



Global Economics Paper No. 120

GS GLOBAL ECONOMIC WEBSITE

Economic Research from the GS Institutional Portal
at <https://portal.gs.com>

Thoughts on Social Security Reform

- Social Security faces a long-term budgetary imbalance
- Addressing it now would improve the long-term growth outlook
- However, privatization is no free lunch
- Reform Plan 2 restores actuarial balance mostly via benefit cuts
- Personal accounts would expose Social Security participants to much more market risk
- Transitional Treasury financing would be large, but the impact on interest rates modest

Important disclosures appear at the back of this document.

**William C. Dudley
Jan Hatzius
Edward F. McKelvey
January 18, 2005**

Table of Contents

Highlights	1
I. Social Security—Defining the Problem	3
II. Why Social Security Needs To Be Fixed	8
III. Options for Closing the Financial Imbalance	11
<i>Changing the Parameters of Social Security</i>	11
<i>Drawing on Other Government Resources</i>	12
<i>Increasing the Size of the Economic Pie</i>	13
IV. Does Privatization Solve the Problem?	15
V. Reform Plan 2: Moving from the Abstract to the Specific	19
<i>No Free Lunch</i>	21
<i>Higher Expected Returns Mean More Risk</i>	21
<i>Return Assumptions Too High</i>	22
<i>Evaluating the Personal Saving Accounts of Reform Plan 2</i>	23
<i>Modest Implications for Financial Markets</i>	24
VI. Conclusions and Recommendations	27
Recent Global Economics Papers	29

Highlights

- **Social Security faces a long-term budgetary imbalance.** Increases in longevity will raise the ratio of retirees to workers sharply over the next few decades, pushing the program into an operating deficit. Eventually, large accumulated trust fund balances will be exhausted and Social Security benefits will have to be cut to be brought in line with payroll tax revenue.
- **The budgetary pressure will start long before the trust fund is exhausted.** The positive contribution of Social Security to the budget is anticipated to peak in 2008, when the first cohort of the baby-boom generation is eligible to receive benefits. The system is projected to turn cash-flow negative in 2018, and in 2042 the trust fund is exhausted.
- **The Social Security shortfall is exacerbated by other budget problems.** In particular, the structural budget balance has deteriorated sharply in the last four years. Moreover, assuming that the first-term Bush tax cuts are made permanent, little improvement appears likely over the next decade. Even more importantly, the budgetary pressure from Medicare occurs sooner and is much larger than the pressure created by Social Security.
- **These budgetary problems threaten the nation's long-term economic performance**—reducing national saving, impeding capital formation, limiting productivity growth, and thereby stunting growth in living standards. The process is a self-reinforcing one, with slower growth generating less government revenue and bigger budget deficits.
- **Arguments that reform is unnecessary are unconvincing.** Although the trust fund is not projected to go broke until 2042, the pressure on the budget begins much sooner. Although the outcome could turn out to be better than the Social Security Trustees project, the intermediate set of economic and demographic assumptions used by the Trustees does not appear, on balance, to be systematically too pessimistic.
- **There is no “correct” way to do reform.** The choices reflect political judgments on how the burden should be apportioned between workers, retirees, and across generations and income cohorts.
- **The alternatives are myriad:** raising payroll taxes; increasing the earnings limit against which payroll taxes are assessed; indexing benefits to prices; indexing the retirement age to longevity; means-testing benefits; diverting resources from other parts of the budget and the economy either contemporaneously or across time, via borrowing. Or steps could be taken aimed at raising national income, including allowing greater immigration, raising the normal retirement age, or creating a true trust fund in which Social Security surpluses are walled off and used to lift national saving.
- **Privatization (i.e., the partial or full replacement of the current pay-as-you-go system with voluntary or mandatory personal accounts) is no free lunch.** The notion that such accounts, by raising the rate of return on invested assets, would restore Social Security to health ignores the fact that these higher returns come at a cost of greater risk.

