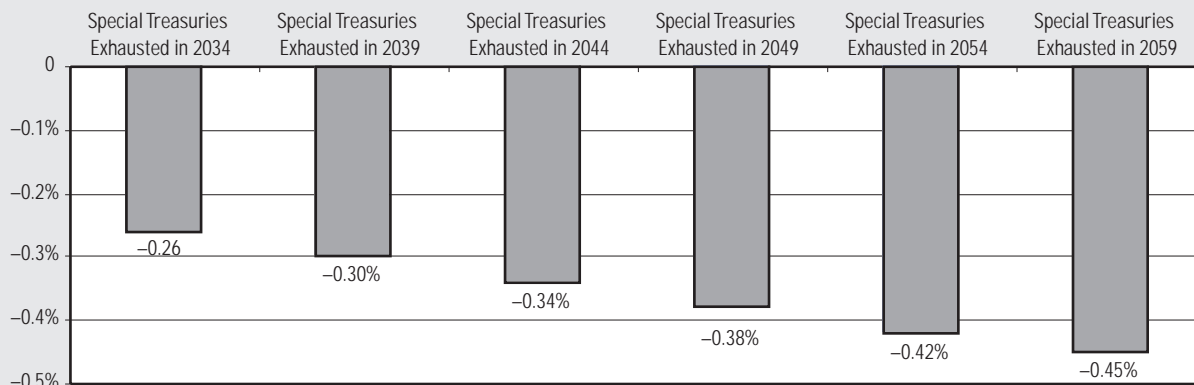
<sup>38</sup> For example, if an individual's monthly benefit is determined to be \$1,000 under current law and the balance in the individual's account could purchase an annuity with a \$700 monthly benefit, the benefit paid from the Social Security payroll tax revenue would be equal to \$300, maintaining the current-law benefit.

<sup>39</sup> This is a reasonable assumption because in most cases the entire account balance would be transferred to the Social Security program anyway when benefits are paid. In addition, the investment allocation is established in the

bill, so over all investors the average yield should be close to what the collective investment of the funds would receive.

<sup>40</sup> The trust fund's final asset allocation is a result of a provision in the Archer/Shaw proposal that says that the individual accounts by law must be invested in 60 percent equities and 40 percent corporate bonds. The specific schedule is each year's allocation would increase (equities and bonds) or decrease (special-issue Treasury bonds) by the same amount until the final allocation is reached.

Chart 3  
Average<sup>a</sup> Long-Range Actuarial Balance for 2 Percent General Revenue Transfers,  
by Exhaustion Date of Special-Issue Treasuries



Source: EBRI-SSASIM2 Policy Simulation Model.  
<sup>a</sup>Average over 1,000 stochastic scenarios.

2034 would not necessarily be the first year for exhaustion of the special-issue Treasury bonds, particularly if the economy were to go into a recession. Yet, it seems a reasonable place to start, because some of the account balances would be transferred as early as 2002, likely causing the exhaustion period to be later than 2034. The final assumption is that no account balances are “leaked out” of the system.<sup>41</sup>

An important element of this stochastic modeling is that a specific (static) rate of return does not have to be chosen as the rate for every year into the future. As discussed earlier, this avoids the problem of the predicted rate of return leading to price-to-earnings ratios that will increase to infinity. The EBRI model is able to adjust the average equity return to be consistent with the average increase in the economy, on a dynamic basis. Consequently, economic growth rates will be consistent with the long-run equity rate of return, leading to more reasonable estimates of actual future equity returns.

When this type of reform is modeled using deterministic outcomes (static analysis), the actuarial balance is positive, but in the stochastic (dynamic) mode the average long-range actuarial balance ranges from -0.26 percent of taxable payroll to -0.45 percent of

taxable payroll (chart 3).<sup>42</sup> This result occurs because, over the model’s 1,000 real-world scenarios that have varying economic outcomes over the 75 years that the long-range actuarial balance is measured, there will be periods when the rates of return will be low and potentially negative, therefore reducing potential future accumulation of assets. In the best-case scenario allowing for random outcomes, at most about 35 percent result in a positive actuarial balance (chart 4). In the worst-case scenario, only about 25 percent of the outcomes result in a positive actuarial balance.<sup>43</sup>

Therefore, there is little likelihood that legislators would be able to use general revenue surpluses to create the 2 percent tax credit accounts, eliminate the earnings test, reduce future payroll taxes, and still achieve actuarial balance. Thus, when making policy decisions, individuals must be aware of this uncertainty and the probability that legislation would likely have a greatly different outcome than predicted.

