

Social Security Reform: An Overview

Recent decades have seen a trend toward longer life expectancy and reduced birth rates across the globe. This is good news—the pressures created by rapid population growth are being relaxed, and people are more likely to live to old age—but it creates problems for programs such as Social Security, which are designed to provide for the consumption needs of the elderly. In the United States, the retirement of the baby boom generation will result in a decrease in the number of workers per Social Security beneficiary from 3.3 now to 2.0 in the year 2030. Continued increases in life expectancy and slow growth in the working-age population imply that this ratio is likely to continue to decrease, even as the baby boom generation passes from the scene later in the century.

The decrease in the ratio of workers to beneficiaries will necessitate changes in our Social Security program. Currently, Social Security payroll tax revenue exceeds benefit expenditures, and the trust fund is growing. However, expenditures are expected to exceed tax revenue starting in 2012, and without changes in the program the trust fund is likely to be exhausted in 2029. Some combination of payroll tax increases and benefit cuts, or a more radical restructuring of the program, will be needed to keep Social Security solvent.

The fiscal problems faced by Social Security are just one component of the more general problem faced by society: How do we provide for the consumption needs of an increasingly aged population? In addition to using Social Security benefits to finance their consumption, the elderly rely on private pensions, personal savings, labor earnings, other government transfers, and intra-family transfers. These other transfer mechanisms will also be strained as the population ages. And if Social Security is cut back, either the consumption of the elderly will be reduced (relative to what it would be under current policy) or the difference will have to be made up through the other sources of spending.

Social Security policy decisions made in the next few years will have a large impact on the economic well-being of both future retirees and

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workers. Aside from the obvious impact of possible changes in the structure of Social Security benefits on the welfare of retirees, Social Security reform may cause changes in national saving, labor markets, and financial markets that affect all members of society. Because of the potential importance of these changes to the economy and to future living standards, the Federal Reserve Bank of Boston devoted its forty-first annual economic conference, convened in June 1996, to *Social Security Reform: Links to Saving, Investment, and Growth*.

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The first paper presented at the conference, by Steven A. Sass and Robert K. Triest, examines the nature of the problems facing Social Security and discusses two particular dimensions of reform: whether Social Security should be moved in the direction of increased pre-funding, and whether it should retain its current defined-benefit structure or adopt a defined-contribution format. Subsequent papers examine how reform would affect specific aspects of the economy. Theresa J. Devine addresses the question of how reform would affect labor markets. Eric M. Engen and William Gale examine the impact on saving. Henning Bohn models the impact of demographic change and Social Security reform on financial markets and risk-bearing. Barry P. Bosworth and Gary Burtless examine the impact of reform in an open economy setting. The conference also included two panels, one on the experience of four other countries and a concluding policy panel, and two addresses, one by Edward D. Berkowitz on the historical origins of Social Security and one by Edward M. Gramlich, chair of the 1994–1996 Advisory Council on Social Security, relating his perspectives on reform.

Not unexpectedly, the conference did not produce a consensus on the “right” way to reform Social Security. However, several themes and broad areas of agreement did emerge.

A certain ambiguity about the purpose of reform was apparent at the conference. Is the goal of reform simply to avert Social Security’s long-run fiscal imbalance? Or is it to increase national saving? If increased saving is the goal, presumably this is not itself the ultimate goal, but merely a means toward achieving higher future living standards.

Although many reform proposals combine increased pre-funding with the creation of privatized individual accounts in Social Security, conference participants often drew a distinction between these two aspects of reform. It was generally agreed that increased pre-funding, rather than privatization per se, was the key way in which reform could increase national saving. Privatization of Social Security might be a politically feasible means of achieving increased pre-funding, but by itself would not necessarily increase saving.

There was also a consensus at the conference that Social Security reform offers no opportunity for a free lunch. Social Security is often criticized for not delivering a competitive implicit rate of return on the payroll tax contributions made by today’s young. But the low current rate of return stems from the pay-as-you-go nature of the system. The initial generations receiving benefits were subsidized, and current payroll tax receipts are largely devoted to paying previously accrued benefits. While reform may affect the

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implicit rate of return on Social Security contributions received by future retirees, it cannot undo the effects of above-market rates of return awarded to the initial generations. Reforms that promise future generations will receive market rates of return on their contributions must rely on some mechanism, such as the levying of a temporary tax, to satisfy accrued Social Security benefit obligations.

Another mechanism to improve future rates of return while still satisfying the accrued obligations would be the investment of the Social Security trust

fund in riskier assets, such as corporate equities. But this buys a higher expected return at the cost of increased risk, and brings up the question of who would bear this risk. In addition to risks in financial markets, Social Security is subject to demographic and economic risks. An unexpected increase in longevity, for example, would increase benefit costs under current Social Security rules. Should the benefits of current workers be protected when longevity increases more than expected, with future workers bearing the cost? Similar questions come up with respect to economic changes. If real wages grow faster than expected, should retirees share in this bounty through the Social Security system?