- **Because privatization does not raise national saving, it is unlikely to lead to a bigger economy that could more easily bear the burden of an expanding retiree population.** Privatization merely rearranges the deck chairs. The higher returns of the privatized accounts are offset by lower returns elsewhere in the economy.
- **Reform Plan 2 of the 2001 *President's Commission to Strengthen Social Security* is likely to be the Bush administration's template for reform.** This proposal would allow workers who were less than 55 years old at the time legislation was enacted to divert 4 percentage points of their payroll taxes (up to \$1,000 per year initially) into personal saving accounts (PSAs).
- **Traditional benefits would be cut** in two ways. First, there would be a clawback of traditional Social Security benefits to reflect the monies diverted to establish the PSAs. Second, the benefit formula for Social Security would be indexed to prices rather than wages.
- **Reform Plan 2 would restore Social Security to long-term solvency.** However, this would occur mainly by cutting the projected monthly benefit from Social Security sharply. Over the very long run, the plan would dramatically lower the replacement ratio of benefits to median income. This would ultimately make the traditional Social Security system virtually irrelevant.
- **Beneficiaries would assume much more market risk as retirement income would depend, in part, on the level of stock prices and real interest rates at the time of retirement.** The difference between benefits for those retiring in a benign financial market environment like 2000 versus a more pernicious environment like early 2003 could be as much as one-third. Moreover, this disparity in benefits would persist throughout the lifetimes of the beneficiary and any surviving spouse.
- **Although Treasury financing needs would climb sharply for several decades (by about \$100 billion per year initially), these borrowing requirements would only generate modest upward pressures on interest rates.** That is because the increased financing would be offset by the monies flowing into the PSAs. The first-order impact on national saving would be nil.

I. Social Security—Defining the Problem

The Social Security system consists of two programs—the Old-Age and Survivors Insurance (OASI) Trust Fund that pays monthly benefits to retired workers and the Disability Insurance (DI) Trust Fund that pays monthly benefits to disabled workers. Currently, the combined program (OASDI) is generating large surpluses. In 2003, for example, Social Security generated an operating surplus of \$68 billion as receipts (excluding interest) of \$547 billion exceeded benefit payments and administrative expenses of \$479 billion. In addition, the OASDI trust funds were credited with \$85 billion of interest reflecting past operating surpluses. However, the interest has no impact on the unified federal budget as this revenue is matched by an accounting charge to the Treasury.

The Social Security system is feeling the stress of demographic change, mainly because of rising life expectancy.

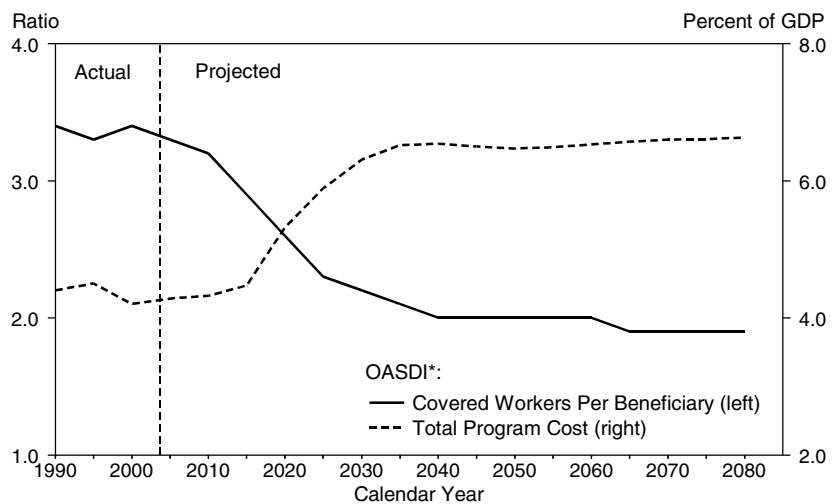
Although the Social Security system currently has a large operating surplus, this situation will not persist much longer. That is because the Social Security system is feeling the stress of demographic change. Two factors stand out. The most important is that Americans can expect to live much longer today than in the 1930s, when Social Security was created. For example, in 1940 life expectancies were 70 years for men and 76 years for women. Many workers who paid into the system (overwhelmingly men in those days) never lived to collect benefits; those who did lived only another 13 years, on average. Today, with more women in the workforce and life expectancies about 10 years longer, many more workers will reach retirement and can expect to live another 15-20 years. Moreover, this trend toward longer life expectancy is expected to continue.

