A new era of Social Security

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THE most important domestic issue facing the U.S. government is how to finance the future pension and health benefits of an aging population. This problem is important in itself. But it takes on even greater significance because a failure to achieve an appropriate reform of the existing system of financing the programs for the aged would have very serious effects on the entire economy. In addition, the budgetary consequences of inadequate reform would undermine the government’s ability to deal with all other domestic and international problems.

The existing system of financing the consumption and health care of the aged is based on taxing the current working population and transferring the receipts to retirees as Social Security pensions and as health benefits in the Medicare and Med-
icaid programs. These programs are enormously expensive and will inevitably get much more expensive in the future. Today, the retirement and disability programs are financed by a payroll tax that exceeds 12 percent of covered wages and salaries, a bigger tax burden on most households than the personal income tax. In addition, the Medicare program of health benefits for the aged, plus the part of the means-tested Medicaid benefits that is for the aged (primarily for nursing home care), costs as much as the Social Security pensions. Together these programs for the aged cost 10 percent of Gross Domestic Product (GDP), about 25 percent more than the entire revenue from the personal income tax.

**The cost of growing older**

The aging of the population that is now underway will make these programs for the aged much more expensive. The Census Bureau projects that the number of people over age 65 will rise from 12 percent of the population now to about 20 percent of the population just 30 years from now, a dramatic demographic change in a relatively short period of time. Although the aging of the baby-boom generation explains the speed of this demographic shift, the increased fraction of older persons in the population is a permanent change that reflects the increased longevity of the current and future generations.

The relative number of “older aged” will increase even more rapidly, an important fact because health-care costs rise rapidly with age. Individuals over age 75 will increase from 6 percent of the population now to a projected 11 percent in 2030. And the relative number over age 85 will nearly triple, from 1.6 percent of the population now to 4.6 percent in 2030. Moreover, these official demographic projections are conservative estimates. The percentage of the population at older ages could increase even more if advances in medical sciences and improvements in life styles cause people to live longer than currently projected.

The aging of the population will raise the cost of the existing programs dramatically. The Congressional Budget Office estimates that the payroll tax rate required to finance the Social Security pensions will rise from 12 percent now to 18 percent over the next 30 years and will eventually reach 19
percent. The Medicare and Medicaid expenditures on the health care of the aged will rise even faster, doubling its share of GDP over the next 30 years and continuing to increase after that.

Together the cost of pension and health-care programs would then be equivalent to about 45 percent of covered wages. If the increase in the cost of these programs were instead funded by raising the personal income tax, it would be necessary to more than double all of the personal income-tax rates (increasing the 15 percent to more than 30 percent, the 28 percent rate to more than 56 percent, etc.). Regardless of how such increased expenditures might be financed, the extra taxes would be enormously burdensome and greatly distorting to incentives. The need to finance these programs for the aged would make it virtually impossible for government to have the revenue needed to deal with any other domestic or international problems.

**Toward reform**

The only way to avoid this financial impasse is to replace the current pay-as-you-go tax-financed system (either in whole or in part) with a prefunded system, in which individuals accumulate saving during their working years to finance consumption, spending, and health care during their retirement years.

Fortunately, such a shift to prefunding is beginning to happen all around the world. The change began in Chile in 1981 and is becoming widespread in Latin America. A recent project of the National Bureau of Economic Research studied these changes in Argentina, Australia, Chile, Great Britain, and Mexico. Although specific programs differ from country to country, a common feature of all of them is a system of mandatory saving in individual accounts as a way of prefunding retirement income.

The World Bank is currently advising many governments with emerging market economies around the world to include a prefunded mandatory saving portion in their old-age pension systems, and the Organization for Economic Cooperation and Development is beginning to examine how the industrial countries might shift from existing pay-as-you-go systems to reli-
ance on prefunded accounts. In the United States, the official Social Security Advisory Council discussed several alternative options for partial funding of Social Security retirement benefits. Change is clearly in the air.

The current article discusses the process of replacing the existing pay-as-you-go Social Security program of Old Age and Survivors Insurance with a prefunded system based on mandatory individual accounts. As Lawrence Seidman notes in his article in this issue of *The Public Interest*, I originally advocated fully funding Social Security nearly 25 years ago using a single government-managed fund rather than individual accounts. While many of the advantages of a fully funded system that I will discuss in the current article could be achieved if the government accumulated funds in a single national account, I believe that a system of individual accounts, similar to the popular IRAs and 401k plans, would have substantial advantages over a single government fund. After discussing the basic reasons for favoring the prefunding of Social Security old-age pensions (and Medicare as well) and the nature of a feasible transition from the existing pay-as-you-go system, I will explain why I now favor using a system of individual accounts rather than a single government account. I will then discuss the two major issues that are frequently raised as objections to a prefunded system based on individual accounts: the riskiness of investing in stocks and bonds and the distributional effects of shifting from pay-as-you-go to individual accounts. I will conclude by discussing the effect that such a system would have on national saving and capital accumulation.

