

Perspectives from the President's Commission on Social Security Reform

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Social Security faces a severe financial problem. In about 15 years, the program will begin to experience *permanent* annual cash deficits, when annual benefit payments will exceed the amount collected in payroll tax revenues. By 2041, according to the Social Security Trustees 2002 Report, the Social Security trust fund is projected to be insolvent, meaning that the program will be legally unable to pay scheduled benefits. One way of expressing the financial shortfall is to compute the present value of the difference between system outlays and revenues over a 75-year horizon, which is currently equal to a permanent and immediate tax rate increase of 1.86 percent of payroll, or equivalent to \$3.2 trillion in present value. If the policy of pay-as-you-go financing is continued for the next 25 years, a 50 percent payroll tax increase will be required at that time to pay scheduled benefits.

Social Security's bleak financial outlook is not its only significant problem. For current workers, system benefits represent very low returns on payroll tax contributions. The inflation-adjusted return is 1–2 percent for workers earning an average wage, less than 3 percent for low-income retirees and negative for some higher earners and dual-worker couples. Moreover, Social Security fails to provide adequate protection against poverty. For example, one in every four divorced, separated or never-married women over age 65 lived in poverty in 1999. Those in

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the bottom half of the American earnings distribution, including a larger segment of the African-American and Hispanic population, lack a pool of private savings to support them in old age, and Social Security has no minimum poverty line benefit. Finally, there is ample evidence that the system induces workers to save less and retire early, so that the program's structure creates potentially substantial capital and labor market inefficiencies (Gruber and Wise, 2002; Congressional Budget Office, 1998).

In 2001, President George W. Bush appointed the President's Commission to Strengthen Social Security, with 16 members drawn equally from both major political parties. As members, we were charged to provide the President with recommendations to modernize the Social Security system, restore its fiscal soundness, and develop a workable system of Personal Retirement Accounts as part of a newly structured program.¹ In this paper, we offer our own perspectives on Social Security reform, drawn from service on the President's Commission. We begin with a discussion of the use of personal retirement accounts as a method of prefunding the Social Security system. The Commission to Strengthen Social Security developed three reform scenarios that incorporate personal retirement accounts as a central element in a modernized system of old-age security. Here, we will focus on one reform plan in particular, one that promises an enhanced and more reliable safety net while also providing workers the opportunity to invest in personal accounts with diversified investment choice and potentially lower risk. Reforms of this sort can, we believe, help put Social Security on a self-financing basis for the first time in over a quarter of a century.

Perspectives on Funding and Personal Accounts

If Social Security reform is to reduce the tax burden imposed on future generations while maintaining adequate benefit levels, the system must move toward a prefunded program (Feldstein, 1996). Moving from what is mainly a pay-as-you-go unfunded transfer program to a funded Social Security program might be accomplished in several ways. The federal government might invest

¹ The reports, hearings and proceedings of the President's Commission to Save Social Security, along with other background information, can be found at (<http://www.csss.gov>). The CSSS was cochaired by Senator Daniel Patrick Moynihan and Richard Parsons, who is chairman and chief executive officer of AOL/Time Warner. Along with the two of us, the other 12 members were Leanne Abdnor, former executive director of the Alliance for Worker Retirement Security; Sam Beard, founder and president of Economic Security 2000; Bill Frenzel, former U.S. Representative; Estelle James, consultant with the World Bank; Robert Johnson, CEO of Black Entertainment Television; Gwendolyn King, former Commissioner of Social Security; Gerry Parsky, former Assistant Secretary of the Treasury; Tim Penny, former U.S. Representative; Robert Pozen, at the time vice chairman of Fidelity Investments; Mario Rodriguez, Hispanic Business Roundtable; Thomas Saving, current Social Security Public Trustee; and Fidel Vargas, vice president of Reliant Equity Investors. The staff members of the Commission also included two economists, Jeffrey Brown and Kent Smetters.

surplus Social Security funds directly in capital markets. The federal government could use surplus funds to pay down the publicly held debt. Or the government must permit individuals to carry out the prefunding in the form of personal investment accounts.

Centralized Government Investment of Social Security Surpluses

In 1998, Alan Greenspan testified before Congress that government investment of Social Security surpluses in stocks and bonds would have “very far-reaching potential dangers for a free American economy and a free American society.” Similar concerns were held by the Senate and the President. In 1999, the Senate rejected—with a 99–0 vote—a proposal to allow the government to invest the Social Security surpluses in the capital market. In his 2001 charge to the Commission, President Bush ruled out allowing the federal government to invest Social Security in corporate assets.

Commissioners’ views were no different. Members worried that surpluses would be used for “socially targeted” investments, rather than for diversified capital market holdings. Moreover, if the federal government were to become a major corporate shareholder, Commissioners worried that it would vote its shares in ways that would serve political or social objectives, at the expense of Social Security returns and the economy’s overall performance. Shoven (2001) offered testimony about the costly impact of the California state employee pension fund trustees’ decision to divest the fund of tobacco stocks. Schwarz (2001) testified about her analysis of government investment in other countries, where she found that most countries in which the government invested pension funds had very poor experiences. At worst, government-invested pension funds lost money during the 1990s; at best, they earned bank-level rates of return. Her pessimistic conclusion was that “experience with publicly managed funds has been disastrous.”

Financial considerations aside, a program of government investment would also mean that the government, rather than workers and retirees, would own and dispose of the accumulated retirement assets. Commissioners felt that personal ownership of retirement assets would give some workers an incentive to save more, while adoption of a defined contribution structure would mitigate the program’s adverse incentives to retire earlier.

Using Surpluses to Pay Down the Publicly Held Debt

To avoid the perils of government investment in private firms, the government might alternatively use Social Security trust fund revenues to pay down the publicly held debt. In contrast, adopting a personal account system financed by payroll taxes would mean that future annual Social Security surpluses would not be available for reducing the federal debt held by the public. The latter issue did not overly worry Commissioners, as most were skeptical of the federal government’s ability to sustain a policy of using Social Security surpluses to pay down the federal debt. This skepticism stemmed from our reading of Social Security’s extensive legislative

history (for historical background, see Weaver, 1982; Cogan, 1998; and Schieber and Shoven, 1999). From Social Security's founding in the mid-1930s through the mid-1990s, each time surpluses occurred—as a result of policy design, a wartime economy, or a peacetime period of noninflationary economic growth—the congressional response was to raise benefits or liberalize eligibility.

The process began with the original Social Security Act of 1935, under the auspices of President Franklin Roosevelt. His initial plan was to amass substantial surpluses during the program's early years, which were to be used to reduce federal debt held by the public. The reduction in other federal debt and the interest savings were to be credited to the Social Security program through a reserve account. Later, when Social Security was forecasted to incur deficits, the reserve account would be drawn down to finance benefit payments. The plan hit difficulties almost immediately. By the end of the 1930s, the Social Security system's reserve policy collapsed under dual pressure from those who sought to liberalize benefits and from those who feared that surpluses might lead to higher federal spending on programs other than Social Security. In 1939, Congress dissipated the surplus by raising benefits, issuing the first benefit checks a year earlier than originally planned and granting eligibility to survivors and spouses.

During the 1940s, the wartime economy again produced large Social Security surpluses. By 1950, the accumulated surpluses were sufficient to finance the next ten years of benefit payments. Again, pressure mounted to spend the surplus, and Congress responded. In each election year during the 1950s, Congress raised benefits or expanded eligibility. By the end of the decade, the surplus had been spent. By the 1960s, strong economic growth had produced Social Security surpluses. For a third time, federal government's response was the same. Congress boosted benefits a total of seven times over the nine-year period from 1965 to 1973. These benefit increases totaled 83 percent, and along with a poorly performing economy, they brought Social Security to the brink of insolvency by the mid-1970s.