The other factor is the impending retirement of the baby-boom generation. The first cohort of this group, born between 1946 and 1961, will become eligible for reduced retirement benefits in 2008 and full benefits in 2012. As succeeding cohorts retire over the following 15 years, the number of Social Security beneficiaries will rise sharply.

Over the next 25 years, Social Security outlays are projected to rise to 6.3% of GDP from 4.3% currently.

The impact of these developments, plus other demographic changes, is summarized in Exhibit 1. The solid line shows the actual and projected ratios of covered workers to Social Security beneficiaries. Under the Social

Exhibit 1: Increasing Life Expectancy Pressures Social Security



* Intermediate case assumptions.
Source: 2004 Social Security Trustees Report.

Security Trustees' intermediate-range assumptions, this ratio—currently about 3.3—will drop to about 2 by 2030. The dotted line shows actual and projected Social Security benefits as a percentage of GDP. Over the next 25 years, this share is projected to rise to 6.3% from 4.3% currently. Absent an increase in revenue, this upward shift will push Social Security from surplus into deficit, eventually reducing the trust fund balance to zero in 2042. Thereafter, payment of full benefits would require the diversion of funds from the general fund of the US Treasury. Thus, as currently structured, the Social Security system is underfunded.

The milestones in Social Security's migration from a factor benefiting the federal budget deficit to one aggravating it are as follows:

Although the exhaustion of the trust fund often gets top billing in the public debate, we believe changes in the cash balance are more important.

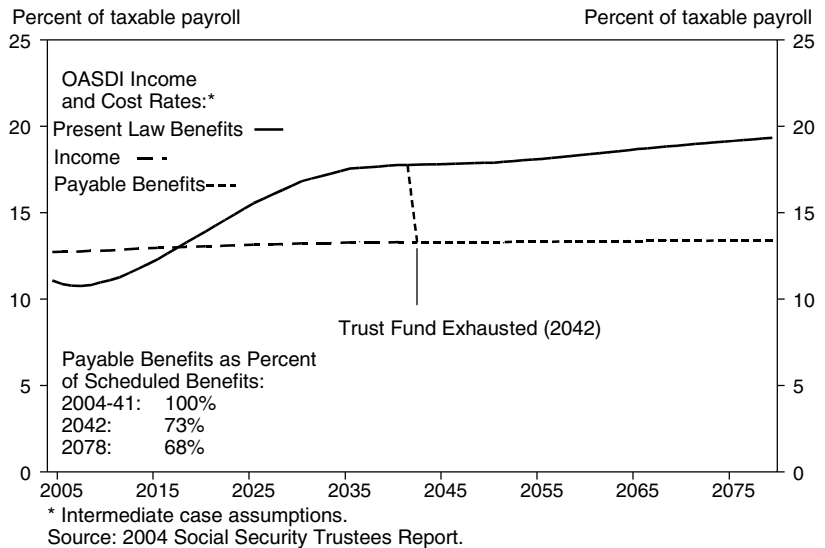
1. **Social Security's contribution to the federal budget balance is projected to peak in 2008, as the baby-boom generation starts to retire.** This is the high water mark for the difference between inflows into the trust fund, net of interest receipts, and benefit payments. We exclude the interest on trust fund assets because this is an intergovernmental transfer that has no net impact on the overall budget position or on the financing requirements of the federal government.
2. **Social Security starts adding to the federal deficit in 2018.** This is when revenues, net of interest, are projected to start falling short of benefit payments. At this point, the Trustees estimate that the combined OASDI trust fund will have more than \$5 trillion in special US Treasury securities. On paper, the interest earned on these securities, coupled with eventual liquidation of the fund, can supplement revenues to allow full payment of benefits to continue. However, in reality this simply increases the overall deficit, as the Treasury borrows more in the open market to make up the difference.
3. **The Social Security trust fund is projected to run out in 2042.** Although this event often gets top billing in the public debate, we believe it is the least important milestone. The only real change is that the Social Security system will no longer be legally obligated to pay full benefits after the trust fund has run out. If payments were constrained by inflows into the system, then retirees would receive only partial benefits—currently estimated at 73% of the promised amount in 2042, edging down to 68% in 2078. This is shown in Exhibit 2, which plots the projected paths of benefits and receipts as shares of taxable income.