1 The contributions to the funded plan must be mandatory for two reasons. First, some individuals are too shortsighted to provide for their own retirement. A society that made no provision for helping those who had no resources when they were too old to work would leave them to private charity and a standard of living many would regard as unacceptably low. Second, the alternative of a means-tested program for the aged might encourage some lower-income individuals to make no provision for their old age deliberately, knowing that they would receive the means-tested amount. For individuals with low enough income, that combination might be preferred to saving during their working years to have a higher level of retirement consumption. A mandatory system of individual saving would prevent poverty in old age while avoiding the temptation to “game” the system in that way. The options that I have studied therefore always assume that individuals would be required to save some fraction of their wage and salary income.

The advantages of prefunding

Many advocates of replacing the U.S. Social Security system with a system of prefunded benefits base their case on the idea that the existing system will be “bankrupt” when the Social Security Trust Fund is exhausted in about the year 2030. While that would constitute bankruptcy for a private pension, it is not relevant for a government program. Since there are no trust funds for defense spending or education, there is no discussion about the “bankruptcy” of those programs. The ability of the Social Security program to continue to pay benefits depends on political support rather than trust-fund balances.

The real reason for shifting from a pay-as-you-go system to a prefunded program is that doing so would raise the economic well-being of the population. The key to this is the fact that, in a prefunded program, individuals save during their working years to finance their benefits (both pensions and health care) when they are old. Saving means that individuals consume less, permitting more of the nation’s output to be invested in new business plant and equipment. The saving is channeled into such investments when individuals buy corporate stocks and bonds either directly or by purchasing mutual funds. The rate of return on such additions to the capital stock is much higher than the implicit rate of return that is produced by a pay-as-you-go system. That, in turn, implies that the funded system can provide any given level of benefits at a much lower cost to working-age people than a pay-as-you-go system can.

I refer to the “implicit” rate of return in a pay-as-you-go system because there is no actual investment in such a system and, therefore, no assets on which to earn a true rate of return. All of the money that people pay in taxes during their working years is immediately paid out to the concurrent retirees. When those employees retire, they, in turn, receive trans-

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3 A pure pay-as-you-go system may keep a small trust fund to smooth seasonal and cyclical fluctuations. A larger trust fund for the U.S. Social Security program was planned in the early 1980s as a way to postpone the impact of the demographic change on the payroll tax rates. Because the actuarial and economic assumptions were too optimistic, the Social Security actuaries now project that the trust fund will start declining about 10 years from now and be exhausted by the year 2030.
fers financed by the taxes paid by the individuals who are then working. The key to the implicit rate of return is that the payroll taxes paid by that next generation of employees will be higher than the taxes retirees had paid when they were working (because the later generation of employees is both more numerous and, on average, has higher average real wages) and, therefore, can finance benefits that are greater than the taxes retirees had paid when they were working.

The combination of increasing numbers of employees and rising earnings implies that real payroll tax revenues are now increasing at about 2 percent per year. This translates into an implicit real rate of return on the taxes paid in the pay-as-you-go program of about 2 percent per year.\(^4\) Looking further ahead, Social Security actuaries project that the benefits implied by current law would be equivalent to a return that is actually somewhat less than 2 percent.

The real rate of return on incremental savings invested in a portfolio of stocks and bonds is much higher. Because the past few years have seen such a remarkable boom in stock and bond prices, I will look at the experience before 1995. During the nearly 70-year period from 1926 to 1994 for which comparable data are available, the rate of return on a portfolio of stocks and bonds was about 5.5 percent after adjusting for inflation. The return during the postwar period from 1946 to 1994 was almost exactly the same. While the future rate of return will fluctuate from year to year, there is good reason to believe that the long-term rate of return in the future will be similar to what it was in the past. The return on a portfolio of stocks and bonds is, therefore, about three times as great as the implicit return that can be expected in a pay-as-you-go system.

Even this relatively favorable rate of return on stocks and bonds understates the return to the nation of the funds that are saved and invested in new plant and equipment. Although

\[^4\text{Historically the rate of return in the pay-as-you-go program has been much higher because the payroll tax rate rose sharply from a combined rate of 2 percent on employers and employees when the program began to the current 12 percent, a much greater increase than needed to balance the aging of the population during the past 60 years.}\]
the 5.5 percent return earned on stocks and bonds in a private pension fund or 401k plan has not been subject to any personal income tax, it is the return after the taxes that corporations pay to the federal, state, and local governments. The real return on additions to the capital stock before all taxes during these same years averaged about 9 percent. With about 40 percent of that return to capital paid by companies as taxes to the various levels of government, the net return is about the 5.5 percent that shareholders and bondholders have received as interest, dividends, and accrued capital gains.

The saving done in a prefunded system would thus earn a 9 percent real return for the nation as a whole. The government could supplement the individual dividends and interest by providing matching grants financed with the incremental tax revenue collected on the profits earned on the additions to the nation's capital stock that result from the mandatory saving accounts. In this way, the accounts could earn the full 9 percent real rate of return without any net cost to the government or change in the budget deficit.