One pervasive theme was the great uncertainty regarding the future and the possible effects of reform. Demographic shifts can cause major changes in the economy, although the precise nature of the causal mechanisms is not yet well understood. The movement of the baby boom generation into adulthood had a major impact on labor markets and consumption patterns. As the baby boomers start to retire, further changes should be expected. Since the magnitude of these changes is difficult to predict, the very long-run forecasts needed for analysis of Social Security reform are subject to much uncertainty.

Further uncertainty is introduced into the analysis by our very incomplete knowledge of how Social Security reform would affect behavior. For example, it is difficult to predict how individuals will change their private saving behavior, or how firms will change their pension plans, in response to changes in Social Security. At the conference, some tension was apparent between researchers' desire to produce conclusive analyses of potential reforms and their recognition of the high degree of uncertainty inherent in this exercise.

A third source of uncertainty arises from the lack of detailed information about how reform plans would be put in practice. For example, the degree to which privatized defined-contribution reform plans would stimulate private saving depends in part on the details of rules governing withdrawals from the privatized accounts.

Opening Address: The Transformation of Social Security

Edward D. Berkowitz opened the conference with an analysis of the historical process by which Social Security was transformed into a program

closely resembling our current system. At the time of its creation in 1935, political support for old-age social insurance was weak, and Berkowitz believes its inclusion in the Economic Security Bill passed by Congress was due to a combination of President Roosevelt's political clout and its packaging with provisions more popular in Congress, such as grants-in-aid to the states.

The original legislation envisioned the accumulation of a massive reserve fund, the interest on which would fund over one-third of benefit payments by 1980. Reserve financing proved to be very controversial, however. In the 1936 election, Republicans charged that Social Security contributions would be

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used by Congress to finance wasteful spending rather than kept in reserve to help pay future retirement benefits. More liberal groups, such as the American Federation of Labor, also criticized the reserve funding plan. And from the new perspective of Keynesian economics, accumulating substantial reserves during the Great Depression made little sense.

The controversy resulted in the formation of the first Social Security advisory council, whose recommendations formed the basis of the Social Security amendments of 1939. This legislation reduced the magnitude of the reserve fund buildup by starting benefit payments earlier and introducing survivor benefits. Congress subsequently delayed enactment of scheduled payroll tax increases in the 1940s, further reducing the accumulation of the reserve fund.

The 1950 Social Security amendments produced the next major change to the program. Berkowitz points out that in 1950 twice as many people were receiving old-age assistance through state welfare programs as were receiving Social Security benefits,

and Social Security faced the prospect of continuing to be eclipsed by welfare programs in the future. The 1950 amendments averted that situation by extending Social Security coverage to new groups such as agricultural workers and nonfarm self-employed workers, and by increasing Social Security benefits, making it increasingly attractive relative to welfare. This set the stage for further expansion of Social Security, leading to the system we have today.

The early history of Social Security sketched by Berkowitz shows that some of the issues that face the system today were already present in the system's formative years, in particular, the question of the degree to which the system should be pre-funded. The question of funding was also a focus of the first conference paper.

Social Security: How Social and Secure Should It Be?

Steven A. Sass and **Robert K. Triest** open their paper with a review of the accomplishments of the Social Security system. The system has been very successful in reducing poverty among the elderly, and it provides a secure and predictable source of income to retirees. However, the continued fiscal health of Social Security is threatened by the aging of the population. Projections that large future payroll tax rates will be needed to keep Social Security and Medicare solvent raise the spectre of increased tax-induced distortions, and they make more desirable the prospect of a reform that would result in workers treating more of the tax as if it were a voluntary contribution. Increasing future tax rates also raise questions of generational equity and provide a motivation for reforms that would increase the degree to which each generation contributes enough to fund its own retirement benefits.

Increased pre-funding of Social Security is one policy option often proposed to address the problems created by the demographic shifts. Sass and Triest point out that increased funding has two non-exclusive goals: to restore Social Security's fiscal solvency, and to increase national saving and future living standards. The fiscal solvency issue is fairly straightforward and can be relatively easily resolved. How pre-funding would affect national saving and living standards is more complex. The link between pre-funding and national saving depends on what happens to saving outside the Social Security system, such

as saving or dissaving by other government units and private pension plans. If increased pre-funding does result in an increase in national saving, consumption must decrease in the short run. Higher living standards in the future would come at the expense of a lower standard of living today.

Many reform proposals would move at least part of Social Security from a defined-benefit to a defined-contribution structure. In a defined-benefit plan, retirement benefits are a fixed function of past earnings,

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years of employment, and possibly other factors. In contrast, defined-contribution plans are characterized by rules specifying the level of contributions into individual accounts, and the pension income available to retirees depends upon the investment performance of the accounts. Sass and Triest discuss the relative merits of the two types of pension plans, and they point out that fewer differences are to be found between the current Social Security system and proposed quasi-privatized, defined-contribution alternatives than between typical private sector defined-benefit and defined-contribution plans. The extent to which a defined-contribution variant of Social Security would meet the system's social insurance goals, such as prevention of poverty among the elderly, would depend on the details of the new system's structure. One essential difference between defined-contribution and defined-benefit variants of Social Security, however, is the vulnerability of workers to changes in asset prices and rates of return. The current system protects workers from this source of risk, but a defined-contribution system would not.