If the long-term budget outlook were favorable in other respects, then Social Security would not be a very bothersome problem.

If the long-term budget outlook were favorable in other respects, then Social Security would not be a very bothersome problem. After all, the operating deficit of Social Security climbs to only about 2% of GDP by 2080. The large present value estimates often cited by advocates of reform—an estimated \$3.7-trillion actuarial imbalance over the next 75 years and \$10.4 trillion on an infinite horizon basis—must be viewed in the context of the present value of US GDP over similar timeframes, which is several orders of magnitude higher.

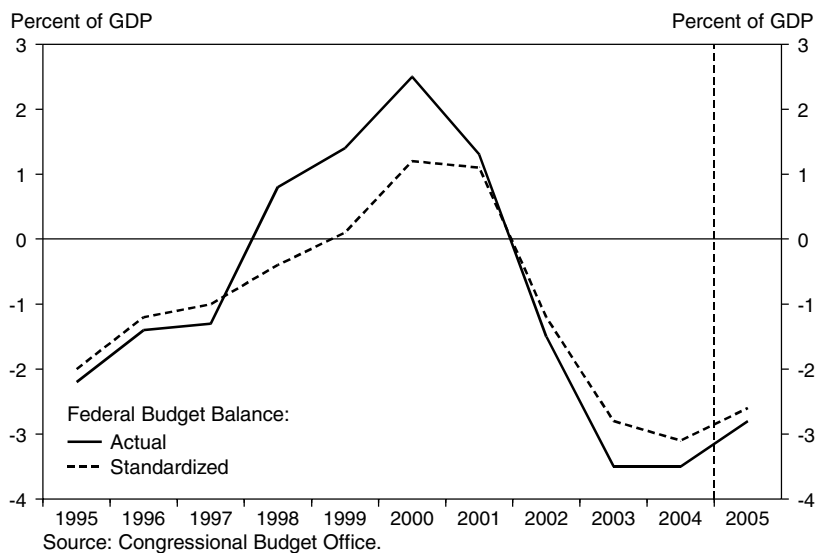
Unfortunately, however, the deterioration in the finances of Social Security will be occurring at a time that the budget deficit has already deteriorated sharply. Moreover, most of the deterioration over the past four years has been structural rather than cyclical, as the recession was so mild. As shown in Exhibit 3, the CBO's "standardized," or structural, budget balance was in surplus in 2000 but had moved to a deficit of 3.1% of GDP by fiscal 2004.

Exhibit 2: Benefit Payments Fall as the Trust Fund Is Exhausted



Unfortunately, however, the impending deterioration in the finances of Social Security will be occurring at a time that the structural, or “standardized,” budget deficit has already deteriorated sharply.

Exhibit 3: Structural Deficit Adds to Budget Woes



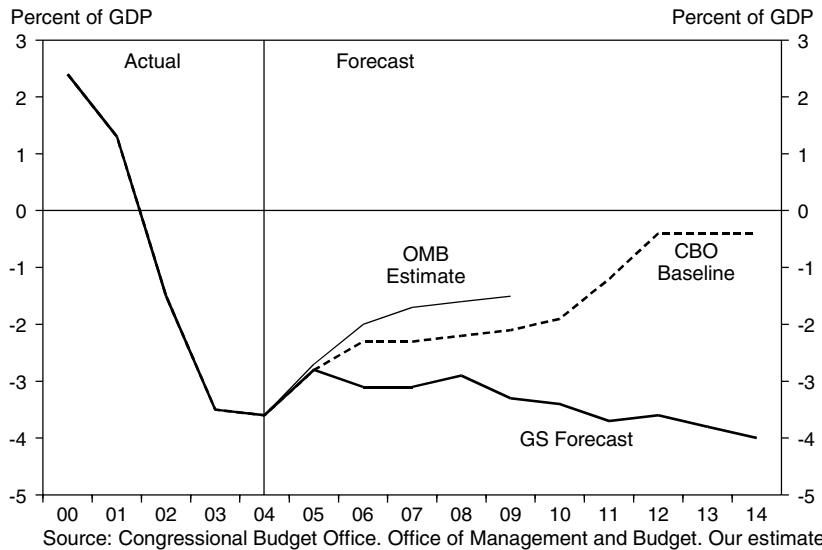
Our budget outlook is much more pessimistic than official estimates.