**Saving the economy**

Substituting the 9 percent real rate of return that funded accounts would earn for the 2 percent return implicit in the existing pay-as-you-go system would dramatically reduce the cost of financing projected benefits. To see how much the 9 percent return in a funded system would reduce the cost relative to the current pay-as-you-go system, consider a simplified example of the cost of financing retirement benefits for an individual who works from age 25 to age 65 and is retired from age 65 to age 85. That individual saves (or contributes to a pay-as-you-go system) during his working years and “dissaves” (or receives a pension) during his retirement years. We can approximate the effect on the required saving rate (or required pay-as-you-go contribution rate) of the shift from a 2 percent rate of return to a 9 percent rate of return by assuming that all of the individual’s saving (or contribution to the pay-as-you-go system) occurs at age 45 (the midpoint of the working years) and that all of the dissaving occurs at age 75, the midpoint of the retirement years.

With a 9 percent rate of return, each dollar saved at age 45
grows to \((1.09)^{30} = 13\) dollars at age 75. In contrast, each dollar contributed to a pay-as-you-go system, with an implicit 2 percent rate of return, grows to \((1.02)^{30} = 1.8\) dollars at age 75. Thus it takes seven times as many dollars paid at age 45 in a pay-as-you-go system as it would take in a funded system to buy the same benefits at age 75. This calculation implies that a Social Security payroll tax rate of 18 percent could be replaced by a prefunded system with a contribution rate of only about 2.5 percent, a remarkable difference.

Even if there were no government supplement, so that individual retirement accounts only earned the 5.5 percent return after taxes paid at the corporate level, an 18 percent payroll tax rate could be replaced by a 6.5 percent mandatory contribution, a reduction of nearly two-thirds in the cost of providing the same retirement income.

These calculations are just rough approximations. Detailed calculations based on demographic projections of the Census Bureau and actuarial assumptions of the Social Security Administration imply that, in the long run, the current Social Security rules linking benefits to previous earnings would require a 19 percent payroll tax if the nation continues with the existing pay-as-you-go system. In a fully funded system, with a 9 percent real rate of return, the same benefits could be financed by a mandatory saving rate of only 2 percent of payroll. Even with a real return of only 5.5 percent, the mandatory saving rate would be only about 5.8 percent of payroll, less than one-third of the saving rate in the unfunded pay-as-you-go system.

The lower contribution rate in the fully funded system has two enormous advantages. Most obvious, lower mandatory payments by employees would mean more dollars to spend on their current consumption. For example, a family of four with $40,000 of wage income would have to pay about $12,000 in federal taxes if the payroll tax rate is 19 percent but only a combined total of taxes and mandatory saving of about $5,000 if the payroll tax is replaced with a 2 percent mandatory saving rate. The funds available for personal consumption would rise from $28,000 to about $35,000, an increase of 25 percent. Extending the prefunding to health care for the aged would
increase the rise in spendable income to nearly 50 percent. I cannot think of any other government policy that would have such a favorable effect on the spendable income of the average family or individual.

In addition to increasing consumable income in this way, substituting a low mandatory saving rate for a much higher payroll tax rate would reduce the very high marginal tax rates that distort labor-market behavior. The combination of a 19 percent payroll tax rate, a 28 percent federal personal income tax rate, and state income tax rates would raise the marginal tax rate to more than 50 percent for middle-income individuals. With increased Medicare costs also financed by a pay-as-you-go tax system, the total marginal tax rate could well exceed 65 percent.

Such high marginal tax rates would reduce the incentive to work (altering not only working hours but also decisions about effort, occupational choice, location, etc.) and distort the form of compensation (inducing individuals to substitute fringe benefits and nicer working conditions for the cash that individuals would rather have). Reducing the high marginal tax rates by shifting to a funded system would reduce these labor-market distortions, further increasing the real income of these taxpayers. More generally, preventing these high marginal tax rates would reduce the risk that the United States would someday experience the terrible double-digit structural unemployment problems that Europe is now facing. Reducing the cost of financing pensions and health care for the aged would also

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5 The Medicare and Medicaid health benefits for the aged currently cost about 6 percent of personal income and would rise in the long run to about 14 percent of personal income. For the family with $40,000 of wages income, the cost would rise by about $3,000 a year, reducing disposable income to only $25,000. Shifting to a funded system for financing these Medicare-Medicaid benefits would reduce the cost of these programs from 14 percent of personal income to about 1.5 percent of personal income, an additional gain of about $5,000 in spendable income. Spendable income of $37,000 with the funded system would be nearly 50 percent higher than the $25,000 with the pay-as-you-go system for funding both pensions and health care for the aged.