In her comments, **Diane J. Macunovich** agrees that shifting Social Security to a defined-contribution format would expose Social Security participants to greater risk; she argues that we should be sure that we are actually facing a crisis before undertaking

such a radical reform. Macunovich then presents econometric evidence suggesting that demographic factors are useful in predicting economic variables such as the growth rate of real GDP, the personal saving rate, and the growth rate of the Dow Jones Industrial Average.

Macunovich concludes that the apparently strong relationship between demographic factors and economic performance suggests that we should be cautious in reforming Social Security. The projected fiscal crisis could be alleviated to some degree if demographic shifts lead to an increase in real wage growth, while links between financial markets and demographic structure suggest that converting Social Security to a defined-contribution format might expose participants to considerable volatility in future years.

Demographics, Social Security Reform, and Labor Supply

In her paper, **Theresa J. Devine** examines the likely impact of Social Security reform on labor supply. She argues that neither economic theory nor past empirical research supports a conclusion that the privatization plans would result in increased labor supply.

For prime-age workers, who are too young to retire, it is often argued that privatization would stimulate labor supply by tightening the link between Social Security contributions and future retirement benefits. Devine notes that this argument relies on questionable assumptions. She observes that we have neither good evidence on the degree to which workers already recognize the relationship between payroll tax contributions and Social Security benefits under the current system, nor knowledge of how workers' perceptions of the benefit-tax link would change under the reform proposals. And even if reform does increase the perceived benefit-tax linkage, the effect on labor supply depends on the relative magnitudes of the resulting income and substitution effects, which work in opposite directions. Devine interprets past empirical studies as suggesting there would likely be little overall effect.

For older workers, Social Security reform might affect labor supply through its influence on retirement decisions. However, Devine notes that econometric studies examining how Social Security affects the timing of retirement must be interpreted cautiously since they generally lack detailed information on

workers' private pensions, which potentially have a strong influence on retirement decisions.

Retirement rates jump at age 62, when workers first become eligible for Social Security retirement benefits. One explanation for this phenomenon is that workers would prefer to retire earlier but cannot do so because they have insufficient funds to sustain them until they can start collecting Social Security benefits. Devine notes that if mandatory defined-contribution accounts become a feature of Social Security, then

Devine interprets past empirical studies as suggesting little overall effect on labor supply if the perceived linkage between payroll taxes and Social Security benefits were to be increased by reform.

workers might tend to retire before age 62 if they could make withdrawals from their accounts (or borrow against their account balances) at earlier ages.

Discussant **Dora L. Costa** uses historical evidence to shed light on how Social Security reform might affect retirement behavior. She notes that while the decline in the labor force participation rate of older men early in this century can be explained by rising incomes, the more recent decline cannot be so explained. Because retirement appears to have become relatively income insensitive, Costa concludes that minor modifications of our current Social Security system would have little effect on the trend toward earlier retirement.

Costa believes that a more radical reform, such as a switch to a system of mandatory individual retirement accounts, could have a larger impact on retirement behavior. Individual accounts might result in individuals spreading their leisure time more evenly over their lives, rather than concentrating it at older ages as heavily as they now do. She cautions that if the individual accounts system does not include a redistributive element, then individuals with low lifetime earnings would suffer a drop in retirement income relative to what they would receive under the current system. While retirement may be insensitive to small changes in income, the large drop in retirement income received by workers with low earnings in a

privatized system might cause them to work during what would otherwise be their retirement years.

In his comments, **John P. Rust** agrees with Devine that it is difficult to predict how Social Security reform will affect retirement behavior. Rust's own research (with Christopher Phelan) suggests that the availability of health insurance plays an important role in retirement decisions. For example, raising the age of eligibility for Medicare benefits from 65 to 67 would likely induce many individuals to delay their retirement. On the other hand, expanding Medicare to be the primary payer for older workers who have health insurance coverage through their employer might increase employment opportunities for older workers by decreasing their potential employers' fringe benefit costs. Because of effects such as these, Rust concludes it is important to model all social insurance programs serving the elderly in an integrated fashion.

Like Devine, Rust believes that privatization would have relatively little impact on the labor supply of younger workers. He thinks the largest potential labor market effect of privatization would be on post-retirement labor supply. Here the effect will depend on the details of reform, such as the degree of discretion given to individuals in deciding when to start receiving benefits, whether lump-sum disbursements are allowed, and whether individuals can borrow against their accumulations.

Effects of Social Security Reform on Private and National Saving

Eric M. Engen and **William Gale** examine the likely effect of Social Security reform on saving. In the first part of their paper they review theoretical, empirical, and simulation studies of how Social Security affects saving. Simple life-cycle models suggest that the introduction of a pay-as-you-go Social Security system will sharply reduce private saving, but more complex models yield less clear-cut predictions. Unfortunately, empirical work investigating the impact of Social Security on private saving has generally been inconclusive. Nearly all econometric and simulation studies suggest that Social Security causes some displacement of private saving, but the magnitude of the effect is very uncertain.

Engen and Gale then analyze how the provisions of the major reform proposals would affect saving. Increased funding of Social Security, a goal common to many proposals, would increase national saving unless offset by other changes, such as increased

government deficits or reductions in households' retirement saving other than Social Security. The extent to which such offsets do occur would be determined by political economy factors and the specific provisions of the reform plan adopted. Engen and Gale note that privatization is neither necessary nor sufficient to improve Social Security's funding status, and that the effect on national saving is the same whether Social Security is funded as a public or a private program.