## Other Options for Investment in Equities

Another idea discussed for Social Security reform that tries to take advantage of the higher returns historically

<sup>41</sup> This is not an unreasonable assumption, since in the Archer-Shaw proposal both parents must die before the transfer of assets to heirs may begin. In addition, the number of individuals accumulating more in their individual account than is necessary to fund their current-law benefits would be quite small. Thus, this represents the best-case scenario in terms of actuarial balance.

<sup>42</sup> An important note is that these results were generated by using baseline assumption values from the 1998 Social Security Trustees Report. Thus, if the 1999 Trustees Report values were used in this analysis, the resulting actuarial balances would likely be slightly higher. However, the difference

would not change the overall results, since the actuarial balance increased by just 0.12 percent of taxable payroll from the 1998 report to the 1999 report. For further information on the model’s use of baseline assumptions, see Olsen, VanDerhei, Salisbury, and Holmer (1998).

<sup>43</sup> Administratively, it does not really matter when the exhaustion occurs, as assets can be invested in the percentages specified from whatever source they are derived. However, politically, if bonds were exhausted before the prescribed date, investing the payroll taxes directly in equities would become a significant issue.



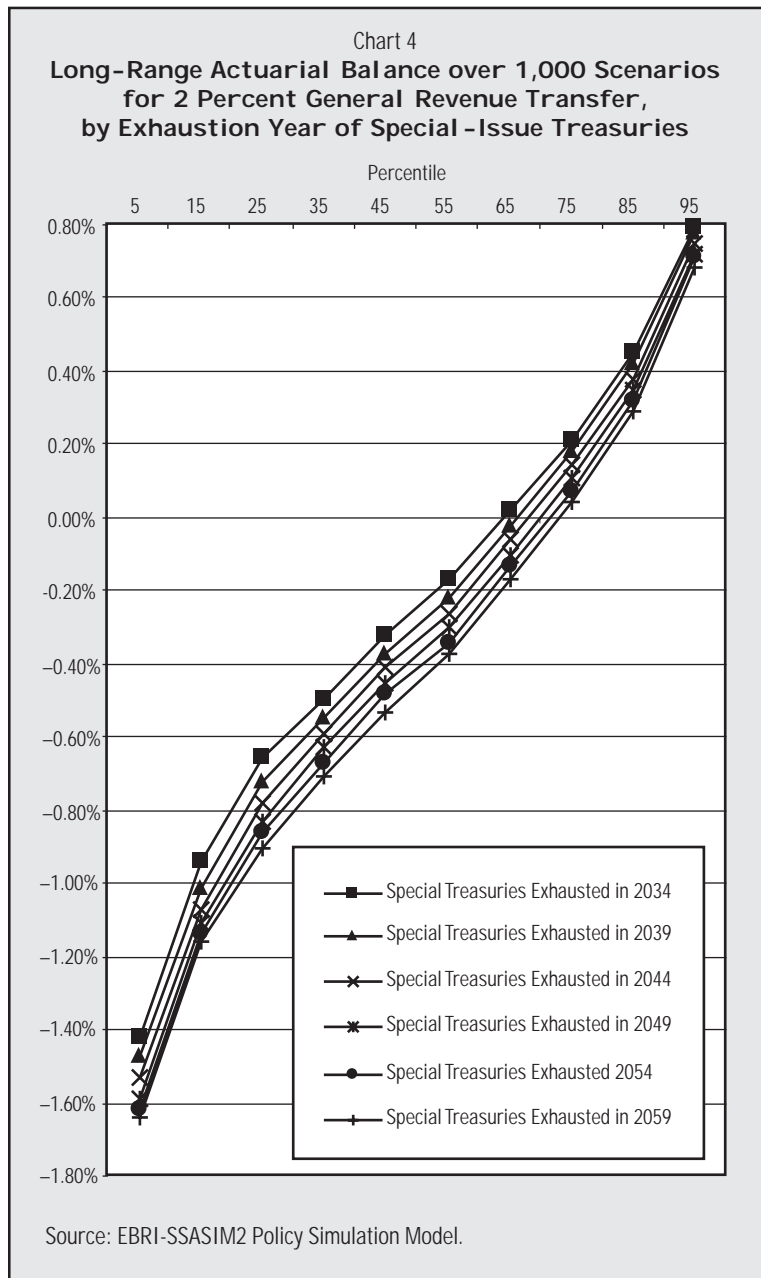
found in the equities market is the allocation of the OASDI program annual surplus to individual accounts. Some portion of the individual account would be used to offset current-law benefits, thereby allowing the Social Security program to take advantage of the historically higher returns in equity investments through the individual's investment in equities.

