Quantitative Measures for Evaluating Social Security Reform Proposals

Recent reports of the Social Security Board of Trustees estimate that the program's trust funds will be exhausted about halfway through the 75-year period over which system finances are projected unless changes are made to the program. Various reforms have been proposed, including:

- retaining the basic structure of the current system but alleviating its financial problems by increasing payroll taxes or reducing benefits;
- raising the age at which unreduced benefits are paid (a form of benefit reduction);
- investing some trust fund assets in publicly traded stocks to take advantage of potentially higher investment yields; and
- allocating some payroll taxes to individually owned accounts that will pay retirement benefits to the account owners, with some provision for reducing the benefits paid directly by the government.

Advocates of the various reforms all claim that their proposals would solve Social Security's financial problems while continuing to meet participants' financial needs in retirement. In the face of these competing claims, a tool kit of quantitative measures is needed for evaluating Social Security reform proposals. In this issue brief, the Social Insurance Committee describes a number of measures that can provide useful quantitative analysis of reform proposals. The issue brief explains how these measures can be used together to obtain a clearer picture of the relative advantages and disadvantages of the various proposals for bringing long-term financial soundness to Social Security.

The American Academy of Actuaries is the public policy organization for actuaries practicing in all specialties within the United States. A major purpose of the Academy is to act as the public information organization for the profession. The Academy is nonpartisan and assists the public policy process through the presentation of clear and objective actuarial analysis. The Academy regularly prepares testimony for Congress, provides information to federal elected officials, comments on proposed federal regulations, and works closely with state officials on issues related to insurance. The Academy also develops and upholds actuarial standards of conduct, qualification and practice, and the Code of Professional Conduct for all actuaries practicing in the United States.

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The Need for Quantitative Analysis

Reform proposals for a program like Social Security, which affects the vast majority of the population, have far-reaching implications that cannot be easily assessed. Many important qualitative factors should be considered, such as the behavioral responses of the various stakeholders. In addition, because Social Security is such a large system, changes in the program are likely to have macroeconomic effects about which there will be considerable debate. While policymakers must weigh these matters carefully, a number of quantitative issues should also be examined when evaluating the merits of the proposals.

Social Security reform proposals come from a number of sources. President Bush's 2001 Commission on Strengthening Social Security has published a report describing three models for restructuring Social Security. Members of Congress from both parties have also made proposals. In addition, private think tanks have contributed to the public debate on Social Security.

Social Security legislative proposals under serious consideration by the executive and legislative branches are normally given very thorough actuarial and other analysis by the Office of the Chief Actuary in the Social Security Administration. That office prepares both short- and long-
range estimates, including the effect of such proposals on the actuarial balances of the Social Security trust funds. Other analyses examine the economic, budgetary and social policy effects of reform proposals.

The nature and extent of the analysis depend on the specifics of the proposal, its prospects for enactment into law and other factors. Reform proposals from outside the government are generally evaluated only by their authors, often using methods intentionally or unintentionally designed to present the proposals in the best light.

The Social Insurance Committee has previously recommended that:

- all Social Security reform proposals that include calculations of financial effects should contain a description of the assumptions used in the calculations;
- such assumptions should be internally consistent with each other;
- where substantial uncertainty exists as to the appropriate level of a critical assumption, sensitivity analysis or a range of assumptions should be provided; and
- when calculations for competing reform proposals use different sets of assumptions, the effects of the different assumptions should be recognized in evaluating the merits of the competing proposals. [See American Academy of Actuaries, Assumptions Used to Project Social Security’s Financial Condition, May 2001.]

Based on the analyses done for past Social Security legislative proposals, the Committee also recommends the use of a standard set of measurement tools that would clearly present the financial effects of Social Security reform proposals. The Committee recognizes that some of these measurement tools may not be appropriate for every reform alternative and may need to be adapted to the specific nature of a given proposal. Given the complex nature of the Social Security system, a one-size-fits-all approach would be inappropriate. At the same time, a balanced and clear analysis is important. The Committee believes that the following measurement tools would help to achieve these purposes.

In general, two types of measurement standards can be applied to Social Security reform proposals. Measures of actuarial viability show whether, under the proposal, income to the Social Security system would be sufficient to support the payment of projected benefits and other expenses. Measures of distributional impact show how well the system, under the proposal, would meet the financial needs and expectations of participants.