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Engen and Gale generally believe that other reform provisions, analyzed in isolation from their impact on funding, are less likely to increase national saving. They conclude that investing the trust fund in private securities is an independent issue from that of national saving. Analysis of the effect that establishing personal defined-contribution accounts would have on saving is more complex, and the net impact of establishing the accounts is uncertain. One of the ways in which such accounts could increase saving, through a possible increase in the degree of risk households face, would result in a decrease in the households' level of well-being. Means-testing Social Security benefits would likely reduce saving by placing an implicit tax on private retirement saving.

Like Engen and Gale, **James M. Poterba** stresses that the key factor in how Social Security reform would affect national saving is the degree to which reform moves the system toward being fully funded. While it is possible that funding Social Security could be offset by larger deficits in the non-Social Security component of the federal budget, Poterba thinks that the current political climate would limit the extent to which this would occur. Although there is more controversy regarding the extent to which increased governmental saving might be offset by decreased

private saving, Poterba notes that a near-consensus exists among economists that the net effect of increased funding of Social Security would be higher national saving.

Poterba observes that while some households appear to behave myopically and do little saving in anticipation of retirement, other households are engaged in long-term financial planning and adjust their behavior in response to incentives. He believes that modeling these differences in household behavior is critically important for accurate assessment of how Social Security reform will affect saving and the distribution of retirement resources.

Andrew A. Samwick emphasizes that the effect of reform on saving may be a misleading indicator of its success in improving economic welfare. By providing insurance against risks not easily insured in private markets, Social Security may have simultaneously reduced saving and increased economic well-being.

Like other conference participants, Samwick recognizes that moving from a pay-as-you-go system to full funding requires a transition period in which workers would have not only to fund their own retirement benefits but also to pay for the benefits already accrued under the previous system. However, citing research which he and Martin Feldstein have performed, Samwick maintains that the increase in the payroll tax needed to make the transition to a fully funded system is smaller than policy analysts commonly expect.

Lessons from Overseas

The aging of the population is a worldwide phenomenon, and partly in response to this many countries have either adopted or are considering changes in their social security systems. A panel of economists from Mexico, Australia, the United Kingdom, and Japan discuss how social security is changing in their countries.

Agustin G. Carstens outlines a major reform of social security now under way in Mexico. Currently, most of the private sector work force is covered by a defined-benefit, pay-as-you-go public pension system. Carstens reports that the high tax used to finance this system, along with a relatively weak link between benefits and tax payments, has led to problems of evasion, and that the aging of the Mexican population would have required even higher future tax rates if the current system had been continued.

The new Mexican system is a defined-contribu-

Panel Comments

Carstens believes that social security reform in Mexico will benefit the Mexican economy by facilitating the development of financial markets, particularly in medium-term and long-term securities.

Disney reports that the U.K.'s payroll tax to fund the public part of the social security system is expected to fall between now and the year 2050.

Edey reports that mandatory private pension coverage will lead to reduced reliance on Australia's income-tested public pension system.

Horioka identifies four major problems with Japan's public pension system: intergenerational inequity, intra-generational inequity, disincentives for the labor supply of women and the aged, and an adverse impact on private saving.

tion system, with workers mandated to contribute at least 6.5 percent of their labor earnings to their account and the government making a "social contribution" equivalent to 5.5 percent of minimum-wage earnings to each worker's account. The accounts will be managed by private pension fund administrators, and regulated and supervised by a government agency. The current system has accrued benefit obligations with a present value equal to approximately 80 percent of Mexico's GDP. These benefit obligations will be paid for through a combination of increased taxes and government debt. Carstens reports that simulations predict that the reform will increase net national saving by 2 to 3 percent of GDP annually, independent of any effect on voluntary private saving. He believes that the reform will also benefit the Mexican economy by facilitating the development of Mexico's financial

markets, particularly in medium-term and long-term securities.

Richard Disney provides an exposition of changes in the United Kingdom's social security system. The U.K. system has a basic tier consisting of a universal flat retirement benefit financed on a pay-as-you-go basis. Because the benefit amount has been indexed to prices since 1982 and average wages in the U.K. have risen at an annual rate 1.5 to 2 percent faster than prices over the same period, the benefit amount has fallen as a percentage of average wages. The second tier in the U.K. system consists of a defined-benefit pension financed by a payroll tax. However, most workers have taken advantage of an option to contract out of this tier and pay a lower payroll tax, either by participating in an approved employer-sponsored pension plan or by contributing to a Personal Pension account, which is somewhat similar to an Individual Retirement Account in the United States. There is also a discretionary tier, whereby workers can make tax-favored contributions to pension plans or retirement accounts.

Although the ratio of contributors to pensioners in the U.K. is expected to drop from 2.1 currently to 1.5 in 2050, Disney reports that the payroll tax used to fund the public part of the system is expected to fall during this period. This is possible because of the decline in the value of the basic tier benefit relative to wages, reduced generosity of the public benefits in the secondary tier, and increased contracting out of the public secondary tier pensions.