Since then, Congress has not significantly raised Social Security benefits in real terms. However, deficits plagued the program until the mid-1980s, and system surpluses over the next decade were modest in size. Not until 1992 did the surpluses accumulate to one year's worth of benefit payouts. Then in 1994, facing deficits in the disability program that threatened payments to currently disabled workers, Congress enacted legislation to divert funds from the Social Security old-age program to pay for the Disability Insurance program. Formally, this was accomplished by reducing the Old-Age and Survivors Insurance tax rate and boosting the Disability Insurance tax rate by equal amounts. This tax diversion, which continues today at a rate of \$25 billion per year, will total about \$160 billion by the end of this fiscal year.

Commissioners also found little reason to believe that Social Security surpluses remaining after the legislative actions just described were used to reduce the debt substantially. In our view, it was more credible that Social Security surpluses produced an increase in federal spending on non-Social Security programs and tax

reductions, a viewpoint that is widespread among economists. For instance, at a 1989 American Enterprise Institute conference on Social Security, conference participants Alan Blinder, Barry Bosworth, James Buchanan, William Nordhaus, James Poterba, John Shoven and Carolyn Weaver all expressed the view that previous Congresses had spent Social Security surpluses (Weaver, 1990). Similar conclusions were reached by Aaron, Bosworth and Burtless (1988) and earlier by Munnell and Blais (1984). There is little hard research evidence on this point, although the only systematic economic analysis of the issue, by Crain and Marlow (1990), found statistical support for the conclusion that Social Security surpluses led to more non-Social Security spending. In view of the persistent tendency of past Congresses to spend Social Security surpluses, the Commission concluded that it seemed imprudent to assume that future Congresses would behave differently.

This conclusion was reinforced by budgetary actions that occurred during the Commission's deliberations in 2001. A combination of recession, appropriations increases, and a tax cut transformed anticipated federal budget surpluses into deficits. Surplus Social Security revenues were once again being used to finance federal spending other than on the retirement system. Many Commissioners felt that individually owned personal accounts would more strongly insulate workers' Social Security taxes from political pressures and thereby improve the chances of prefunding. Though future Congresses may never be completely precluded from using a share of workers' accounts for purposes other than retirement, individual ownership, in our view, would make it more difficult.

The Meaning of the Trust Fund

When describing Social Security's financial problems, the Commission focused on the program's future cash flow shortfalls, rather than on trust fund accounting. An examination of Social Security cash flows recognizes that, as a practical matter of government finance, Congress will be required to take some budgetary action when the Social Security system begins to incur annual cash flow deficits and when the general fund will need to repay what it has borrowed from the Social Security trust fund. At that point, the federal government will have to raise additional revenues by taxing or borrowing, cutting Social Security benefits, or freeing up revenue by cutting other government programs.

The practical meaning of the trust fund, as opposed to cash flow shortfalls, depends on how Social Security affects the rest of the federal budget. If Social Security surpluses are used to reduce other federal debt, the trust fund balance represents a governmental asset, the value of which equals the amount of debt reduction and associated interest savings. However, if Social Security surpluses are used to finance more non-Social Security spending or tax reductions, then the trust fund balance does not represent a governmental asset. Instead, it is more accurately viewed as a political claim on future general fund revenues that will have to compete with other budgetary claims.

This distinction also means that focusing on the trust fund can give a misleading

assessment of how personal accounts affect federal finances. Under standard budgeting practice, the trust fund balance is treated as a governmental asset regardless of whether or not the surplus revenues are used to reduce the publicly held debt. Hence, diverting a share of Social Security payroll taxes into personal accounts appears to drain the trust fund's assets and to reduce investment returns credited to these trust fund assets. However, if Social Security surpluses are *not* used to reduce the federal debt but instead are spent on current consumption, then they are not a governmental asset to be drained, and there are no investment returns to be reduced by personal accounts.

The trust fund's use of a 75-year time horizon also produces a misleading assessment of the impact of personal accounts, even if future trust fund surpluses were used for debt reduction. Payroll-tax financed personal accounts reduce the trust fund's net income during the early years of the policy, but in later years, the trust fund's net income rises as personal account annuities offset Social Security liabilities. Using a fixed time horizon truncates the years of net income gain and thereby produces a downwardly biased estimate of how personal accounts enhance Social Security solvency.

To see this, consider a plan under which workers could divert two percentage points of their payroll tax rate into personal accounts. Assume that those who opt for personal accounts are required to forgo in traditional Social Security benefits the diverted contributions plus a 3 percent real rate of return on these contributions. Under the assumptions used by the Social Security Trustees, the 3 percent real return is precisely what the trust fund would have earned on these funds, so the policy would seem financially neutral for the trust fund in perpetuity. Yet, if a 75-year horizon were used to assess the policy, the long-run actuarial imbalance would rise from its current level of minus 1.86 percent of payroll to minus 2.46 percent, a 32 percent increase. Clearly, the bias created by using a fixed 75-year time horizon is a not trivial.

This problem can be easily avoided by extending the accounting time horizon to perpetuity. Alternatively, many economists have proposed to use "generational accounting" to track Social Security and other long-term fiscal liabilities not currently tracked on budget.² Adopting a longer-term perspective would remove the budget's current bias against prefunding implicit long-term liabilities and give policymakers an essential tool for making and justifying more informed long-term decisions.

Prefunding necessarily implies increasing current saving, which we have argued is not readily accomplished via a governmental trust fund. Indeed, we believe that focusing on trust fund accounting can itself be misleading and certainly does not enhance the prospects for maintaining fiscal solvency in the long run. For this

² The generational accounting approach was developed by Auerbach, Gokhale and Kotlikoff (1991). See also the Symposium on Generational Accounting in the Winter 1994 issue of this journal (Auerbach, Gokhale and Kotlikoff, 1994; Haveman, 1994).

reason, and in keeping with the President's charge, the Commission proposed several alternative structures for funded personal retirement accounts.

A Two-Tiered System

Most Commissioners did not contemplate permitting workers to invest their entire payroll taxes in private securities, believing that this idea would be too radical a departure from the current program. Furthermore, President Bush's charge to the Commission proposed that personal accounts should augment Social Security, rather than replace it. Consequently, Commissioners concurred that a reformed Social Security system should have two interrelated tiers.

An advantage of such an approach is that it allows building on the existing retirement system. A modified traditional Social Security program serves as Tier I and would provide an enhanced safety net. Its benefit structure would be altered in several ways discussed below to improve its role as a backstop against old-age poverty. Personal retirement accounts in Tier II would offer an investment-based component, enhancing individuals' opportunity to build financial wealth as a source of retirement income.

The concept of a two-tiered program has been the subject of considerable prior academic research, and it is regarded as a mainstream idea today in policy circles. The essential elements of a two-tiered U.S. program were presented to the Greenspan Commission two decades ago (Boskin, 1982). Since then, numerous proposals embodying a two-tier structure have been developed by economists and policymakers (for examples, see Weaver, 1990; Gramlich, 1996; Feldstein and Samwick, 1998; Schieber and Shoven, 1999; Moynihan, 1998; Koitz, 2001). Elected officials are also familiar with the real-world example of the Thrift Saving Plan, which is a retirement program adopted 15 years ago for federal civilian (and later military) personnel. A wide range of two-tiered plans has been discussed in Congress. Additionally, a two-tiered approach has been successfully implemented in a number of countries, including England, Australia and, most recently, Sweden.