6 Even with the much lower 5.5 percent rate of return, shifting to a fully funded system for Social Security pensions would raise consumption by nearly 20 percent. Taking the rise of Medicare-Medicaid costs into account, and assuming that those programs would also shift from pay-as-you-go to a fully funded system, would raise disposable income by 35 percent.
give the federal government the fiscal ability to respond to other challenges that may face the domestic economy or our global security in the future.

**The transition**

These advantages relate to the fully funded system in the long run, after a complete transition from the existing pay-as-you-go system to a fully funded system has taken place. How would such a transition work in practice? Although there are many possible transitions to such a system, there are only two basic alternatives: immediate transition with "recognition bonds" or a gradual substitution from the pay-as-you-go system to a prefunded system.

The first method, which was pursued by Chile, substitutes new government bonds for the existing implicit claims of retirees and current employees. Individuals receive these recognition bonds, the Social Security system is eliminated, and employees are required to save in special mandatory saving accounts. Individuals may be required to use these recognition bonds as assets of the mandatory saving accounts or may be allowed to sell them and place the proceeds in the new mandatory accounts. Individuals would, of course, also be required to pay additional taxes so that the government could service the recognition bonds or pay them off over some period.

Andrew Samwick and I have calculated the value of the recognition bonds that would be given to these individuals in the United States based on obligations at the end of 1995. If future benefits (net of the taxes that remain to be paid before retirement) are discounted at a real discount rate of 4 percent, the value of the newly created debt would be $7 trillion, about equal to GDP and twice the size of the existing national debt as conventionally measured. If the future obligations were discounted at a real rate of 2 percent (about equal to the historic real yield on U.S. government debt), the present value of the claims would be equivalent to a debt of $12 trillion.

Recognition bonds may be an appealing method of transition in countries where the existing system of pay-as-you-go pensions is seen as a failure and in which the potential recog-
nition bond debt is relatively small. In the United States, however, Social Security pensions are a very popular program, and the cost of servicing the recognition bonds would be very large. I have therefore focused my attention on the alternative approach: a gradual transition that keeps the existing structure of the Social Security pensions.

One such transition that I have analyzed in detail can be thought of as a plan in which the government guarantees the Social Security retirement benefits that are projected under current law, but uses a transition to a fully funded system to pay for these benefits. More specifically, existing retirees would continue to receive benefits that are funded exclusively by the payroll taxes. When current employees retire, they would receive a mixture of pay-as-you-go benefits (financed by future payroll taxes) and benefits financed by the assets accumulated in individual mandatory "personal retirement accounts." The mixture of pay-as-you-go benefits and funded benefits would depend on the age of the individual, with the younger age cohorts depending more on their own accumulated assets. In the long run, the pay-as-you-go system would be completely replaced by a fully funded system of individual accounts.

The key problem of any transition is that employees during the transition period must pay payroll taxes to support the existing retirees and, at the same time, must accumulate assets for their own retirement. This creates the false impression that existing employees would pay twice as much during the transition years as they would have paid if the pay-as-you-go system continued unchanged. That impression is false for two reasons. First, the amount that individuals have to save for their own retirement is far less than the pay-as-you-go payroll taxes that they must now pay to support the existing retirees. As the illustrative calculation earlier in this paper indicated, a pay-as-you-go system that requires a 19 percent payroll tax could be replaced in the long run by individual savings equal to only about 2 percent of the same payroll tax base. Thus, during the transition, the maximum amount that individuals would be required to save (in addition to the payroll taxes that they pay to support existing retirees) would be
that 2 percent.\textsuperscript{7} Second, over time, the cost of the pay-as-you-go benefits would decline as the initial retirees die and the new retirees substitute an annuity, financed by the mandatory accumulated assets, for an increasing part of the unfunded benefits.

The transition that Samwick and I analyzed begins with a mandatory saving equal to 2 percent of payroll in addition to the existing 12.4 percent Social Security payroll tax, a combined mandatory payment of 14.4 percent of the payroll tax base.\textsuperscript{8} \textsuperscript{9} As the initial retirees die and are replaced with individuals who receive annuities based on the mandatory savings in their personal retirement accounts, this 14.4 percent declines (in spite of the increasing ratio of retirees to working-age population). The combined mandatory payment declines from 14.4 percent in the first year of the transition to 13.8 percent by the tenth year of the transition and to 13.2 percent by the fifteenth year of the transition. In the nineteenth year, the combined mandatory payment is less than the 12.4 percent that would be required under the existing pay-as-you-go system.\textsuperscript{10} The combined mandatory payment then declines rapidly from 10.7 percent of payroll in the twenty-fifth year to 6.9 percent in the thirty-fifth year and, eventually, to 2.02 percent of payroll.\textsuperscript{11}

\textsuperscript{7} In practice, the actual amount would have to be somewhat higher in order to deal with the problems of risk and redistribution. I return to this below.

\textsuperscript{8} This simulation, based on the actuarial assumptions of the U.S. Social Security actuaries and the demographic projections of the U.S. Census Bureau, is designed to maintain the relation of retirement benefits to preretirement income that is now found in current Social Security law. The 12.4 percent is the current employer-employee payroll tax for the Old Age, Survivors and Disability programs; it excludes the tax to support the Medicare portion of the Social Security program.