Malcolm L. Edey reports Australia is also undergoing a transition to reduced reliance on government-provided retirement pensions. Australia provides a means-tested pension, financed out of general tax revenue, with a basic benefit set at 25 percent of average weekly earnings for individuals. Starting in 1986, Australia has required that employers provide private pension coverage for their employees, resulting in coverage increasing from approximately 30 percent to nearly 90 percent of employees. Future retirees increasingly will be receiving private pension benefits and, because of the means test, a growing proportion of these retirees are expected to be ineligible for the government pension.

According to Edey, concern about the impact of population aging was less important a factor in motivating the policy change than the desire of labor unions for wider pension coverage and a perceived need to increase national saving. Edey notes that the means test in the public pension program results in a very high implicit tax rate on saved income. As a

result, workers have an incentive to retire early, financed by lump-sum private pension benefits, in order to avoid the implicit tax created by the means test. An additional problem noted by Edey is that the details of the system are very complex and rarely understood by participants.

Charles Yuji Horioka provides a brief history and discussion of Japan's public pension system. Japan has a two-tier system. All workers are covered by the first tier, which provides a flat monthly pension benefit financed by flat-rate monthly contributions by workers. Salaried workers are also covered by one of five second-tier defined-benefit pension systems, which are financed by payroll taxation. Horioka reports that Japan's public pension system is run essentially on a pay-as-you-go basis.

Horioka identifies four major problems with Japan's system: intergenerational inequity, intra-generational inequity, disincentives for the labor supply of women and the aged, and an adverse impact on private saving. He then discusses a number of policy reforms which would help to alleviate these problems by moving toward a fully funded system that is actuarially fair to all cohorts and to groups within each cohort.

The Future Outlook for Social Security

Edward M. Gramlich, the Chair of the 1994–1996 Advisory Council on Social Security, addressed the conference with his thoughts on the outlook for Social Security. Gramlich believes that we should pursue two main goals in reforming Social Security: to preserve the social protections provided by the system, and to raise national saving. He notes that of the three groups in the Advisory Council, one was strong on social protections but less interested in using Social Security reform to increase saving, one was strong on increasing saving but less concerned about preserving social protections, and the third group, including Gramlich, pursued both goals.

The Individual Accounts plan proposed by Gramlich would combine modest Social Security benefit cuts with the creation of new mandatory retirement accounts. Although Gramlich admits that some individuals may reduce their own discretionary saving in response to the mandate, he thinks that the net effect would be to increase national saving. Gramlich also touches on some unresolved issues related to individual accounts which he believes need further discussion and analysis: how to keep administrative costs

low, whether annuitization should be mandatory, whether accounts should be mandated, and political issues related to combining defined-contribution and defined-benefit elements within Social Security.

Gramlich believes it possible to change the system gradually in order to alleviate Social Security's long-term solvency problem while also preserving its social protections and promoting national saving.

Gramlich believes that politicians are more afraid of Social Security reform than is warranted. He points out that all three plans proposed by the Advisory Council protect benefits of current retirees, which should help make reform more palatable to that group. And it is possible to change the system gradually in order to alleviate Social Security's long-term solvency problem while also preserving its social protections and promoting national saving. Gramlich believes such a reform could be popular with voters, and should be undertaken now.

Social Security Reform and Financial Markets

Henning Bohn's paper examines how the three proposals made by the Advisory Council would affect intergenerational risk-sharing and the distribution of welfare across generations. He approaches the question theoretically, utilizing a stylized overlapping-generations model of the economy. Bohn begins his paper with an analysis of several general results relevant to social security systems. He shows that establishing a trust fund to pay for the contributors' own future retirement has no real effects because, in the absence of liquidity constraints, individuals would reduce their private saving to offset the flows into the trust fund. An implication of this result is that the mandatory defined-contribution accounts created by the Individual Accounts (IA) and Personal Security Accounts (PSA) proposals would have real effects only to the extent that people are liquidity constrained and

cannot reduce their personal saving enough to offset their mandatory contributions to the accounts. Bohn also demonstrates that raising taxes to fund a trust fund without changing future benefits is equivalent to cutting future benefits. Bohn notes that the IA plan would increase the payroll tax rate while leaving future benefits largely unchanged, and thus it is equivalent to scheduling a future decrease in benefits.

In Bohn's analysis, a policy change that decreases the amount of redistribution from the young to the old, such as an increase in the degree to which Social Security is pre-funded, increases saving and investment, placing the economy on a growth path with higher per-capita income. Bohn's model predicts that the PSA plan would achieve these objectives, but it is the pre-funding rather than the privatization which would produce this outcome.

Bohn shows that investing the Social Security trust fund in the stock market has the potential to share risks across generations more efficiently, by effectively allowing future generations to share in current stock market risks. Investment of individual defined-contribution accounts in equities does not offer this potential.

Although the reduction in the rate of population growth creates fiscal problems for Social Security, Bohn's model shows that it will have positive macroeconomic effects. For a given payroll tax rate, reduced population growth increases the capital-labor ratio, resulting in a decrease in the real return on capital and an increase in real wages.