A two-tiered approach not only serves as a mechanism for prefunding through private accounts, but it also has other advantages. For instance, a two-tiered approach gives the Social Security program a greater degree of transparency. Since its inception, Social Security has balanced the tension between social adequacy and individual equity. Social adequacy seeks to ensure that retirees attain a certain standard of living in old age, which requires income transfers from high-earner to low-earner workers over their lifetimes. Individual equity, on the other hand, seeks to ensure that each worker's contributions are closely linked to his or her retirement benefits.

The current program's complexity is the result of years of legislative efforts to meet these competing goals with a single benefit formula. This complexity has produced many inequities and anomalous redistribution patterns, and it yields a

surprisingly low level of lifetime income redistribution (Gustman and Steinmeier, 2000; Coronado, Fullerton and Glass, 2000; Liebman, 2001). Creating two separate tiers under Social Security, each with its own goal, would improve the overall program's transparency and equity. Thus, in each of the Commission's plans, social adequacy became the principal objective of Tier I, while individual equity became the main objective of Tier II. This greater transparency would enable policymakers to make more informed choices about appropriate benefit and tax levels, and it should also enable plan participants to make better savings and retirement decisions.

An additional policy rationale for a two-tiered system is that it may entail less political and economic risk than a single-tiered program (Shoven, 2001). Despite considerable confusion on this point among public policy officials, the news media, and the public at large, traditional Social Security benefits are not "guaranteed." As the Social Security Administration indicates (<http://www.ssa.gov/history/nestor.html>):

There has been a temptation throughout the program's history for some people to suppose that their FICA [Federal Insurance Contributions Act] payroll taxes entitle them to a benefit in a legal, contractual sense. That is to say, if a person makes FICA contributions over a number of years, Congress cannot, according to this reasoning, change the rules in such a way that deprives a contributor of a promised future benefit. . . . Congress clearly had no such limitation in mind when crafting the law. . . . Like all federal entitlement programs, Congress can change the rules regarding eligibility—and it has done so many times over the years. The rules can be made more generous, or they can be made more restrictive. Benefits which are granted at one time can be withdrawn. . . .

Furthermore, the U.S. Supreme Court ruled in *Flemming v. Nestor* (63 U.S. 603 [1960]) that workers and beneficiaries have no legal ownership over their benefits, even after a lifetime of paying taxes into the system. The payment of scheduled benefits under the Social Security system remains contingent on the hope that politicians elected 20–30 years from now will decide to generate the revenue needed to pay benefits scheduled under present law, given the constraints and choices they face at that future date.

History shows that Congress has previously altered scheduled Social Security benefits a number of times, and in some instances, the benefit changes have been quite substantial. For instance, Congress passed legislation that reduced the growth of scheduled benefits in 1977, 1983, and 1993. The 1977 amendments reduced benefits by 19 percent from their promised levels for workers who were age 62 in 1980 and by 30 percent for workers age 54 in 1980 (Commission on the Social Security "Notch" Issue, 1994, p. 78). Looking ahead, Commissioners felt that the political risk of achieving a given level of retirement income is substantial, since the

system faces even larger shortfalls as a result of the program's worsening financing problems.

There is also economic risk stemming from the linkage between benefit promises and national average earnings. Given an individual worker's lifetime wage profile, variations in national average earnings due to changes in productivity produce variations in individuals' Social Security benefits.³ Social Security's benefit formula, in effect, spreads "productivity" risk across cohorts, imparting additional uncertainty regarding eventual benefits paid under the current system.

Achieving a given level of retirement income through investment-based individual accounts is, of course, also subject to uncertainty due to capital market volatility. But Commissioners believed that this risk would be better managed with a Tier I level of benefits in place, paired with the opportunity to diversify investments via a personal account in Tier II.

Changes in First-Tier Benefits: From Wage Indexing to Price Indexing

Personal accounts alone will not put the Social Security program on a sound financial basis. Meeting President Bush's charge to restore the program's fiscal soundness required additional steps to reduce the growth of future liabilities. In assessing its options, the Commission undertook a review of current and past policy for determining Social Security benefits and its implications for future costs.⁴ In particular, this research investigated current benefit promises and the role of wage versus price indexing in the benefit formula.

Under current law, initial retirement benefits are indexed to wages, and after retirement, they are price indexed. When calculating initial Social Security benefits, a worker's average indexed monthly earnings are computed by indexing that worker's highest 35 years of earnings to the average growth in national earnings. Next, initial monthly benefits are derived from the worker's average monthly earnings, a formula also indexed to average earnings.⁵ The main rationale for wage indexing is to ensure that initial benefits for each cohort of retirees replace a

³ An underappreciated point is that the Social Security program's current benefit formula could subject low-wage workers to greater economic risk than high-wage workers. This outcome arises because for a low-wage worker, an additional dollar of lifetime annual earnings adds 90 cents to Social Security benefits, while for a high-wage worker, each additional dollar adds only 15 cents to benefits. For this reason, fluctuations in lifetime pay and/or the national average wage could produce larger variations at the lower end of the pay distribution. Empirical research to evaluate the sensitivity of various earnings profiles to this type of variability would be useful.

⁴ This review was conducted by a subgroup of Commissioners known as the "Fiscal Subgroup," headed by co-chairman Richard Parsons. It included the Commission's four economists (the two authors of this paper, along with Thomas Saving and Estelle James) as well as Lea Abdnor, Gerald Parsky, Tim Penny and Robert Pozen.

⁵ Specifically, in 2001, a single worker who retired at the normal retirement age received benefits worth 90 percent of the first \$561 of monthly average indexed monthly earnings (AIME); 32 percent of each additional dollar of AIME up to \$3,381; and 15 percent of each additional dollar of AIME thereafter. These bend points, or the dollar amounts that define the ranges over which percentage replacement rates are applied, are indexed to the growth in average earnings of all workers covered by Social Security.

specified portion (the “replacement rate”) of that cohort’s preretirement pay. Under current rules, a worker who earns median wages over an entire career receives an expected initial benefit worth roughly 40 percent of the median wage at retirement. After the initial level of benefits is in place, subsequent benefit payments are linked to the Consumer Price Index, not the rate of wage increase.

Wage indexing has been part of the Social Security program for less than half its history. From the program’s inception in 1935 until 1975, neither workers’ wage histories nor benefits for currently retired workers were indexed to wage growth or inflation rates. Rather, when deciding to grant a benefit increase, Congress balanced the social adequacy of benefit levels against the resources available to finance an increase. In doing so, Congress focused mainly on preserving the purchasing power of benefits, while paying little attention to wage replacement rates (Hsiao, 1979). For example, the current 40 percent replacement rate policy was established in a 1977 law, but as late as 1970, the replacement rate for a worker with median wages was only 34 percent (Committee on Ways and Means, 2000).