\textsuperscript{9} Since the payroll tax base is about 40 percent of GDP, this is equivalent to a bit less than 6 percent of GDP.

\textsuperscript{10} This assumes that nothing would be done under the existing pay-as-you-go system to enhance the trust fund and postpone the date at which the funds are exhausted and, therefore, at which the tax rate must jump to the new higher equilibrium, currently projected at about 18 percent in the year 2030.

\textsuperscript{11} Even with the lower net return of 5.5 percent, the initial rise in the payroll tax would be less than 4 percent of payroll, i.e., less than 1.5 percent of GDP. The combination of the payroll taxes and the mandatory saving would then decline gradually and would be less than the current 12.4 percent of payroll within 30 years.
In short, a gradual transition to a fully funded system could be done with relatively little extra burden on taxpayers in the early years and a much smaller total burden in later years.

**Individual accounts or a government fund?**

A common feature of the "privatized" social security pension systems in other countries is that they permit individuals to contribute their mandatory saving to individual accounts that can be invested in private financial assets. Some proponents of replacing the existing pay-as-you-go system with a funded system do not favor mandatory saving and individual accounts but advocate using a higher payroll tax rate to accumulate a larger government trust fund that would be invested in private stocks and bonds. The existing defined-benefit structure of Social Security benefits would be retained.

This form of prefunding might, in principle, be able to achieve the benefits of the higher rate of return associated with increased capital formation. It could, therefore, permit funding future benefits at a much lower cost than the existing pay-as-you-go system. It would thus be a significant improvement over the existing pay-as-you-go system. I nevertheless believe that the goals of reform would be much better served with mandatory contributions to individual personal retirement accounts. There are four primary reasons for this.

First, a large government trust fund might not actually increase the nation's capital stock if it leads to offsetting increases in government borrowing. This is a significant risk because the accumulation of tax receipts in a Social Security trust fund would be treated in the government accounts as

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12 The extra burden, starting at 2 percent of payroll and declining to zero in the nineteenth year, can be thought of as an investment by which existing employees "buy" lower-cost retirement pensions in later years for themselves (if they are young enough) and for all future generations. This "investment" is worthwhile if the discounted present value of the future reductions in mandatory payments (taxes plus mandatory saving) exceed in present value the extra payments made by the transition generation. It can be shown that this is true in a growing economy if the profitability of additional investment exceeds both the rate of growth of total wages and the rate at which individuals discount future consumption, two conditions that are satisfied in the United States. For a further discussion of these conditions, see the appendix to my introduction in Martin Feldstein, *Privatizing Social Security* (Chicago: University of Chicago Press, 1998 forthcoming).
creating a budget surplus, thus tempting politicians to increase government spending or reduce other taxes. If the overall budget deficit or surplus target is decided on the basis of the unified budget (i.e., without distinguishing the Social Security part of the budget from the rest of the budget), the accumulation of a Social Security trust fund would lead to offsetting deficits in the rest of the budget and would, therefore, have no effect on national saving. Without that increased saving, there would be no real 9 percent rate of return. That would be true even if the trust fund invested in private stocks and bonds since the induced deficit elsewhere in the budget would imply the sale of government bonds that crowd out other private borrowing and investments. With mandatory savings deposited in individual accounts, there would be no direct impact of the Social Security funding on the federal deficit and, therefore, no temptation to offsetting spending or tax reductions. All of the mandatory saving would be available to invest in additional plant and equipment with the 9 percent national rate of return.

Second, if the federal government is responsible for a trust fund that will eventually contain trillions of dollars of private stocks and bonds, there would be strong political pressures to influence how those funds are invested, e.g., avoiding companies that make certain kinds of products or that do business in certain countries with which the United States has political disputes. It would also not be surprising for Congress to try to distribute funds to companies in all parts of the country just as the defense budget is geographically distributed. The result would be a reduced return on the investment funds and an unwelcome interference by the government in the private sector.

Third, if the government controlled the accounts, there would be less prospect of innovative products, e.g., minimum guaranteed returns and mixtures of defined-benefit and de-

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13 The recent legislation to balance the federal budget in 2002 made no distinction between the net revenue going to the Social Security trust fund and other government receipts and expenditures. It is impossible to know what the budget target would have been without the Social Security surplus in 2002; if the target would still have been a balanced budget, the surplus would make no contribution to national saving.
fined-contribution plans. The quality of service would also probably be less with a government monopoly than in a system of competing private providers.