Bohn's analysis indicates that investing the trust fund in the stock market would reduce the equity premium and increase the safe interest rate. The magnitudes of the expected changes are small, however, ranging from a drop in the equity premium of 10 basis points for the Maintenance of Benefits plan to a drop of 15 to 20 points for the PSA plan.

Bohn shows that investing the Social Security

trust fund in the stock market has the potential to more efficiently share risks across generations, by effectively allowing future generations to share in current stock market risks. In contrast, investment of individual defined-contribution accounts in equities does not offer this potential. Bohn cautions that a number of other considerations bear on the question of whether trust fund investments in the market would improve the allocation of risk, making it difficult to draw a definite conclusion about the desirability of this policy. He also notes that while improved efficiency in the allocation of risk has the potential to make all generations better off, the generations that take on more risk must also expect to benefit in order for this to be true.

Mark J. Warshawsky believes that empirical evidence is inconsistent with Bohn's theoretical result that a switch to a system of mandatory individual defined-contribution accounts per se will not affect financial markets. He notes that as recently as 1983 only 20 percent of households directly held stocks or mutual funds, most likely due to information costs and other sources of inertia. If this explanation is correct, then changes in institutions and public perceptions can affect the ability of households to own stock and will influence the equity premium. Supporting this view is the large increase between 1983 and 1995 in the percentage of households owning stocks through mutual funds, Individual Retirement Accounts, and defined-contribution pension plans. Warshawsky believes that another institutional change, mandating that workers contribute to individual accounts, would further increase the percentage of households owning stocks and decrease the equity premium.

Like Warshawsky, **Stephen P. Zeldes** questions Bohn's claim that a switch to individual accounts would be economically neutral. Zeldes thinks an individual accounts system would distort labor supply and saving decisions less than the current system and possibly would also increase workers' confidence in the system. These factors would lead to privatization having real effects even if funding is not increased.

Zeldes notes a number of areas where Bohn's model might usefully be extended. One reason we have Social Security is the perception that some people, left on their own, would not save sufficiently for their old age. Zeldes would like to see Bohn's model extended to incorporate this type of behavior, perhaps by modeling some households as acting myopically. Zeldes also outlines several other extensions of Bohn's model that might affect conclusions about the desirability of investing the trust fund in the stock market.

Social Security Reform in a Global Context

In their paper, **Barry P. Bosworth** and **Gary Burtless** investigate how the possibility of investing abroad affects Social Security reform. They start by comparing demographic trends and pension costs across the United States, France, Germany, Japan, and the United Kingdom. These countries all will experience population aging due to a drop in fertility and

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rising life expectancy, and they face an aged dependency problem more severe than that of the United States. In 2030, the ratio of people older than 64 to those between the ages of 15 and 64 will be about 30 percent in the United States, 40 percent in France and the United Kingdom, and nearly 50 percent in Germany and Japan. France, Germany, and Japan also face financing problems in their social security programs that are much more severe than those of the U.S. system.

Bosworth and Burtless note that population aging has two components: increased longevity, which extends the proportion of life spent in retirement and should boost desired pre-retirement saving rates, and decreased fertility, which reduces the growth rate of the labor force. The latter leads to reduced demand for new investment. In a closed economy, saving must equal investment, and a combination of increased desired saving and decreased demand for investment would lead to a decrease in the rate of return.

The existence of international capital markets, however, raises the possibility that industrialized countries with aging populations could, by investing in less developed countries, simultaneously increase their saving rates and decrease their investment rates without large movements in the return to capital. Bosworth and Burtless point out that less developed countries have lower capital-labor ratios, but faster-growing labor forces, than the industrialized nations. Thus, the less developed countries represent an attractive opportunity for investment. However, as Burtless and Bosworth point out, these countries also often have underdeveloped capital markets and are perceived by foreign investors as being quite risky.

Using a neoclassical growth model, Bosworth and Burtless simulate the effects of a permanent increase in the United States' net national saving equal to 1 percent of net national product under two scenarios: investment of the extra savings domestically, and investment of the savings abroad. They find that in the domestic investment case the rate of return falls by one-third, the real wage rate rises by 11 percent, and total consumption increases by 3.5 percent by the year 2050. One indicator of the increase in consumption needs associated with population aging is the expected increase in government transfers to the aged, and they note that the increase in consumption in their simulation falls far short of the Congressional Budget Office's estimate of the likely effect of population aging on government outlays. Bosworth and Burtless calculate that an increase in national saving equal to 2 to 3 percent of net national product would be needed to offset the increased government spending.

In the case of investment abroad, no significant change occurs here in real wages or in the rate of return, but by 2050 consumption increases by 3.1 percent assuming a fixed exchange rate, or by 3.9 percent assuming a variable exchange rate. Differences in the effect of increased saving on wages and the rate of return generate interesting differences between the two scenarios in the distribution of income gains across workers and owners of capital. Bosworth and Burtless point out that if the sole objective of the increased saving were to restore Social Security to solvency, then investment abroad would be preferred, since by increasing wages domestic investment would also increase Social Security's future benefit obligations. Domestic investment would also decrease the returns on the Social Security trust fund and private pension funds.