Wage indexing means that the purchasing power of Social Security benefits will likely rise from one retirement cohort to the next, as increases in worker productivity cause wages to grow faster than prices. The intermediate assumptions of the Social Security Trustees (Board of Trustees, 2001, p. 84) project that real wages will grow at a 1.3 percent average annual rate during the next decade and at a 1 percent annual rate thereafter. Under this assumption, a “typical” worker age 45 in 2001 who earns the average Social Security taxable wage every year and retires at age 65 is slated to receive a monthly payment 20 percent higher in real terms than the benefit paid to an average worker retiring in 2001. Similarly, scheduled benefits for today’s teenagers are scheduled to be 60 percent higher than benefits paid to a typical worker retiring in 2001.⁶

Wage indexing has been controversial from the time it was first proposed. Both the Report of the 1975 Consultant Panel on Social Security’s report and the minority report of the Advisory Council on Social Security (1979, pp. 233–234) issued strong objections to the policy on equity and cost grounds.⁷ Their equity concerns can be illustrated with a simple example. Consider two workers whose retirement ages are five years apart and who have identical earnings at each point in their life cycles. These workers will receive different inflation-adjusted Social Security benefits even though they have contributed identical amounts to Social Security, solely because the general level of real wages rises over time. Similarly, both the Consultant Panel and the Advisory Panel expressed concerns that wage

⁶ These calculations include the fact that Social Security’s normal retirement age is scheduled to rise to age 67 in 23 years. In the above examples, both typical workers will pay an early retirement penalty of about 7 percent for retiring at age 65.

⁷ The 1979 Consultant Panel was chaired by economist William Hsiao, and members included James Hickman, Ernest Moorhead and economist Peter Diamond. The minority views in the 1979 Advisory Council are those of Henry Aaron and Gardner Ackley.

indexing would threaten Social Security's financial solvency. The Consultant Panel on Social Security (1976, p. 6) warned that financing a wage-indexed system would ultimately require an eventual 50–80 percent increase in the payroll tax rate. History has justified their concerns: since wage indexing was adopted, the Social Security Trustees have reported that the program has been financially insolvent in 23 of their last 25 annual reports. By contrast, actuarial calculations performed for our Commission showed that if the real purchasing power of initial benefits paid to future retirees were maintained at the level provided to today's retirees—that is, adjusted for prices rather than for wages—future benefits could be paid without any increase in the payroll tax rate.

While a wage replacement policy might have been a worthy Social Security program goal at an earlier historical period, our view is that this goal's importance has diminished as per capita incomes have risen and other retirement savings vehicles, such as IRAs and 401k plans, have become more widely available. Wage replacement may be viewed as a desirable goal of a comprehensive pension policy, without needing to be the principal and overriding objective of Tier I of a revamped Social Security program. Our reforms would allow future Congresses to increase the real initial level of Social Security benefits, if it were feasible to do so, after considering and balancing the competing needs of programs to enhance security, health care, and retirement well being.

An Illustrative Reform Plan

The Commission sketched three reform plans in its final report. Here we focus on one of them, known as Model 2, to illustrate key points. That approach would replace wage indexing with a policy under which initial benefits would grow from one retirement cohort to the next at the rate of growth of prices. Therefore, workers in successive retirement cohorts with identical real wages would automatically receive the same real monthly benefits. This policy would be implemented in 2009, so that no beneficiary currently over the age of 55 would see any change in benefits. As a result, inflation-adjusted benefits received by future retirees would be slightly higher than those received by workers who retired in 2001. For workers currently younger than age 55, initial benefits would grow 1 percent per year more slowly than under current law.

Price indexing initial benefits is a very powerful reform: our calculations indicate that it would produce long-term savings sufficient to put Social Security back on a sound actuarial footing. As noted earlier, the Social Security system now confronts a long-run actuarial deficit of 1.86 percent of payroll (if the shortfall were smoothly assessed over a 75-year calculation window). In other words, an immediate and permanent tax increase of 1.86 percent of payroll would close the actuarial gap, assuming the surpluses would be saved and not spent. Moving to price indexing would reduce Social Security's long-term liabilities by 2.07 percent of payroll over the same period, thereby creating an actuarial surplus of 0.2 percent of payroll over the 75-year horizon. Commissioners proposed that the resulting

surplus, the present value of which amounts to about \$300 billion, could be allocated to raising inflation-adjusted benefits to low-wage workers and widows of deceased low-wage workers.

Some might think that price indexing would be difficult to implement, since politicians might be unwilling to reduce the replacement rate. We disagree, on the grounds that Congress has, in the past, reduced replacement rates on several occasions. For instance, the 1977 Social Security Amendments reduced replacement rates by 30 percent for workers age 54 and younger in 1980. The 1983 amendments, by raising the “normal” retirement age, will cut replacement rates by 14 percent when they are fully phased in. The 1993 amendments, by taxing Social Security benefits, reduced replacement rates by 7 percent for some middle-income retirees and by as much as 20 percent for high-income retirees. We also emphasize that, under Commission plans, retirement income from both tiers of the new Social Security program would provide benefits for low- and middle-income workers that are at least as high as they are at present, and for many, benefits would be much higher.

Tier II: Personal Retirement Accounts

President Bush’s charge to the Commission called for plans that would allow workers a choice to invest part of their payroll taxes in a voluntary personal retirement account, as part of a reform that improved the Social Security system’s long-term fiscal status and in a way that did not increase payroll taxes nor permanently divert general revenues. This charge had several policy implications for the structure of Tier II accounts.

First, these voluntary accounts would need to be structured so participants would find them potentially attractive. The plans should offer participants some investment choice while they would still be relatively inexpensive to operate. Keeping fees low implied that the accounts should be made as large as possible quickly, competition among fund managers should be encouraged, and investment choices should be limited to hold down management fees. Second, these accounts would have to be at least partially financed by permitting workers to redirect a portion of their payroll taxes into these accounts. Third, participants who elected to contribute less payroll tax to the traditional system should receive lower Tier I Social Security benefits, though, of course, they would receive their Tier II personal account benefits, as well. Fourth, the personal retirement accounts should be targeted at lower-paid workers, both to maintain system progressivity and because this segment of the labor force is least well served by corporate pensions and tends to have the lowest saving rates.

Designing Personal Accounts

To illustrate how the policy objectives were weighed in practice, it is useful to focus again on the Commission’s Model 2. Under this plan, all workers younger

than 55 would be permitted to redirect 4 percentage points of their payroll taxes voluntarily into their personal accounts, up to a \$1,000 cap. This cap would be indexed to wage growth. The personal account would enable a young worker earning \$25,000 annually to anticipate building a retirement account worth over \$150,000 in retirement wealth (in 2001 dollars). While all persons currently under age 55 could participate in and benefit from personal accounts, we anticipated that lower-wage workers would benefit the most, since they are least likely to have company-sponsored pensions at present.

Under this plan, workers who opt for a personal account would be required to forego a portion of their traditional Social Security benefit. The Commission recommended that the amount foregone depend on the amount of payroll taxes the worker elected to divert to personal accounts instead of basing the amount on the size of the personal account annuity at retirement. Under Model 2, for instance, the amount foregone equals the worker's contributions plus a 2 percent real rate of return. Consequently, a worker who expected personal account investments to yield a real return higher than 2 percent would anticipate being better off opting for the personal account. Because workers who opt for personal accounts expect to receive the full amount of each dollar of investment returns above the 2 percent threshold, the policy does not distort incentives for saving. The Commission considered, but did not adopt, an alternative that would condition first-tier benefits on the actual amount that workers had accumulated in their personal accounts at retirement. This approach, called a "clawback," suffers from the drawback that it reduces the marginal return on savings and, therefore, distorts savings decisions. The Commission's offset policy also has the desirable feature that it minimizes possible adverse impacts of personal accounts on Social Security's progressivity. High-wage workers will forego a larger share of their traditional benefits than will low-wage workers for each dollar of personal account contributions.⁸

Administrative Considerations

Substantial discussion focused on the design of an administrative plan for personal retirement accounts (for discussion of administrative design issues, see Feldstein and Liebman, 2002; Mitchell, 1998; Shoven, 2000; and Shipman, 1999). Ultimately, the Commission proposed starting with a centralized approach, similar to the federal Thrift Saving Plan that today covers civil servants and military employees. Under this format, a single central Governing Board would collect

⁸ This outcome results from the fact that the offset is proportional to earnings, while traditional benefits rise less than proportionately with earnings. The Commission also considered an alternative approach in which the percentage of Social Security benefits a worker would be required to forego would depend upon the percentage of payroll taxes the worker diverted to his personal account. Under such an approach, a worker who diverted 20 percent of his payroll taxes to personal accounts would forego, say, 20 percent of his benefits. This approach was rejected because it would create a greater incentive for high-wage workers to opt for personal accounts than it would for low-wage workers, and it would not preserve as much of Social Security's progressivity as the Commission's preferred approaches.

contributions, manage records and, via a competitive process, select private sector managers who would invest participant assets. In addition, record keeping and benefit payments would be handled by the Governing Board or would be outsourced.