Fourth, to the extent that the government simply invests its fund in a broad index of stocks and bonds in order to avoid interference with the private economy, it would undermine the role of the capital market in channeling funds to the most productive uses. In contrast, even with regulations that restrict the range of investment options in private accounts, there would be more scope for individuals to direct funds to different groups of domestic and foreign securities. Moreover, to the extent that individuals use their accounts to purchase defined-benefit annuities, their saving would permit a wider range of investments by discretionary institutional money managers. Finally, a large government trust fund could easily be used to support a defined-benefit system that gives politicians the opportunity to redistribute funds toward favored groups just as the current Social Security system gives more favorable implicit rates of return on the taxes paid by single earner households, by older workers, and others.

For all of these reasons, I favor using individual personal retirement accounts rather than a single large government account. Using such individual accounts would require careful attention to the administrative structure to prevent administrative costs from becoming too high, especially for small accounts. The key aspect of this would be to have the funds paid by firms on behalf of their employees, with each firm selecting a single financial intermediary to receive those funds. That financial intermediary, a bank or securities firm or mutual fund, would then have the obligation to forward each employee’s contribution to the particular approved investment that that employee had chosen. Employers could also specify a “default option” to which investments would be sent, e.g., an indexed fund that combined a broad equity index and a bond index, for those employees who do not express any preference. The experience of American mutual funds and 401k

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14 The financial intermediary that receives the funds from the employers and pays it to investment managers might instead be the Social Security Administration.
plans makes it clear that such a system could be managed at a cost that is a fraction of 1 percent of assets and, therefore, a small fraction of the difference between the implicit return on a pay-as-you-go system and the return that would be earned in a funded system.

Risks of funded and unfunded systems

An analysis of the choice between a pay-as-you-go system and a prefunded system should consider the risks born by retirees under the two alternatives. While this is sometimes characterized as a problem of the riskiness of portfolio returns, it is important to bear in mind that an unfunded pay-as-you-go system is itself very risky in its own way.

An unfunded pay-as-you-go system is risky because the level of future benefits depends on the willingness of future voters and future Congresses to support the taxes required to provide such benefits. In the past, the unfunded pay-as-you-go system was a popular one with voters because it had a relatively low rate of tax and a high implicit rate of return. That low tax rate and high implicit return were possible because of the favorable demographics (i.e., the high ratio of taxpayers to retirees) and the rapid increase in the tax base (due to the rapidly expanding number of taxpayers and the rising average wage). In the future, the pay-as-you-go system is likely to be much less popular as the payroll tax rate rises and the implicit rate of return declines. The level of benefits that the political system will support in this context is very uncertain.

Indeed, during the past 15 years, the effective level of U.S. Social Security benefits has been reduced by making benefits taxable (above a certain fixed nominal income level) and then reduced again by increasing the fraction of benefits subject to tax. The real value of future benefits was also reduced by postponing the normal retirement age from 65 to 67. More recently, there was much discussion about slowing the growth of benefits by reducing the inflation adjustment relative to the official Consumer Price Index. Other proposals include subjecting benefits to a means test that would further lower the net benefits paid to higher income individuals. These political risks are likely to increase over time as the financing problems of the Social Security program grow. There is, moreover,
no way that an individual can hedge these political risks.

In contrast, while a prefunded program involves the risks of fluctuating portfolio returns, individuals can easily protect themselves against these market fluctuations by saving somewhat more in their Personal Retirement Accounts than would otherwise be required. This extra saving would provide a higher expected accumulation of retirement benefits to act as a cushion against the risk that the actual return would be less than the expected return. Some preliminary analysis suggests that a relatively small amount of additional Personal Retirement Account saving would permit individuals to be virtually certain of receiving an annuity equal to the benefits specified in the current Social Security rules. Thus risk appears to be quite a manageable problem in a prefunded system in which individuals invest in a broad index of stocks and bonds.

**Distributional issues**

The shift from a pay-as-you-go system to a funded system involves three kinds of distributional issues: During the transition, which are the age groups that win and which are the age groups that lose? How would replacing the pay-as-you-go system with a prefunded system affect the relative income of typical employees and high-income individuals? How can the retirement benefits of the poor be protected in a system of individual accounts?

**The impact on different age cohorts.** Because the existing pay-as-you-go tax rate is not sufficient to finance the benefits specified in the current Social Security law, there must eventually be a change in either the taxes or the benefits or both. The mix and timing of the changes determines the pay-as-you-go baseline to which the transition to a funded system can be compared. One simple, but politically unlikely, assumption is that no change would be made until the trust fund is exhausted in 2030 and that, at that time, taxes would be raised from 12.4 percent to the level needed to fund the benefits specified under current law. Such a baseline would leave the expected incomes of everyone who would retire by 2030 unchanged, i.e., everyone born before 1965 would be unaffected. In contrast, a transition to a pay-as-you-go system would temporarily raise the combination of the tax rate plus
the mandatory Personal Retirement Account contribution for those who are not yet retired. The combined rate would remain higher until the reduction in the pay-as-you-go tax exceeds the mandatory saving. In the specific transition Samwick and I studied this occurs after 19 years.