In her comments on this paper, **Estelle James** discusses whether a decrease in the return on capital

can be avoided by investing abroad. She notes that developing countries also have aging populations and many are setting up partially pre-funded mandatory pension plans. This may result in increased global saving and a decreased rate of return. Offsetting this are continued large movements of workers out of agriculture; these shifts increase the demand for capital investment and could increase the global rate of return. On balance, she thinks Bosworth and Burtless are correct in concluding that investment abroad will yield a higher rate of return than domestic investment.

James thinks that increased national saving is desirable, and that Social Security reform is an appropriate policy instrument to use in pursuing this goal. She believes mandatory defined-contribution retirement accounts that are privately managed have the advantage of avoiding the dangers associated with public sector control of the capital stock, and they are a convenient mechanism for ensuring that the growth resulting from the increased saving can be used to reduce the fiscal problems associated with population aging. James notes that while high-income individuals may reduce their voluntary saving in response to new saving mandates, those with relatively low incomes may not be able to do so because of liquidity constraints. James advocates changes in the tax and benefit structure of the current Social Security system in order to compensate the latter for the loss in economic welfare resulting from the forced increase in their saving.

Charles Lieberman, the second discussant, questions whether less developed countries would permit foreign investment on as massive a scale as Bosworth and Burtless envision. Lieberman thinks less developed countries often use a slightly undervalued currency to boost foreign demand for their output. As a result, the less developed countries run trade surpluses and must invest in other countries. He believes that political and business leaders in less developed countries use this strategy so that their business sectors can remain globally competitive.

Lieberman briefly reviews alternatives to investing abroad which would help the nation to address the economic needs associated with the aging of the population. He concludes that policies that cut benefits, raise taxes, or increase productivity will be needed.

How Should Social Security Be Reformed?

The conference closed with a panel of four economists who drew on the conference presentations and

Panel Comments

Diamond concludes that the debate over Social Security reform centers on politics, not economics, citing evidence that the cost of managing the fund would be much higher under a privatized individual accounts plan than under the current structure, which also offers superior opportunities for risk-sharing.

Kotlikoff outlines a proposal that would end the accrual of benefits under Social Security's current structure and instead divert the portion of the payroll tax that currently supports these benefits into new individual accounts.

Munnell believes that a fundamental change in the structure of Social Security is neither needed nor desirable. She agrees that we should make changes now to bring Social Security back into balance but argues that changes should be made within the structure of the current system.

Steuerle believes the solution to the Social Security problem lies in increased utilization of human capital, and he advocates removing institutional barriers to work by older people.

discussions to address the question of how Social Security should be reformed.

Peter A. Diamond points out that while much of the discussion at the conference focused on increasing the degree to which Social Security is pre-funded, there was little discussion of how to manage the fund that would result from this policy. He believes that

this issue is at the heart of the debate over the three plans from the Advisory Council. Diamond cites evidence supporting the view that the cost of managing the fund would be much higher under a privatized individual accounts plan than it would be under the current defined-benefit structure. Since the defined-benefit structure also offers superior opportunities for risk-sharing, Diamond concludes that the debate over Social Security reform centers on politics, not economics.

The political issues addressed by Diamond include what effect raising the Social Security payroll tax would have on federal deficits, whether political pressures would distort trust fund investment decisions, and whether defined-benefit and defined-contribution components can coexist within Social Security. Diamond believes that it is possible to set up a politically stable system where trust fund investment decisions are isolated from political pressures. He is more pessimistic regarding the political stability of mixing defined-benefit and defined-contribution components in Social Security. Because the defined-benefit part of the system would have responsibility for the unfunded, already accrued benefits and for the system's redistributive role, it is likely to yield a low rate of return for many participants and thus become unpopular.

Laurence J. Kotlikoff outlines a Social Security reform plan that he developed jointly with Jeffrey Sachs. The Kotlikoff-Sachs proposal would end the accrual of additional old-age retirement benefits under Social Security's current defined-benefit structure, and instead divert the portion of the payroll tax that currently supports these benefits into new individual accounts. The government would provide matching contributions to these accounts on a progressive basis, preserving at least part of the redistributive function of Social Security. The individual accounts would be invested in privately managed index funds until individuals turned 65, at which point the account balances would be used to purchase inflation-indexed annuities. A new federal consumption tax would be levied to pay for benefits already accrued under the existing system and the government's matching contributions under the new system.

Kotlikoff maintains that his plan would have desirable macroeconomic consequences. The new consumption tax would increase saving and capital accumulation and lead to higher levels of economic output in the future. Labor market efficiency would be enhanced by making the link between contributions and benefits more transparent. Kotlikoff also discusses how particular provisions in his proposal meet many

of the objections commonly raised to privatization plans.

Alicia H. Munnell believes that such a fundamental change in the structure of Social Security is neither needed nor desirable. Although the trust fund is expected to be exhausted in 2029 if reform does not take place, current revenue at that point would still be sufficient to pay roughly three-fourths of the cost of the program. Social Security does face a fiscal imbalance, but the problem is not severe. Although Munnell does not advocate solving the fiscal problem solely through increased taxation, she points out that by imposing a payroll tax increase of 2.23 percentage points today, one could put the system into 75-year actuarial balance. Such a tax increase is not unprecedented in the program's history.