This proposal strikes a balance between the scale economy benefits from centralization of record keeping versus the attractiveness of enhanced competition. The Commission proposed that after a few years, plan participants would be permitted to move their investments from the centralized system into a more decentralized one with licensed, private money managers. This two-phase approach should avoid the need to regulate fund loads or charges, since a combination of competition and information provided by the central fund administrator was anticipated to drive down fees and charges.

Investment Options in the Personal Accounts

When analyzing the investment options offered under a system of personal retirement accounts, the Commission proposed to offer investors a limited choice of indexed portfolios, including a Government Securities Investment fund that held mainly short-term U.S. Treasury securities; a Fixed Income Index Investment fund that tracks a U.S. bond market index; a Common Stock Index Investment fund tracking the Standard & Poor's 500 Index of large-company stock; a Small Capitalization Stock Index Investment fund that tracks the Wilshire 4500 stock index; and an International Stock Index Investment fund that holds corporate assets located in Australia, Europe and the Far East. In addition, the Commission recommended that one investment option include Government Treasury Inflation-Protected Securities. Those who later elect to move their accounts to private management would gain some additional choices, but they would still have to invest in low-cost diversified accounts. In all cases, the accounts would be required to invest in a broad range of corporations across all major commercial sectors. Further, the amount of the fund invested in any particular corporation could not significantly exceed the market value of that corporation, relative to other firms in the fund.

Recent economic research also suggests the high value of offering participants a portfolio balanced between stocks and bonds, should workers and retirees fail to indicate how to allocate their personal retirement accounts (Benartzi and Thaler, 2001; Choi et al., 2002; Mitchell and Utkus, 2002). We therefore proposed that investors should be permitted to change the investment allocations in their personal retirement accounts annually. This provision would offer some flexibility, yet it would also encourage participants to think of their investments as "long-term savings" rather than short-term funds.

The Key Role of Actuarial Assumptions

In keeping with past practice of having serious proposals thoroughly vetted, the financial impact of all the Commission's reform plans were scored by the Office of the Chief Actuary at the Social Security Administration. This office provided the

actuarial assumptions used in cost and benefit projections developed under advisement from the Social Security Board of Trustees. Since the actuarial assumptions used by Social Security are well known and easily available at (<http://www.ssa.gov>), we offer a sense of some key magnitudes rather than providing detail. In all cases, the projections assume a real expected future return on stocks of 6.5 percent per year. Corporate and Treasury bonds are assumed to deliver a real rate of return of 3.5 percent and 3.0 percent, respectively. The actuary's projections further assume that a typical participant holds a balanced fund, with half of the assets in a broadly diversified equity portfolio and half in a similarly diversified bond portfolio. The administrative costs of private retirement accounts are assumed to total 30 basis points (0.3 percent of the account balance).

Commissioners regarded these assumptions as conservative. The U.S. government's Thrift Savings Plan, for example, operates with administrative costs of only 8 basis points. Also, under the assumed rates of return and portfolio composition, the expected real return net of expenses for a 50/50 stock/bond portfolio is 4.6 percent, a return lower than that used in many academic and policy studies.

Access to Funds

Commissioners thought hard about whether to permit preretirement access to the funds in personal retirement accounts. On the one hand, all agreed that retirement funds should be earmarked for old age, implying that workers should not be permitted to consume the assets if it would leave them dependent on government antipoverty programs during retirement. On the other hand, a clear appeal of personal retirement accounts is that they grant workers ownership over their own assets. This latter view was of particular concern for groups anticipating below-average life expectancies, such as African-Americans, the ill, and the lifetime poor. Ultimately, the Commission concurred that personal account funds would have to be preserved until retirement. Preretirement stringencies should not be the cause of individuals facing even greater stringencies during retirement. This philosophy is in keeping with current Social Security policy, since benefits now cannot be accessed prior to retirement nor used as collateral for a loan.

Commission members also felt strongly that retirees should have a range of possibilities for making withdrawals from their personal accounts. Drawing on economic studies of annuity markets (Brown et al., 2001), our models proposed that account distributions could take the form of an annuity or periodic withdrawals, similar to the current 401(k) system. The Commission recommended that a portion of funds above a minimum threshold would be accessible as a lump-sum distribution. The threshold amount would be designed so that the yearly income received from an individual's Social Security benefit plus the joint annuity (if married) would protect either spouse from falling below the poverty line during retirement. Remaining assets could be bequeathed at death. Because lower-income households have shorter life expectancies, the bequest option adds to the Social Security system's progressivity and would offer better protection to widows than

would today's Social Security rules. In the case of divorce, personal retirement account assets accumulated during marriage would be divided between divorcing partners. This step would enhance protection of former spouses as compared to today's Social Security rules that do not provide benefits to former spouses from marriages lasting under ten years.⁹

Another topic of debate pertained to how participants might invest their personal retirement account assets after retirement and whether they might be encouraged to switch to more conservative investments at some given age. The main results assumed that a typical individual would hold personal retirement funds in a 50/50 balanced stock and bond fund during both the accumulation and decumulation periods (with the assumed return mentioned above of 4.6 percent after inflation). After any lump-sum distributions, Tier II benefits would be received in the form of a variable annuity, depending on the returns received in the underlying investment portfolio. For those preferring greater certainty, and because the current Social Security system pays benefits entirely as an inflation-indexed annuity, Commissioners also proposed permitting inflation-indexed annuities during the retirement phase.¹⁰ Brown, Mitchell and Poterba (2000) show that under plausible assumptions about risk aversion, retirees already receiving a real annuity under the traditional Social Security system would prefer a Tier II of variable annuities with a higher return rather than more real annuities.

In this context, it is worth noting that only about one-quarter of total Social Security assets would be held in stocks by those opting for personal accounts, including both Tier I traditional system and Tier II personal retirement accounts.

⁹ All the Commission's reform plans recognize the historical relationship between Disability Insurance benefits and Old-Age and Survivors Insurance defined benefits. Today, the Primary Insurance Amount benefit formula is a common one, and the programs' finances are affected in similar ways by demographic changes. Hence, Disability Insurance program outlays are projected to rise by 45 percent as a percentage of payroll over the next 15 years, and Disability Insurance costs will exceed Disability Insurance tax revenue starting in 2009. The Commission acknowledged that a reformed Social Security system must take into account the fact that planned retirement is a very different life event from an unplanned onset of disability. Personal retirement accounts are intended to replace partially the defined benefit component in Social Security. Disability Insurance beneficiaries with abbreviated work histories might have relatively low account balances. Some may argue that this justifies isolating the Disability Insurance defined benefit structure from any changes that would affect Old-Age and Survivor's Insurance defined benefits, but testimony provided to the Commission indicated that many Disability Insurance beneficiaries sought to maintain a parallel structure for both Disability Insurance and Old-Age and Survivor's Insurance. We recommended further research to determine the optimal approach to balancing these adequacy and equity concerns in the Disability Insurance system. For an introductory survey of disability programs in this journal, see Burkhauser and Daly (2002).