More importantly, there is little to suggest that the chronic budgetary imbalance will improve anytime soon. Although the official budget estimates of the OMB and CBO show improvement, our own estimates suggest that the federal deficit will average about 3½% of GDP over the next ten years (see Exhibit 4). Our budget outlook is much more pessimistic than official estimates for several reasons. Specifically, we depart from the “current law” assumptions mandated for the CBO baseline by assuming that: (1) defense spending stays at its current 4% of GDP, (2) other discretionary outlays rise 2% per year in real terms, (3) personal income tax cuts enacted in 2001 and 2003 are made permanent, and (4) the alternative minimum tax is indexed.

The imbalance in Medicare is both more immediate and ultimately much larger than the imbalance for Social Security.

Medicare is a third factor—beyond Social Security and structural deterioration—that makes the long-term budget outlook so gloomy. The imbalance in Medicare is both more immediate and ultimately much larger than the imbalance for Social Security. For example, Medicare is already a factor boosting the deficit, as outlays exceed dedicated tax receipts, and this

Exhibit 4: Official Baseline Estimates Are Too Optimistic



gap is widening as the Hospital Insurance (HI) trust fund heads toward a projected zero balance in 2019. Moreover, as shown in Exhibit 5, the share of GDP devoted to Medicare outlays is projected to rise much faster over the next 25 years—to 7% of GDP in 2030 from 2.7% currently. Medicare is subject to all the demographic stresses afflicting Social Security. In addition, per-capita costs are projected to continue rising faster than GDP. Finally, benefits are about to become much more generous, as the prescription drug benefit takes effect next year.

The reason that these budget pressures matter is that they will act to reduce national saving.

These budget pressures matter because they will act to reduce national saving. This, in turn, will lead to less investment, weaker productivity growth, and poorer economic performance. In fact, the process is a self-reinforcing one, as slower growth leads to higher deficits.

The links in this vicious circle are shown in Exhibit 6. The point of departure is to recognize that the deficit is a claim on national saving. Unless saving by other sectors rises dollar for dollar in response to an increase in the federal