The failure of the 1983 reforms to permanently end Social Security's fiscal problems has led some to conclude that more fundamental change is needed. Munnell disagrees. One reason why fiscal imbalance reemerged after the 1983 reforms was that the system was projected to be running a deficit toward the end of the 75-year period which was used to assess the system's fiscal condition. As time passed and the 75-year horizon extended into the future, the system was bound to fall out of actuarial balance. This, in combination with a faster-than-expected increase in the disability caseload and technical changes in the projection methodology, underlies the problems that have emerged since 1983. Munnell agrees with many of the other conference participants that we should make changes now to bring Social Security back into balance, rather than delay reform until the depletion of the trust fund is imminent, but she argues that changes should be made within the structure of the current system.

C. Eugene Steuerle questions the practice of automatic spending increases in programs for the elderly at a time when we are having trouble funding programs that address other social problems. He argues that wage indexing of Social Security benefits, which produces increases in real benefit levels over time, is not appropriate for an unfunded program. He also criticizes the failure to index the retirement age for longevity, which results over time in Social Security providing benefits to people for an increasing fraction of their lifetimes.

Steuerle believes the solution to the Social Security problem lies in increased utilization of human

capital, rather than increased accumulation of physical capital. He advocates removing the institutional barriers to work by older people that currently promote early withdrawal from the labor force. Particular policy reforms Steuerle favors include basing Social Security benefits on workers' entire earnings history rather than just the highest 35 years, elimination of the earnings test, and removal of the requirement that Medicare be a secondary payer when workers have other insurance coverage. He also believes the system should be more target efficient. If the aim of the system is to reduce poverty among the elderly, it should be reformed to do so more efficiently. Steuerle would move the system toward greater earnings sharing among couples, which would help to reduce poverty among widows. He also thinks that reallocating benefits from the relatively young beneficiaries in their sixties to the old old, who generally have greater needs, would also improve target efficiency.

Conclusion

Social Security does face a long-term fiscal problem, although we cannot be certain of its exact magnitude, and conference participants were in agreement that this problem should be addressed now, rather than waiting until the problem is more immediately pressing. But it is difficult to find widespread agreement on which specific reforms should be adopted.

Many of the reform proposals aim to do much more than address Social Security's long-term actuarial imbalance. Increased national saving, improved labor market efficiency, and a reduced role for government in providing income to the elderly are goals of some of the reform plans. One reason that it is hard to form a consensus on reform is that the potential reformers differ in the weight they attach to the various goals. Although Social Security's actuarial balance could be restored fairly easily through an immediate increase in the payroll tax, the need for reform presents an opportunity to reevaluate the program and consider more fundamental changes. We hope that by helping to clarify the relationship between reform provisions and the various possible goals of reform, the papers in the conference volume will promote a reasoned debate on what changes should be made to Social Security.

Social Security Reform: Links to Saving, Investment, and Growth

At its forty-first economic conference in June 1997, the Federal Reserve Bank of Boston brought together academics, economists, bankers, and businessmen to discuss the impact of demographic trends and economic growth on the Social Security program's ability to fulfill its insurance, redistribution, and old-age consumption goals. The primary aims of the conference were to review the economics of Social Security reform, explicate the trade-offs facing policymakers, and provide guidelines for reform. The conference agenda is outlined below.

Opening Address: The Transformation of Social Security

Edward D. Berkowitz, George Washington University

Social Security: How Social and Secure Should It Be?

Steven A. Sass and Robert K. Triest, Federal Reserve Bank of Boston

Discussant: Diane Macunovich, Williams College

Demographics, Social Security Reform, and Labor Supply

Theresa J. Devine, Congressional Budget Office

Discussants: Dora L. Costa, Massachusetts Institute of Technology

John P. Rust, Yale University

Effects of Social Security Reform on Private and National Saving

Eric M. Engen, Board of Governors of the Federal Reserve System

William Gale, The Brookings Institution

Discussants: James M. Poterba, Massachusetts Institute of Technology

Andrew A. Samwick, Dartmouth College

Panel: Lessons from Overseas

Agustin G. Carstens, Banco de Mexico

Richard Disney, University of London

Malcolm L. Edey, Reserve Bank of Australia

Charles Yuji Horioka, Osaka University

Address: The Future Outlook for Social Security

Edward M. Gramlich, University of Michigan

Social Security Reform and Financial Markets

Henning Bohn, University of California, Santa Barbara

Discussants: Mark J. Warshawsky, TIAA-CREF

Stephen P. Zeldes, Columbia University

Social Security Reform in a Global Context

Barry P. Bosworth and Gary Burtless, The Brookings Institution

Discussants: Estelle James, The World Bank

Charles Lieberman, Chase Securities, Inc.

Panel: How Should Social Security Be Reformed?

Peter A. Diamond, Massachusetts Institute of Technology

Laurence J. Kotlikoff, Boston University

Alicia H. Munnell, President's Council of Economic Advisers

C. Eugene Steuerle, The Urban Institute

The proceedings, Conference Series No. 41, will be published at the end of the year. Information about ordering this volume will be included in the next issue of this *Review* and will also be available on the Bank's website at <http://www.bos.frb.org>.