¹⁰ Another controversial question had to do with the financial and economic costs and benefits of providing guaranteed investments in the context of personal retirement accounts. Even the inflation-indexed annuities would only be guaranteed to rise with inflation—not guaranteed in their real return. The Commission elected not to propose such guarantees, instead calling for more research on the likely structure of such investment options. For relevant research on pension guarantees, useful starting points include Bodie (2001); Bodie and Merton (1993); Feldstein and Rangelova (2000); Lachance and Mitchell (2002); and Smetters (2002a).

Benefits Under the Reformed System

When comparing benefits under the current system and the several alternatives proposed, the issue arose as to whether one should adjust personal account annuities for financial risk. After discussion, Commissioners concluded that the best approach was to present all annuities in terms of their expected values and to also discuss the risks of each annuity in a qualitative manner. With this thought in mind, we summarize the reform plans by referring to expected projected retiree benefits under the alternative reform proposals.

Results are summarized in Table 1, where anticipated outcomes are illustrated for “low,” “average” and “high” earners, under different policy scenarios (in 2001 dollars). These categories, developed by the Social Security actuaries, were specified such that a low earner in 2001 received a lifetime average of approximately \$16,000, whereas a medium earner averaged about \$35,300 per year and a high earner \$56,400. Results in Table 1 depict benefits received at Social Security’s normal retirement age currently and in 2052, since the latter represents benefits anticipated by a worker covered by the new system over an entire work life.

In Table 1, the first row of each panel labeled “Today’s benefit” indicates today’s benefit payments delivered to a worker at each lifetime earnings level. The next three rows depict benefits anticipated under a Model 2 reform for workers who elected personal accounts, allowing for alternative investment portfolios. The inflation-adjusted medium return is 4.6 percent, while the lower yield is based on an assumed real return of 2.7 percent, and the high yield plan assumes a real return of 4.92 percent (Commission to Strengthen Social Security, 2001b, pp. 18–19). To illustrate the comparisons, a lifetime low-wage worker retiring today receives benefits worth \$637 per month. This is well below benefit payouts projected for a low-wage employee opting for Personal Accounts, which would amount to \$870–\$1100 per month. The row labeled “Current Program Payable” illustrates that benefits of only \$713 could be financed with currently legislated tax rates. We note that reformed system benefits for low and medium earners exceed current and payable future benefits. The final row, titled “Scheduled Benefits,” refers to the benefits payable if taxes were raised to cover projected shortfalls. For the low earner, a scheduled (but not currently affordable) benefit of \$986 is below the Commission’s Model 2 payout, assuming a medium portfolio yield.

A key lesson from Table 1 is that *all* workers who opt for personal accounts under Model 2 can expect retirement benefits at least as high as, and in some cases much larger than, today’s benefits adjusted for inflation. Most would also anticipate payments higher than those the system can afford to pay in the future under current law, and even conservative low earners would receive higher benefits than the current program promises. The gains relative to benefits the current system can afford to pay are more modest, however. This illustrates the point that while

Table 1

**Projected Monthly Social Security Benefits Under Alternative Scenarios;
Projected to 2052, Under Model 2 Structure**
(in constant 2001 dollars)

I. Lifetime low-wage earner	
Today's benefit	\$ 637
Projected benefit with personal account:	
Low yield	867
Medium yield	1,050
High yield	1,090
Current program payable	713
Scheduled benefit	986
II. Lifetime medium-wage earner	
Today's benefit	\$1,052
Projected benefit with personal account:	
Low yield	1,204
Medium yield	1,525
High yield	1,595
Current program payable	1,179
Scheduled benefit	1,628
III. Lifetime maximum-wage earner	
Today's benefit	\$1,366
Projected benefit with personal account:	
Low yield	1,565
Medium yield	1,907
High yield	1,983
Current program payable	1,557
Scheduled benefit	2,151

Source: CSSS Final Report (2001).

Note: These categories, developed by the Social Security actuaries, are specified (in 2001 dollars) such that a lifetime "low" earner would have averaged approximately \$15,900 per year, whereas the medium earner averaged \$35,300 per annum, and the high earner \$56,400.

Model 2's personal accounts can be expected to raise retirement income received from the Social Security system (combining Tier I and Tier II), rates of return would not be anticipated to be substantially higher.

Inasmuch as the system is progressive, the pattern of benefits paid will vary by earnings levels, as we have shown. Under Model 2, today's teenager planning to retire in 2052 with a lifetime of medium earnings could expect Social Security payments 42 percent larger than today's benefits. Results are even better for low earners, since the increment would be an even larger 65 percent in real terms, compared to today's retiree. High-wage workers would also anticipate a benefit increase, but the percentage increment is lower, at 40 percent, in keeping with the progressive intent of the reform. The greater progressivity results from the fact that personal retirement accounts are initially capped at \$1,000, so low-wage workers earning \$25,000 or less can redirect 4 percentage points of their payroll taxes, but workers earning above \$25,000 could redirect only a smaller percentage.

Additionally, as was noted above, improved protections are provided against poverty, so benefit levels paid to all low-wage workers would be raised the most.

In sum, under Model 2, Tier I benefits would deliver higher replacement rates to low earners than can be financed under current law, and absolute benefits would increase for all under the first pillar. Tier II offers investors the option of doing better on the whole, as compared to the current system, and even conservative low- and medium-earner workers would expect to do better than what can be afforded with current tax financing.

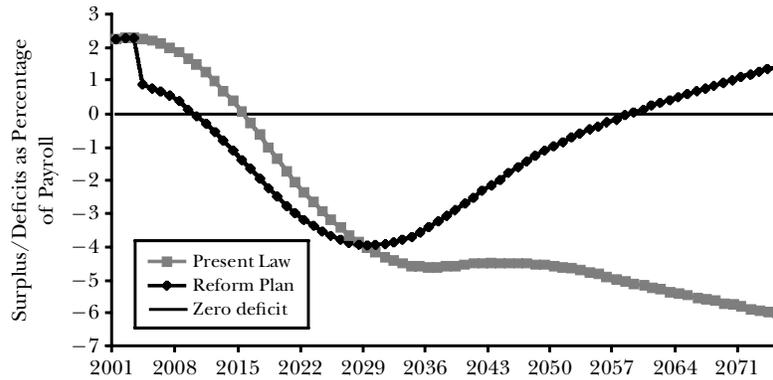
Impact on Federal Government Finances

Measuring the impact of proposed Social Security reforms on the federal government's finances is not straightforward when moving to a funded system. One reason is that neither the annual federal budget nor the ten-year projections currently recognize the existence of long-term Social Security liabilities, since these liabilities arise outside the ten-year window traditionally used in policy projections. Nevertheless, failure to recognize this debt can create the false appearance among policymakers that there is little fiscal benefit from moving from a primarily pay-as-you-go system to a funded system that reduces long-term Social Security liabilities. A related problem is that traditional tools for measuring the impact of reform, such as the long-term actuarial balance, are ill-suited to capturing the full financial benefit of moving to a funded system.