**Four Measures of Actuarial Viability**

The Social Insurance Committee believes that placing Social Security on a firm financial footing should be the first concern of any reform enacted into law. For this reason, any Social Security reform proposal should be analyzed according to the following four measures of actuarial viability if it is to receive serious consideration:

1. **Long-Term Adequacy: Does the proposal achieve a positive 75-year actuarial balance under the Trustees’ intermediate assumptions?**

   Actuarial balance refers to a long-range (75-year) comparison of the present values of (1) the Social Security trust funds’ current assets and projected income to (2) projected outgo and an ending trust fund balance equal to the next year’s outgo. Income is primarily comprised of payroll taxes, investment earnings and a portion of the income taxes paid by higher-income beneficiaries. Outgo is comprised of benefit payments and administrative expenses. When the present value of (1) exceeds the present value of (2), the system is said to have a positive actuarial balance.

   Under current law, the Board of Trustees evaluates the program annually over a moving 75-year projection period. This period was chosen because it encompasses the entire lifetime of virtually all current workers. The annual calculations use three sets of assumptions: low-cost, high-cost and intermediate (best estimate). Results under the intermediate, or best-estimate, projection are those generally cited in the media and used by policymakers when debating the future of Social Security.

   One must maintain a proper perspective when interpreting the results of these actuarial estimates.
Security itself is less than 75 years old. Many profound changes in U.S. society and economy have occurred since the mid-1930s when the program was created:

- In the 1930s, only about 6 percent of the population was over age 65, and many of these older Americans were still working. Few people enjoyed long periods of retirement. Today about 12 percent of the population is over age 65. Workers typically retire before age 65 despite longer life expectancies, and many live for decades after retirement.

- In the 1930s, most women in the labor force left when they had children and rarely returned. Today most women either continue working when they have children or return to the work force when their children enter school.

- In the 1930s and early 1940s, birth rates were low, the result of decades of rapid urbanization followed by economic depression and World War II. From 1946 until the mid-'60s, the United States experienced a baby boom, followed in the '70s and '80s by much lower birth rates.

These unanticipated changes, among others, have profoundly affected Social Security’s finances. Given the dynamic nature of our society and economy, further unanticipated changes will inevitably occur over the next 75 years, rendering any long-range projection uncertain at best. Still, almost all workers who will receive Social Security retirement benefits in the next 75 years have already been born, and actuarial methods for projecting the program’s finances are constantly being improved. The Social Insurance Committee believes that a 75-year projection of actuarial balance using the methodology developed by Social Security’s actuaries and the intermediate assumptions is the best available measure of the actuarial viability of any reform proposal.

(2) Long-Term Solvency: Will the projected trust fund balances remain positive at all times during the 75-year projection period?

Even if the system is in actuarial balance over the 75-year projection period, the trust fund balance may not be positive at all points during that period. If one or the other of the trust funds (i.e., the fund which provides old age and survivor benefits and the separate fund which provides disability benefits) runs out of money and the shortfall is determined to be temporary, Congress could authorize interfund borrowing (as it has on occasion in the past) or borrowing from general revenues or other sources to tide the system over until income catches up with expenditures. In evaluating any reform proposal, any period during the 75-year projection period when the trust fund is expected to run out of money should be identified, even if the situation is only temporary and the system is expected to be in long-term actuarial balance.

(3) Sustainability: Will the projected trust fund ratio at the end of the 75th year at least equal the ratio at the end of the 70th year?

The trust fund ratio is the amount of trust fund assets at the beginning of a year divided by expected expenditures during that year. The trust fund ratio is an important ongoing measure of the financial health of the system.

As each year passes, the 75-year projection period moves forward one year; that is, the first year from the previous year’s valuation becomes part of the past, and a new 75th year is added at the end of the previous year’s projection period. A potential danger is that, if projected expenditures exceed projected income in the new 75th year, this would reduce the actuarial balance in the new valuation, compared to the previous one, all other things being equal. If this occurs many years in a row, a projected positive actuarial balance will turn into a negative actuarial balance. In fact, this happened after the enactment of the Social Security Amendments of 1983. Initially the system was in actuarial balance due to adoption of these amendments, but soon thereafter the system fell out of balance again. This occurred in part because each new year added to the projection period in subsequent valuations was a deficit year. Therefore, it is important to pay attention to the trend in the trust fund ratio during the last five years of the projection period to see if a continuation of this trend could change the actuarial balance in the future.
(4) Need for General Revenue Subsidy: Does the proposal require the transfer of general revenues into the trust fund to achieve long-term adequacy and solvency?