The EBRI-SSASIM2 Model is not able to exactly model this type of benefit offset, but it is able to simulate a best-case scenario proxy for this type of reform. This proxy involves the

collective investment of the OASDI program surplus in the equity market, where all the additional revenue from any higher rates of return would accrue in the Social Security trust fund.<sup>44</sup>

This collective investment is modeled in two ways. First, only the annual tax revenue surplus from the OASDI program is invested. Second, the investment amount includes the annual tax revenue surplus plus the annual interest from the existing trust fund assets invested in special-issue Treasury bonds. Using actuarial assumptions from the 1998 Trustees Report, the first

<sup>44</sup> This proxy assumes no interference in investing in the equities markets and also would have significantly lower costs than the costs of administering individual accounts. The invested funds are assumed to make the overall rate of return in the equity market, and dividends are reinvested.



case (only the tax revenue surplus being invested) would result in an improvement in the long-range actuarial balance to -0.08 percent of taxable payroll, when run in deterministic mode. For the second case (total annual program surplus being invested), the actuarial balance becomes 0.46 percent of taxable payroll, when run in deterministic mode (chart 5).

However, the real world is random (dynamic), not deterministic (static). Therefore, the model was run in stochastic mode over 1,000 real-world scenarios to allow for ups and downs in

the economy as have historically occurred. In this mode, the first case (tax revenue surplus only) yielded an average long-range actuarial balance over the 1,000 scenarios of -0.97 per-cent of taxable payroll, while the second case (total annual program surplus) average balance was -0.70 per-cent. In some scenarios the actuarial balance was positive, but 90 percent of the first-case scenarios (tax revenue surplus only) and 85 percent of the second-case scenarios (total annual revenue surplus) resulted in a negative long-range actuarial balance (chart 6).

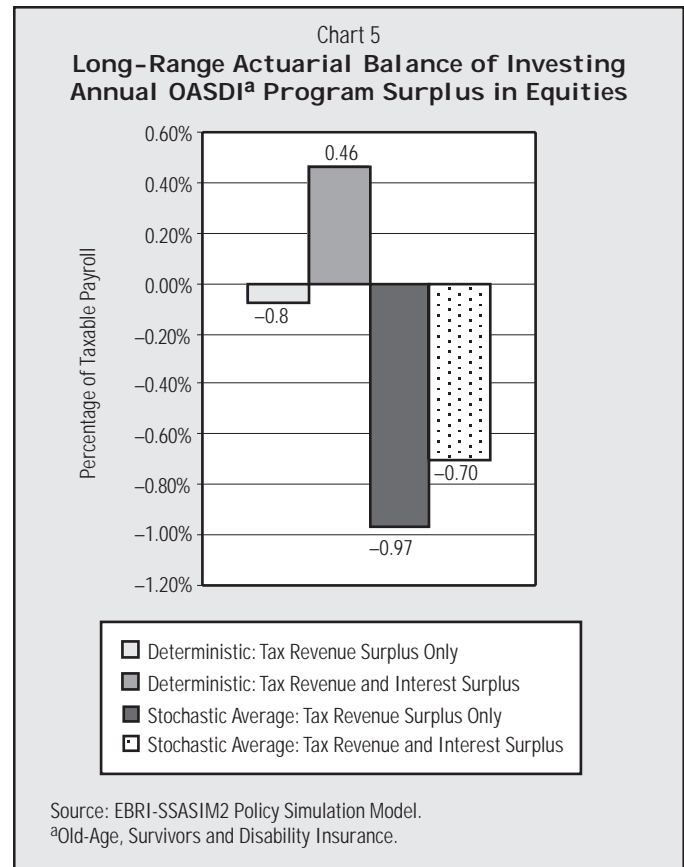
The collective investment of the annual surplus would be a best-case scenario in terms of actuarial balance for three reasons. First, the surplus is entirely invested in equities, whereas if individuals were allowed

investment choice, some workers would choose bonds that would likely yield a lower return. Second, the annual percentage of assets invested in equities was scheduled within the model to increase more than the annual surplus, regardless of the relative returns between bonds and stock in any one given year. Third, the administrative costs are lower than they would be if the assets were placed in individual accounts.