Perhaps the best place to see this is by taking a qualitative look at the impact of particular reforms on Social Security finances. Figure 1 indicates the impact of Model 2 on Social Security's financial shortfall over the next 75 years. These estimates assume two-thirds participation rates in the personal retirement accounts (results for alternative participation results appear in Commission's report). As Figure 1 shows, under current law, Social Security is expected to run cash surpluses until 2016, after which point, annual deficits become a permanent and growing problem. Annual deficits as a percentage of taxable wages are expected to rise to nearly 2 percent by 2020, 4 percent by 2030 and to over 6 percent by 2075, the last year of Social Security's actuarial horizon. Under Model 2, the annual deficit begins a few years sooner, in 2010. It then grows more slowly, reaches its maximum at 4 percent of payroll in 2030 and shrinks thereafter. Surpluses are first achieved in 2059 and continue to rise thereafter. Consequently, the reform proposal ultimately replaces current law's permanent and rising deficits with rising surpluses. By the end of the 75-year actuarial horizon, the surpluses are expected to reach 1.4 percent of payroll.

Perhaps the most interesting question for policymakers is how to quantify the improvement in Social Security's finances from the reform proposal. One useful summary statistic is the reduction in the amount of additional government revenues required to finance promised benefit payments. Yet even this seemingly

Figure 1

Impact of Proposed Reform (Model 2) on Social Security Cash Flows

Source: CSSS Final Report (2001).

straightforward statistic is subject to measurement problems, because the Social Security actuaries assume a fixed 75-year time horizon. This truncates the returns that accrue in the form of lower traditional Social Security liabilities for persons who opt for personal accounts. According to calculations performed for the Commission, the present value of the reduced revenue requirements under Model 2 excluded because of the fixed time horizon totals about \$1 trillion dollars.

Keeping in mind this measurement problem, Table 2 compares the change in governmental revenue required under Model 2, with the traditional measure of Social Security's financial shortfall under current law. The traditional measure is the present value of the difference between Social Security's outgo and its income over the 75-year actuarial horizon, less the balance in the fund at the beginning of the time period. This measure, when expressed as a percentage of taxable payroll over the same time horizon, is called the actuarial balance. In 2001, the actuarial balance was -1.86 percent, or if measured in present discounted value terms, the trustees estimated the shortfall as \$3.2 trillion.

When the Social Security actuaries examined Model 2, they calculated both the reduction in Social Security surpluses during years in which Social Security runs surpluses and the change in deficits during years in which Social Security incurs deficits. The present value of this change is \$2.0 trillion: in other words, Model 2 costs 63 percent less as compared to the government's revenue shortfalls under scheduled benefits and current tax law. This set of estimates implicitly assumes that past Social Security surpluses were "saved"—that is, they were used to reduce the national debt and, hence, are available to finance future deficits. The inclusion of future surpluses in the traditional measure implicitly assumes that future surpluses will be similarly used and, hence, will be available to finance future deficits. Nevertheless, as we have argued above, Congress has previously used Social Security

Table 2

Impact of Social Security Reform on Government's Revenue Requirements

	<i>Current Law Revenue Required (\$PV trillions)</i>	<i>Reform Model 2</i>	
		<i>Change in Revenue Required (\$PV trillions)</i>	<i>Percent Reduction</i>
Traditional measure (Congress "saves" all surpluses)	\$3.2	-\$2.0	63%
Alternative 2 (Congress spent past surpluses, but "saves" future surpluses)	\$4.1	-\$2.0	49%
Alternative 3 (Congress "spends" all surpluses)	\$5.1	-\$2.3	45%

Source: Authors' computations, CSSS Final Report (2001).

surpluses to finance consumption related spending increases and tax reductions, rather than for debt reduction. A similar pattern could reasonably be expected for the future.

Table 2 also indicates that moving to a funded system inevitably requires an investment, which may be viewed as the net additional general revenue requirement associated with the proposed reform. For Model 2, from 2005 to 2009, additional resources are needed to insure that promised benefits can be paid and personal accounts can be funded. In dollar terms, transition financing requirements for Model 2 would initially be comparatively small, \$4 billion in 2010, and they would grow to a maximum of just over \$73 billion in 2016 (measured in 2001 dollars). Thereafter, the amount of new cash requirements for the reformed system would diminish. Starting in 2029, the new system would require less general revenue than the old one on a permanent basis. Thus, Model 2 requires \$0.9 trillion, or about half of 1 percent of GDP in present value terms, between now and 2029. The Commission concluded that such an amount would not pose major economic problems, though it could possibly raise political concerns. Of course, putting the program on a long-term sustainable footing has some obvious rationale, as well.

Conclusions

Commissioners concurred that the evidence is clear: Social Security reform is both economically necessary and socially imperative, and the sooner reforms are implemented, the better. If nothing is done to reform the system, low-earners will be particularly vulnerable to benefit cuts, and all workers as well as retirees will confront substantial economic insecurity in old age. The Commission's proposed

reforms would also put Social Security on a self-financing basis for the first time in over a quarter of a century, consistent with its founder Franklin Roosevelt's vision. Our work shows that personal retirement accounts can play an important role in a reformed, financially sustainable, and more progressive Social Security system. We also anticipate that many workers would elect personal accounts when they are presented with a clear statement of the substantial political risks facing the current Social Security system.

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References

- Aaron, Henry J. and John B. Shoven.** 1999. *Should the United States Privatize Social Security?* Cambridge, Mass., London, England: MIT Press.
- Aaron, Henry, Barry Bosworth and Gary Burtless.** 1988. *Can America Afford to Grow Old?* Washington, D.C.: Brookings Institution.
- Advisory Council on Social Security.** 1979. "Report of the 1979 Advisory Council on Social Security." Committee on Ways and Means, House of Representatives, 96th Congress, 1st Session, December 7.
- Advisory Council on Social Security.** 1997. *Report of the 1994–1996 Advisory Council on Social Security, Volume I: Findings and Recommendations.* Washington, D.C.: Advisory Council on Social Security.
- Auerbach, Alan, Jagadeesh Gokhale and Lawrence Kotlikoff.** 1991. "Generational Accounts: A Meaningful Alternative to Deficit Accounting," in *Tax Policy and the Economy, Volume 5*. D. Bradford, ed. Cambridge, Mass.: MIT Press, pp. 55–110.
- Auerbach, Alan J., Jagadeesh Gokhale and Laurence J. Kotlikoff.** 1994. "Generational Accounting: A Meaningful Way to Evaluate Fiscal Policy." *Journal of Economic Perspectives*. Winter, 8:1, pp. 73–94.
- Benartzi, Shlomo and Richard Thaler.** 2001. "Naïve Diversification Strategies in Retirement Savings Plans." *American Economic Review*. 91:1, pp. 79–98.
- Blahous, Charles P.** 2000. *Reforming Social Security.* Westport, Conn., and London: Praeger.
- Board of Trustees.** 2001. *The 2001 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance TrustFunds.* Washington, D.C.: U.S. Government Printing Office, March.
- Bodie, Zvi.** 2001. "Financial Engineering and Social Security Reform," in *Risk Aspects of Social Security Reform*. J. Campbell and M. Feldstein., eds. Chicago: University of Chicago Press, chapter 8.
- Bodie, Zvi and R. Merton.** 1993. "Pension Benefit Guarantees in the United States: A Functional Analysis," in *The Future of Pensions in the United States*. R. Schmitt, ed. Philadelphia: University of Pennsylvania Press, pp. 194–234.
- Boskin, Michael J.** 1982. "Alternative Social Security Reform Proposals." Paper presented to the National Commission of Social Security Reform, August 20.
- Brown, Jeffrey R., Olivia S. Mitchell and James M. Poterba.** 2000. "The Role of Real Annuities and Indexed Bonds in an Individual Accounts Retirement Program," in *Risk Aspects of*

Investment-Based Social Security Reform. John Y. Campbell and Martin Feldstein, eds. Chicago: University of Chicago Press, pp. 321–60.