Historically, most proposals to modify the existing OASDI program have retained the idea of funding the program almost exclusively through dedicated Social Security payroll taxes. Emerging demographic changes, however, suggest that significant increases in payroll taxes may be required to fund currently scheduled benefits. Many recent reform proposals make use of transfers from the general fund of the Treasury to assist in resolving anticipated Social Security financing difficulties. Such transfers enable a proposal to provide: (1) a given level of benefits at a lower payroll-tax rate, or (2) higher benefits at a given payroll tax rate.
Consequently, analyses of reform proposals should make clear when such general revenue transfers are being used to achieve actuarial balance. This can best be accomplished by showing the year-by-year cash flows under the proposal from the government’s general account to the trust fund (and vice versa where applicable) and the present value of these cash flows. For purposes of comparison to the various reform proposals, the current system should be treated as if it had been modified to include transfers from general revenues to the extent that the system is not in actuarial balance. After all, general revenues would be required to pay full, timely benefits after the trust fund’s assets are exhausted, unless benefits are reduced from current-law levels.
Two Measures of Distributional Impact

Social Security covers nearly all working Americans at all income levels and in virtually all family situations. Because the federal government has always tried to achieve a balance between social adequacy and individual equity in the Social Security program, Social Security benefits vary, both in dollar amounts and as percentages of previous earnings levels, for participants in different situations. [See American Academy of Actuaries, Social Adequacy and Individual Equity in Social Security, Fall 1998.] Policy-makers naturally want to examine the impact of various reform proposals on participants in different situations and need suitable tools for this purpose. These additional measurement tools provide policy-makers with information about the impact of proposed changes on current and future workers in various situations.

(1) Replacement Rates: How will the proposal affect Social Security retirement benefits at age 65, expressed as a percentage of career-average earnings, over the next 75 years?

Replacement rates are frequently used by actuaries and economists to measure the relative level of retirement income. A replacement rate is the ratio of a worker’s income in the first year of retirement to the average career earnings.
level of earnings, which in the steady case is represented by earnings in the last year before retirement. Retirement income is derived from a combination of Social Security, employer-sponsored retirement plans, personal savings and part-time work. Thus, changes in the Social Security portion of a worker's replacement rate will affect how much the worker needs from these other sources.

Many studies have been carried out to estimate the replacement rate that workers need to maintain their pre-retirement standard of living at various income levels and in various family situations. These studies have shown that, due to changes in expenditure patterns and taxes when workers retire, a replacement rate in the range of 70-80 percent is generally adequate, although higher or lower rates may apply in certain situations.

(2) “Money’s-Worth” Comparisons: One of several money’s-worth measures is the internal rate of return, or IRR. This measure addresses the following question: What interest rate would a worker’s Social Security payroll taxes need to earn to pay the worker’s expected benefits – counting both the employer and employee share of the taxes, adjusting the interest return to an after-inflation rate and analyzing cases of retirement at age 65. This analysis should be done over the 75-year projection period for both the proposal and the current program.
Some analysts have applied a “money’s-worth” approach to evaluating the Social Security system. In effect, they treat the employer/employee payroll taxes like an investment and measure the implicit rate of return represented by benefit payments. The Committee does not believe that this money’s-worth approach reflects the true value of the current Social Security system because Social Security is not currently designed as a pure investment vehicle, and any proposal that shifts the program toward a greater investment orientation could modify or eliminate other features of social value not easily measured in monetary terms. Nevertheless, the effective rate of investment return can be one element in a balanced approach to evaluating proposed reforms.

Several potential pitfalls must be avoided in applying money’s-worth analysis:

- As noted above, some reform proposals include subsidies from the government’s general revenues. Any such general revenues would represent an investment in the system that, if ignored, could be manipulated to produce any desired rate of return. In practice, money’s-worth calculations customarily count only payroll taxes as revenue. Further, it is unclear how any general revenue subsidy would be allocated among participants for purposes of these calculations, because income taxes and Social Security payroll taxes are levied on very different bases. In applying the money’s-worth analysis to any reform proposal, all outside subsidies must be identified, regardless of whether the subsidy is funded by current taxation or by additional government debt. The analysis should, if possible, show how the outside subsidies contribute to the investment return in each hypothetical family situation. If this is not possible, then the analysis should at least describe in general terms how the outside subsidies affect investment returns.

- A special case of the above problem presents itself with regard to the current Social Security program. Because the program is not in actuarial balance, its funding deficit represents an effective subsidy. Therefore, values calculated from benefits versus payroll taxes for the current program must be modified to reflect either increases in the employer/employee payroll-tax rate or decreases in benefits necessary to bring the program into actuarial balance. Several approaches have been used to accomplish this by either assuming reduced benefits or increased taxes in the future. Interested readers may refer to the Report of the 1994-96 Advisory Council on Social Security, Volume 1, Appendix 2.

- The current Social Security program includes important nonretirement benefits, such as disability, family member and survivor benefits. Some reform proposals reduce these benefits. Therefore, to obtain a valid comparison, the expected value of nonretirement benefits must be included on the benefit side of the comparison.

**Conclusion**

The Social Insurance Committee recommends that, whenever practical, the measurement tools described in this issue brief should be applied to major Social Security reform proposals, including those intended to provide fundamental structural changes. To do so would provide policymakers and the public with important information needed to fairly evaluate each proposal.