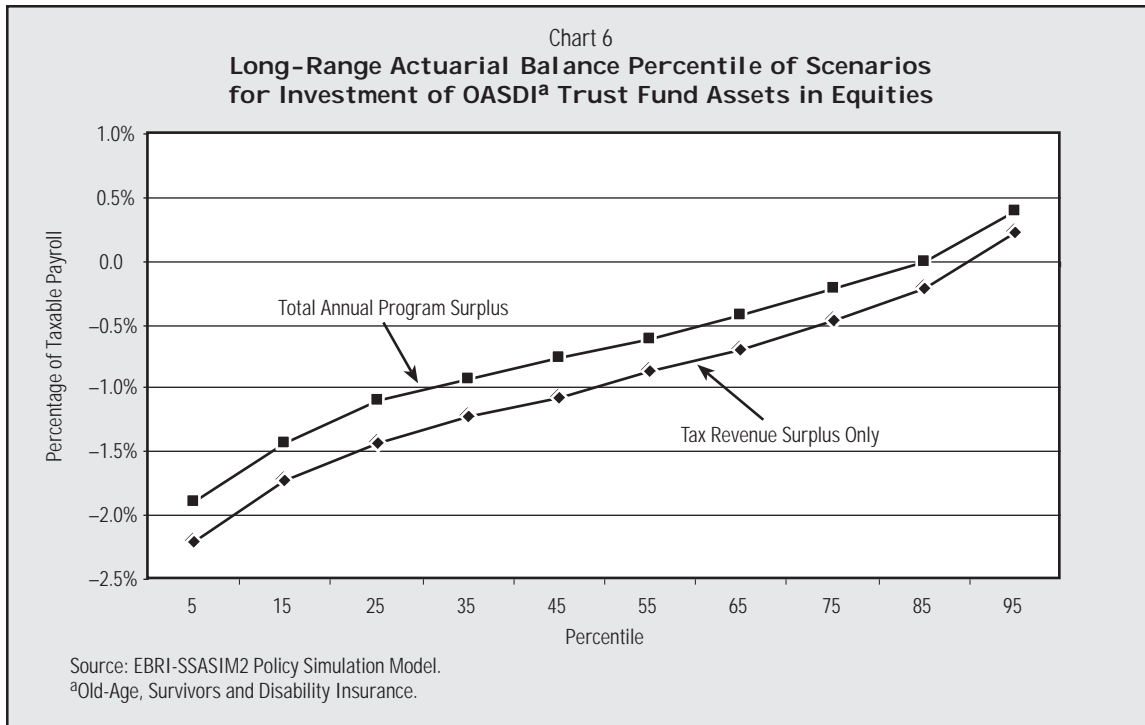
A significant finding of this analysis is the positive balance revealed in the deterministic mode for the total-annual-program-surplus case, but an average negative balance in stochastic mode for this case. Consequently, relying on a deterministic (static) projection could produce very different results than projected if the future does not turn out as predicted.

## Conclusions

When comparing the five Social Security reform proposals that specifically altered



benefit levels, the Moynihan/Kerrey bill compares quite favorably with the other proposals in both benefit levels and payback ratios, when individuals elect to use the individual account option. In contrast, the GB-KS bills do not compare quite as favorably for their benefit levels.



However, they do compare favorably in terms of payback ratios. An important factor in both of these proposals in comparing them with to other reforms is the administrative costs of managing the individual accounts, since benefits can be lowered by up to 23 percent when going from the assumed low to high administrative costs. Moreover, allowing individuals to decide whether to save the 2 per-cent of their OASDI taxable income or to receive higher take-home pay as would be allowed in Moynihan/Kerrey could lead to substantial differences in ultimate retirement income. Finally, allowing for individual investment choices and using actual 401(k) participant allocation data, as opposed to an assumed average allocation for everyone, results in substantial differences in account balances. The Archer-Shaw approach mandates an indexed 60 percent/40 percent equity/bond split in order to avoid the variations in returns that arise from individual investment allocation decisions.<sup>45</sup>

Even when allowing for randomness in the economy's outcomes, the president's proposal would likely significantly *reduce* the long-range actuarial deficit. However, as President Clinton has specifically noted in his statements, it will not *eliminate* the long-range deficit without other reforms to Social Security. Yet, the president's proposal does not look quite as favorable in stochastic (random) mode, since there is some probability that the actuarial balance could be made worse than that projected using the Social Security actuaries' deterministic assumptions. Consequently, although there are greater chances for higher returns, there are also greater chances for worse outcomes. This is also true for other reforms that would invest Social Security assets in equities.