Brown, Jeffrey et al. 2001. *The Role of Annuity Markets in Financing Retirement*. Cambridge, Mass.: MIT Press.

Burkhauser, Richard V. and Mary C. Daly. 2002. "Policy Watch: U.S. Disability Policy in a Changing Environment." *Journal of Economic Perspectives*. Winter, 16:1, pp. 213–24.

Choi, James et al. 2002. "Defined Contribution Pensions: Plan Rules, Participant Decisions and the Path of Least Resistance," in *Tax Policy and the Economy, Volume 16*. James Poterba, ed. Cambridge, Mass.: MIT Press, pp. 67–113.

Cogan, John. 1998. "The Congressional Response to Social Security Surpluses, 1935–1994," part of *Essays in Public Policy*. Stanford, Calif.: Hoover Institution, No. 92.

Commission on the Social Security "Notch" Issue. 1994. "Final Report on the Social Security 'Notch' Issue." Washington, D.C., December 31.

Commission to Strengthen Social Security (CSSS). 2001a. "Interim Report." Washington, D.C., August.

Commission to Strengthen Social Security (CSSS). 2001b. "Strengthening Social Security and Creating Personal Wealth for all Americans." Final Report, Washington, D.C., December.

Committee on Ways and Means, U.S. House of Representatives. 2000. *2000 Green Book*. Washington, D.C.: U.S. Government Printing Office, October.

Congressional Budget Office. 1998. "Social Security and Private Saving: A Review of the Empirical Evidence." Report, July.

Consultant Panel on Social Security. 1976. "Report of the Consultant Panel on Social Security." Joint Committee Report, 94th Congress, 2nd Session, August.

Coronado, Julia Lynn, Don Fullerton and Thomas Glass. 2000. "The Progressivity of Social Security." NBER working paper, February.

Crain, Mark W. and Michael L. Marlow. 1990. "The Causal Relationship Between Social Security and the Federal Budget," in *Social Security's Looming Surpluses: Prospects and Implications*. Carolyn Weaver, ed. Washington D.C.: AEI Press, pp. 119–34.

Derthick, Martha. 1977. *Policymaking for Social Security*. Washington, D.C.: Brookings Institution.

Feldstein, Martin S. 1996. "The Missing Piece

in Policy Analysis: Social Security Reform." *American Economic Review*. May, 86:2, pp. 1–14.

Feldstein, Martin S. and Jeffrey B. Liebman. 2001. "Social Security." NBER Working Paper No. 8451, September.

Feldstein, Martin S. and Jeffrey B. Liebman. 2002. *The Distributional Aspects of Social Security and Social Security Reform*. Chicago: University of Chicago.

Feldstein, Martin S. and Elena Rangelova. 2000. "Accumulated Pension Collars: A Market Approach to Reducing the Risk of Investment-Based Social Security Reform." NBER Working Paper No. 7861, August.

Feldstein, Martin and Andrew A. Samwick. 1998. "Potential Effects of Two Percent Personal Retirement Accounts." *Tax Notes*. May 4, pp. 615–20.

Feldstein, Martin S. and Andrew Samwick. 2001. "Potential Paths of Social Security Reform." NBER Working Paper No. 8592, November.

Gramlich, Edward M. 1996. "Different Approaches for Dealing with Social Security." *Journal of Economic Perspectives*. Summer, 10:3, pp. 55–66.

Greenspan, Alan. 1998. Testimony before the Senate Committee on Banking, July 21.

Gruber, Jonathan and David Wise. 2002. "Social Security Programs and Retirement Around the World: Micro Estimation." NBER working paper, December.

Gustman, Alan L. and Thomas L. Steinmeier. 2000. "How Effective is Redistribution Under the Social Security Benefit Formula?" NBER working paper, March.

Haveman, Robert. 1994. "Should Generational Accounts Replace Public Budgets and Deficits?" *Journal of Economic Perspectives*. Winter, 8:1, pp. 95–111.

Hsiao, William. 1979. "An Optimal Indexing Method for Social Security," in *Financing Social Security*. Colin D. Campbell, ed. Washington, D.C.: American Enterprise Institute.

Koitz, David. 2001. *Seeking Middle Ground on Social Security Reform*. Stanford, Calif.: Hoover Institution Press.

Koitz, David, Geoffrey Kollmann and Dawn Nuschler. 2001. "Social Security: What Happens to Future Benefit Levels Under Various Reform Options." Congressional Research Service, Domestic Social Policy Division, August 20.

Lachance, Marie-Eve and Olivia S. Mitchell. 2002. "Understanding Individual Retirement Guarantees." NBER working paper.

Leibman, Jeffrey B. 2001. "Redistribution in the Current U.S. Social Security Program." NBER working paper.

Mitchell, Olivia. 1998. "Administrative Costs of Public and Private Pension Plans," in *Privatizing Social Security*. Martin Feldstein, ed. Chicago: University of Chicago Press, pp. 403–56.

Mitchell, Olivia S. and Steve Utkus. 2002. "Company Stock and Retirement Plan Diversification." NBER working paper.

Moynihan, Daniel Patrick. 1998. "Social Security Saved!" Address to the Institute of Politics: Spring Exercise on Social Security Reform, John F. Kennedy School of Government, Harvard University, March 16.

Munnell, Alicia and Lynn Blais. 1984. "Do We Want Large Social Security Surpluses?" *New England Economic Review*. September/October, pp. 5–21.

President's Commission to Strengthen Social Security. 2001. *Strengthening Social Security and Creating Personal Wealth for All Americans*. December.

Schieber, Sylvester J. and John B. Shoven. 1999. *The Real Deal: The History and Future of Social Security*. New Haven and London: Yale University Press.

Schwarz, Anita. 2001. "International Experience with Private Retirement Accounts." Testimony before the President's Commission to Strengthen Social Security, September 6.

Shipman, William. 1999. "Administrative Challenges Confronting Social Security Reform." Testimony before the House Budget Committee Task Force on Social Security, April 27.

Shoven, John B., ed. 2000. *Administrative Aspects of Investment-Based Social Security Reform*. Chicago: University of Chicago.

Shoven, John B. 2001. "Implementing a Two-Tier Social Security Program." Testimony to the President's Commission to Strengthen Social Security, September 6.

Smetters, Kent. 2002a. "Controlling the Cost of Minimum Benefit Guarantees in Public Pension Conversions." *Journal of Pension Economics and Finance*. March, 1:1, pp. 9–33.

Smetters, Kent. 2002b. "Has Mental Accounting Been Successful in Saving Social Security Surpluses?" Working paper, The Wharton School, University of Pennsylvania.

Weaver, Carolyn L. 1982. "The Crisis in Social Security." Duke University Policy Studies Working Paper.

Weaver, Carolyn L., ed. 1990. *Social Security's Looming Surpluses: Prospects and Implications*. Washington, D.C.: AEI Press.

World Bank Pensions Primers. Various dates. Available at <http://wbln0018.worldbank.org/HDNet/HDdocs.nsf/view+to+link+webpages/1ff73e261420a8f4852568ac006bb4e9?OpenDocument>.