Such a transition (in which mandatory Personal Retirement Account contributions begin at age 30) has the following distributional consequences: Those who are at least 65 years old (and therefore presumed to be retired) when the transition begins are completely unaffected. Those who are at least 45 years old (but not yet 65 years old) would always face a higher combined mix of taxes and Personal Retirement Account contributions. Those who are younger will face a higher mix for 19 years and then a lower mix. The younger they are, the more likely that the present value of the combined payments will be lower in the transition than in the baseline.

Alternative modifications to the current pay-as-you-go system would create different baselines and, therefore, different relative distributional effects. For example, the politically more likely combination of benefit reductions and a gradual tax increase starting relatively soon under the pay-as-you-go system would cause the transition to a funded system to be relatively favorable to existing retirees and to those who will retire in the near future.

The effects on the middle class and the rich. After the transition to a funded system, the average employee would be much better off than under the existing pay-as-you-go system while high-income individuals would generally be worse off. To see why, consider first a typical employee who pays a 20 percent effective federal and state income tax and who, under the pay-as-you-go system, would face a combined employer-employee Social Security payroll tax rate of 19 percent. The combination of this payroll tax and a 20 percent effective rate of income tax implies that each $100 of gross wage would produce a net take-home wage of approximately $61.\textsuperscript{15} The shift to a fully funded system would have two effects. First,

\textsuperscript{15} This is an approximation because it ignores the fact that the employer's portion of the payroll tax is excluded from the individual's taxable income. It also excludes the Medicare portion of the tax which could become very large, increasing the effect described in the text.
by increasing the capital stock, it would raise the productivity of labor and, therefore, the wage rate. The analysis of the effect of a funded system on saving that is summarized in the next section of this article indicates that a shift to a funded program would raise the capital stock in the long run by 34 percent. Such an increase in the capital stock would increase real wages by about 7 percent. Each $100 of gross wage would thus become $107. Second, and more important, the payroll tax rate of 19 percent would be replaced by a Personal Retirement Account contribution of less than 3 percent. Applying the sum of the 20 percent income tax rate and the 3 percent Personal Retirement Account contribution to the $107 gross wage yields a net take-home wage of $82, an increase of 34 percent from the $61 take-home wage with the pay-as-you-go system. The source of this 34 percent gain in the spendable income of the typical employee is, of course, the large increase in the capital stock owned by these wage earners and used to finance their retirement.

What about high-income individuals? The increase in the total capital stock makes capital less scarce and drives down its return. A 34 percent rise of the capital stock would eventually lower the pretax rate of return on capital from 9 percent to 7.2 percent. This 20 percent decline in the rate of return on capital would cause a decline in the income of high-income individuals for whom capital income is relatively important and for whom the maximum taxable wages for the Social Security payroll tax is only a small part of total compensation.

**Protecting poor retirees.** In a government defined-benefit program, whether funded or unfunded, the benefits can be set to achieve any desired degree of income redistribution and income maintenance. In contrast, in a funded system based on individual accounts, each individual's retirement benefits depend on the amount that he earned and saved during the working years. It is of course possible, however, to introduce an element of redistribution to protect the poor. During the transition, the pay-as-you-go system would continue to operate and to provide the same protection to the poor as under the pure pay-as-you-go system. After the transition, the very high rate of return in the funded system relative to the pay-as-you-
go system makes it very easy to provide at least this amount of income maintenance for the poor while leaving all others much better off than they would be under the pay-as-you-go system.

As an example of this, Samwick and I calculated in our 1996 paper that the Personal Retirement Account annuities of all retirees could be raised to at least 50 percent of the median annuity (a higher standard of income maintenance than the current Social Security system achieves) by levying a 5 percent tax on all Personal Retirement Accounts at age 65 and redistributing the funds to those whose pensions would otherwise be less than 50 percent of the median. Since the mandatory saving during working years that would be required to fund a Personal Retirement Annuity equal to the projected Social Security benefits would be less than 3 percent of covered wages, this redistributive function could be financed by increasing the mandatory saving rate by less than 5 percent of 3 percent, i.e., from less than 3 percent to less than 3.15 percent of wages. While there are a variety of other issues involved in protecting the poor (e.g., the benefits available to women who become widowed at a young age), it is clear that the distributional issues, like the problem of risk, are very manageable.

Effects on national saving and capital accumulation

During the long phase-in period from the existing pay-as-you-go system to a fully funded program, individuals would contribute between 1.5 percent and 2 percent of their wages to their Personal Retirement Accounts. These mandatory savings would provide the base for a substantial increase in national saving. The increased national saving and the greater capital stock that would result from prefunding Social Security would, however, not just be the accumulation of these mandatory savings. Even more important would be the investment return that would be earned on those accumulated funds and that would be retained in each individual's Personal Retirement Account until that individual retires.