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<sup>45</sup> See VanDerhei et al. (1999).

## Appendix A

### The 21<sup>st</sup> Century Retirement Act

Primary Sponsors: Sens. Judd Gregg (R-NH) and John Breaux (D-LA), and Reps. Jim Kolbe (R-AZ) and Charles Stenholm (D-TX)

**Key Elements:** As introduced in 1998, this proposal would seek Social Security solvency by moving up the increase in the retirement age and by other benefit reductions. In addition to the establishment of individual savings accounts (ISAs), guaranteed Social Security benefits for middle- and upper-income workers would be reduced in a variety of ways.

All four authors were drafting revised versions of the proposal in early 1999, and as this *Issue Brief* was being completed, Reps. Kolbe and Stenholm introduced a new bill containing some significantly different provisions (see below). The analysis in this *Issue Brief* examines the provisions of GB-KS as introduced in the 105<sup>th</sup> Congress (S. 2313 and H.R. 4256).

**Funding and Program Solvency:** Payroll tax rates would remain unchanged, but the 2 percentage point reduction in funds going to the OASDI trust funds would require an infusion of new revenues and benefit reductions (see below) to maintain solvency. To bring in more revenue, newly hired state and local government workers would be brought into the Social Security system and would begin to pay FICA taxes (under the Federal Insurance Contribution Act). Also, certain transfers from OASDI to the Hospital Insurance Trust Fund would be ended.

To maintain long-term solvency, the proposal would direct OASDI Trustees to make recommendations to Congress and the president regarding statutory adjustments affecting trust fund receipts and disbursements necessary to maintain the balance ratio at not less than 20 percent. Such a report would have to specify the extent to which benefits would have to be reduced, taxes would have to be increased, or a combination thereof, in order to obtain the desired objectives. The proposal specifies that the buildup of funds in the ISA system would not be counted in the federal budget. It also calls for the ISA board to study the feasibility of allowing rollovers from qualified retirement plans into the accounts.

**New Kolbe-Stenholm Bill:** In May 1999, Reps. Kolbe and Stenholm introduced a revised bill (H.R. 1793 of the 106th Congress, also called the 21st Century Retirement Act). Following are major points of difference between the current Kolbe-Stenholm bill and the original GB-KS proposal of 1998:<sup>1</sup>

- The provision in the new proposal to modify the present-law cost-of-living adjustments would provide a reduction of 0.33 percentage point instead of 0.5.
- The normal retirement age in the new proposal would now reach 67 for individuals reaching age 62 in 2011, thereafter indexed to longevity (at today's estimate, the early and normal retirement ages would increase by one month every two years). Previously, it would reach 70 for individuals reaching age 62 in 2029 and thereafter would be indexed to maintain a constant number of expected years of life after normal retirement age.
- All three personal insurance amount (PIA) factors would now be reduced: the ultimate values (for beneficiaries newly eligible in 2044 and later) would be: 76.3 percent, 16.8 percent, and 7.9 percent, respectively. Previously, only the upper two PIA factors would be reduced (to 21.36 percent and 10.01 percent respectively, for beneficiaries newly eligible in 2020 and later).
- The new proposal calls for a transfer to the OASDI trust fund from general revenues of the Treasury (starting at 0.4 percent of taxable payroll from 2000–2019 and increasing to 0.8 percent for 2060 and later). No such provision was included in the previous proposal.
- Two provisions in the previous proposal were deleted. The first would have required all employees of state and local governments newly hired after 1999 to be covered under the OASDI program. The second would gradually reduce from 50 percent to 33 percent the amount of a retired or disabled worker's PIA that is payable to his/her aged spouse.

**Administrative Structure for Individual Accounts:** Not yet specified. However, the proposal recognizes that the existing payroll tax collection process would have to be used, and that it could take some years to have the system in place.

<sup>1</sup> Goss, 1999c.

## Appendix B

### The Social Security Solvency Act of 1999 (S. 21)

Primary Sponsors: Sens. Daniel Patrick Moynihan (D-NY) and John Kerrey (D-NE)

**Key Elements:** This proposal would eliminate the current surplus in the OASDI trust funds and return Social Security to pay-as-you-go financing by implementing a 2 percentage point reduction in payroll taxes. The 2 percent reduction in payroll taxes would be rebated to all workers covered under Social Security. The employee share of the rebate (1 percent of taxable payroll) could be used to establish voluntary investment accounts, which could be maintained either as individual retirement accounts or as accounts held in a new Voluntary Investment Fund, similar to the federal Thrift Savings Plan. The Voluntary Investment Fund would be administered by a new Voluntary Investment Board. Employers would be required to use their 1 percent share of the payroll tax cut to make matching contributions to the voluntary investment accounts of participating employees, and could do so either through an employer-operated plan or the federal fund. Employees who choose not to invest their tax cut could keep it as extra pay, in which case the employer would keep their 1 percent as well.

The bill also would establish the “Kidsave” program, operated through the Social Security system. Kidsave accounts would be funded with a \$1,000 deposit into a designated individual account on behalf of every child born in the United States. These accounts would be funded out of general revenues. \$500 deposits would be made annually, up to the child’s fifth birthday. The funds would be treated as individual retirement accounts for tax purposes.

**Financing and Program Solvency:** This proposal would keep the OASDI trust funds solvent by reducing benefits and boosting the payroll tax rate in the future. Taxes would begin to climb in 2025, going from 10.4 percent to 11.4 percent from 2025 to 2029, then to 12.4 percent from 2030 to 2044, topping out at 13.4 percent in 2060. The taxable wage base would increase from the current level of \$72,600 a year to \$99,900 by 2003, and be adjusted for inflation thereafter. Newly hired state and local government workers would be brought into the Social Security system. Also, 80 percent of Social Security benefits would become taxable to recipients, phased in by 20 percent increments between 2000 and 2003. Funding for the Kidsave accounts would come from general revenues.

**Benefit Structure:** In addition to allowing for voluntary investment accounts, the annual earnings limit for retirees ages 62–69 would be repealed. The normal retirement age would be restored to age 65, repealing the currently scheduled increase to age 67. In addition, the period of time used to calculate the personal insurance amount (PIA) would increase from 35 to 38 years, effectively reducing future benefits across the board. The PIA formula would also be adjusted to reflect increases in life expectancy. Cost-of-living adjustments (COLAs) would be reduced by 1 percentage point. A cost-of-living board would be established to periodically review the COLA formula and determine new COLAs.

**Administrative Structure for Individual Accounts:** Not yet specified.

## Appendix C

### Clinton Administration Proposal—Trust Fund Buildup and Non-Social Security Universal Savings Accounts

**Key Elements:** The Clinton administration has proposed to shore up the Social Security system through 2055, not the full 75-year projection period, by reserving a large part of the projected federal budget surplus for the program and investing a portion of the surplus in the equities markets. The administration would make no changes in the fundamental structure of the program. In addition, the administration has proposed to establish a Universal Savings Account (USA) system outside of the Social Security system, funded by general revenues in the form of an income tax refund. USA individual accounts would be maintained by a government entity based on the federal Thrift Savings Program, separate from the Social Security system. USA accounts would be voluntary, and the benefit formula would be skewed toward lower-income workers.

**Funding and Program Solvency:** Funding for the USA tax cut would come from general revenues. For Social Security, over the next 15 years, 62 percent of the unified budget surplus (\$2.7 trillion) would be transferred to the OASDI trust funds. Of that amount, approximately \$675 billion would be invested in an equity index fund that would eventually represent about 15 percent of the trust funds' total holdings. By the administration's static investment and actuarial calculations, these actions would move the date of trust fund insolvency from 2032 to 2055, although they would not change the date at which program cash flow becomes negative—2014. It is important to note that there is disagreement among policymakers as to whether reserving future surpluses that would have been credited to the OASDI trust funds amounts to "double counting" under the federal budget process. There are also disagreements over whether the collective investment of some of the trust fund assets in equities will result in higher returns to the trust funds, or distort the equity markets in such as way as to lower equity returns.