Even with contribution rates that are only between 1.5 percent and 2 percent of wages, the assets in the Personal Retirement Accounts would grow very rapidly. The accumu-
lated balances in these accounts would reach 25 percent of covered wages (about 10 percent of GDP) after only 10 years and about 80 percent of covered wages (more than 30 percent of GDP) after 25 years. Looking further ahead to a time 75 years from now, when the gradual transition from a pay-as-you-go system to a fully funded system would be complete, the accumulated Personal Retirement Account balances (net of all the benefit payouts that have been made) would equal 2.3 times that year's total payroll or about 100 percent of GDP. Stated differently, the increased balances in the Personal Retirement Accounts would be equivalent to a 34 percent rise in the capital stock.

These calculations are based on an analysis that keeps the government's budget deficit unchanged. That is, the pay-as-you-go benefits are financed out of current payroll taxes. Similarly, all of the additional corporate tax revenue that results from the incremental mandatory saving is contributed back to the Personal Retirement Accounts. Thus there is no increase or decrease in the national debt relative to the baseline that would prevail with the unchanged pay-as-you-go system.

If the shift to the prefunded system of Private Retirement Accounts does not alter other private saving, the increase in national saving is equal to the net flow into the Personal Retirement Accounts plus the return on the investment in those accounts. But what if other private saving responds to the shift from the pay-as-you-go system to the prefunded system? Any such induced change in other private saving would change the net impact on national saving and the capital stock.

To consider the likely change in other private saving, note first that the shift to a mandatory prefunded system would not alter the benefits that individuals would receive in retirement. The transitions that I have studied have been calibrated to keep the combination of pay-as-you-go benefits and the Personal Retirement Account annuities equal to the pay-as-you-go benefits specified under current law. The shift to the prefunded system, therefore, would not induce individuals to reduce private saving because of an expected increase in retirement income. The primary reason to change other saving would be the effect of the transition on the level of disposable income during preretirement years.
Consider first how private saving would be expected to respond in the long term when the combination of the mandatory saving and the pay-as-you-go tax are lower than the payroll tax would be in the existing pay-as-you-go system. This implies that the disposable income of individuals in their preretirement years would increase while the disposable income during retirement would remain unchanged. Instead of increasing consumption only during the preretirement years, individuals would generally want to spread the higher disposable income during their working years between higher consumption at that time and in retirement. That is, they would save some of the higher disposable income that would result from the lower payroll tax. The response of private voluntary saving would, therefore, increase the national saving rate. The rise in the capital stock would, therefore, be greater in the long run than the increase that comes directly from the balances of the Personal Retirement Accounts.

During the early part of the transition, the combination of the mandatory saving and the pay-as-you-go tax would exceed the baseline pay-as-you-go tax, causing a decline in disposable income. In the first year, for example, individuals would experience a decline of disposable income equal to 2 percent of wages up to the maximum tax base in the Social Security program. Individuals who experienced such a decline in disposable income during their working years (while their expected retirement benefits remained unchanged) would presumably want to reduce some of their saving in order to cushion the decline in consumption and spread the consumption decline between their working years and their retirement years. However, this effect is likely to be very small because most individuals have little or no saving that can be reduced in this way. Even at age 60, the median financial wealth of households is less than six months of earnings. Moreover, even those small saving balances are generally held as “emergency reserves” for uncertain events (uninsured medical bills, replacing consumer durables that break, etc.) and would, there-

16 In the transition Samwick and I analyzed, it would happen in less than 20 years. After that date, the combination of mandatory savings and payroll tax would remain permanently less than the current payroll tax rate.
fore, not be reduced to spread the income decline.

Thus the rise in saving during the early transition years would be somewhat less than the previous discussion implied, and the rise in saving in the long run would be substantially greater. I have no doubt that the net effect of the transition from the pay-as-you-go system to the prefunded system would be a rise in national saving and, therefore, a larger capital stock and a higher level of real national income.

**Political will**

A shift from the existing pay-as-you-go system to a fully funded system can maintain or increase retirement benefits while eventually providing a very substantial reduction in taxes. Although there would be some increase in individuals' mandatory payments (taxes plus mandatory saving) during the years of transition to a funded system, those incremental amounts would be small relative to existing taxes and to the very substantial tax reductions that would eventually be achieved. The net effect would eventually be a substantial increase in the real disposable incomes of the vast majority of wage earners. A further advantage of the funded system is that it would avoid the political risks of an increasingly costly pay-as-you-go program with an unfavorable rate of return. Although the returns on a funded portfolio are also risky, the potentially adverse consequences of the fluctuations in asset prices can be avoided by a relatively small increase in the mandatory saving rate. The high rate of return on the funded assets also means that the retirement income of the poor can be enhanced at relatively low cost. Finally, the mandatory saving accounts would eventually create a substantial increase in the nation's capital stock that would cause a correspondingly large rise in real wages.

There are several important practical issues that need to be examined and resolved before a transition to a funded system could occur. These include decisions about the restrictions on the investments to be allowed in the Personal Retirement Accounts, the treatment of married couples, and the rules governing the payout of benefits during retirement. None of these problems is insuperable if there is the political will to accept
the shift from the existing system to one that will provide a much higher long-run standard of living.

References