**Benefit Structure:** No changes are proposed in the existing benefit structure of the Social Security program. However, the administration has suggested that changes in benefits and/or taxes should be pursued on a bipartisan basis to ensure the program's long-term viability (75-year actuarial balance).

USA accounts would be set up as refundable tax credits of \$300, skewed toward lower income taxpayers; higher income taxpayers could still qualify for matching contributions. Total individual account contributions (including the credit) would be capped at \$1,000 per year and buildup in the accounts would be tax-free. No amount could be withdrawn before retirement.

The credit would phase out for those with adjusted gross incomes (AGI) of between \$40,000–\$80,000 for joint filers, \$30,000–\$50,000 for heads of households, and \$20,000–\$40,000 for single filers. Additional contributions to the accounts would be matched 100 percent by the government, although the match rate would drop to 50 percent for filers in the phase-out range. For higher-income workers with retirement plan coverage, the government would match contributions 50 percent for joint filers with AGIs up to \$100,000, heads of household with incomes up to \$75,000, and single filers with incomes up to \$50,000. All workers without an employment-based retirement plan would be eligible for a government match. The accounts would be managed through an entity modeled on the federal Thrift Savings Program.

USAs would be designed to coordinate with existing employment-based retirement programs, including Sec. 401(k), 403(b), 457, SIMPLE, and SEP-IRA plans. Contributions to USAs would not be excludable from taxable income: Joint filers with AGIs of \$50,000 or more, heads of household with incomes of \$37,500 or more, and single filers with incomes of \$25,000 or more who elect to receive the match would be required to report as taxable income 80 percent of the portion of their 401(k) contribution that is matched by their employer.

**Administrative Structure for Individual Accounts:** Not yet specified, but recognition that it could take years to design and implement the system.

## Appendix D

### The Social Security Guarantee Plan

Sponsors: Reps. Bill Archer (R-TX) and E. Clay Shaw (R-FL)

**Key Elements:** This proposal (not yet introduced as legislation at this writing) would not cut benefits and would create a Social Security “lockbox” for payroll tax surpluses. It would increase benefits with elimination of the earnings test, and would decrease payroll taxes over time. It would create individual Social Security Guarantee Accounts (SSGAs) for all workers participating in the Social Security program. The accounts would be funded with a refundable income tax credit of 2 percent of OASDI taxable earnings (at the current annual salary cap of \$72,600, the largest tax credit would be \$1,452). Workers would select where to invest the funds from “50 preapproved, low-risk investment options.” All of the certified investment options would be required to maintain 60 percent of assets in broadly indexed stocks, and 40 percent in broadly indexed corporate bonds. Asset accumulation in the accounts would be tax-free, and no withdrawals would be permitted until a worker became eligible for retirement or disability benefits.

Upon retirement or disability, SSGA balances would help finance a worker’s full Social Security benefit. The account balance would be used to fund annuities that would offset the Social Security benefit payouts attributable to payroll taxes. The objective of the plan is to assure that workers would receive at least the benefits they would be due under current law, and possibly more if the investments perform well.

The annuity calculation, which would be carried out by the Social Security Administration, would subtract 25 basis points from the value of the SSGA to allow for administrative costs. In addition, the annuity calculation would take into account the payment of survivor benefits to a current spouse or qualifying divorced spouse. Assets in the account would be used to purchase an annuity for survivors if the worker dies before retirement, or could be passed to the worker’s estate if there are no survivors.

**Financing and Program Solvency:** Monies for the tax credits would come from the non-Social Security *on-budget* surplus, representing an infusion of funds into the Social Security system from general revenues. Payroll tax rates would remain unchanged in the near term. Because of the projected growth of the SSGAs, the sponsors propose that payroll taxes be reduced by 2.5 percentage points in 2050 and 1 percentage point in 2060, bringing the rate down to 8.9 percent from the current rate of 12.4 percent. The Social Security Office of the Actuary, using static projection methods and a fixed-return assumption, found that this proposal would achieve long-term actuarial balance.

**Benefit Structure:** Current-law benefits due under the Social Security system would remain unchanged, including the scheduled increase in the retirement age. However, the earnings limit for retirees ages 62–69 would be repealed.

**Administrative Structure for Individual Accounts:** Not yet specified, but tied to the existing payroll and tax collection process.

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# Issue Brief

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