Exhibit 5: Medicare Pressures Budget Sooner, More Powerfully

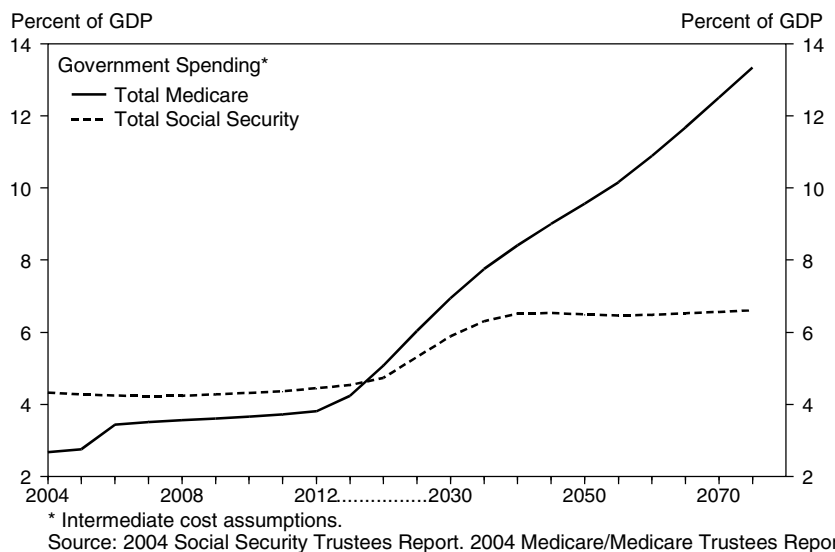
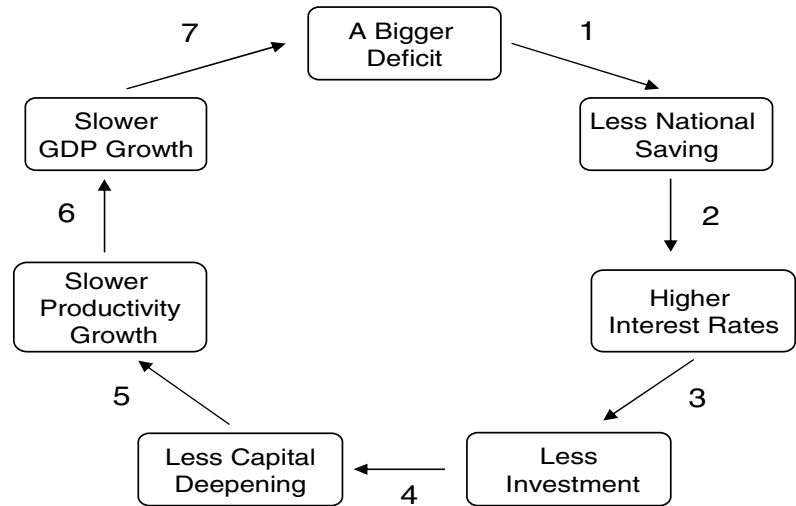


Exhibit 6: A Vicious Circle—Deficits Hurt Growth, Raising Deficits



Fixing the nation's chronic budgetary imbalances is important in order to avoid a vicious cycle.

deficit, national saving will fall. Once this has been established, the effect on private investment follows through the saving/investment identity. In this regard, the Council of Economic Advisers posited that for each \$1 increase in the budget deficit, aggregate saving would fall 60 cents.¹

The next three links are more self evident. For example, the fourth link—less investment leads to less capital deepening—is true almost by definition. The fifth link—the notion that less capital deepening should lead to slower productivity growth—also seems obvious; if workers have less capital to work with, this should reduce the amount of output that they can produce per hour of work. Finally, as long as slower productivity growth does not stimulate an offsetting increase in labor-force growth, it must lead to slower potential GDP growth.

But the story doesn't stop there. Slower growth leads to less tax revenue and a larger budget deficit in a self-reinforcing circle of higher deficits and poorer economic performance. Fixing the nation's chronic budgetary imbalance is important in order to avoid this type of vicious cycle.

¹ See the 2003 *Economic Report of the President*, p. 56. Although the issue of what happens to interest rates has been hotly debated, it is really secondary to this basic finding. Interest rates are simply the mechanism by which saving is rationed to alternative investment opportunities; if the deficit reduces saving, then interest rates will be higher *than they otherwise would have been*.

II. Why Social Security Needs To Be Fixed

Over the next 35 years, the deterioration in Social Security finances is projected to worsen the unified federal budget balance and the overall saving/investment balance by slightly more than 2% of GDP. We believe this imbalance is sufficiently large to warrant a policy response.

We do not agree with those who believe that significant policy changes are unnecessary. They rely on three main arguments. The first is that the system's financial problems are supposedly so distant that there is no need to worry about them now. This view leans on the fact that the Social Security Administration expects the "trust fund" to remain solvent until 2042. We disagree, because our focus is not on the trust fund, but instead on the pay-as-you-go financial balance of the Social Security system. This balance is currently positive, but it is likely to peak in 2008 and to turn negative in 2018. Thus, Social Security will soon start to exert a drag on the unified federal budget, the ample trust fund notwithstanding.

To see that the trust fund has little economic meaning, consider a corporation that decided to "fund" its pension plan by filling it with its own corporate bonds, rather than purchasing the stocks and bonds of other corporations.

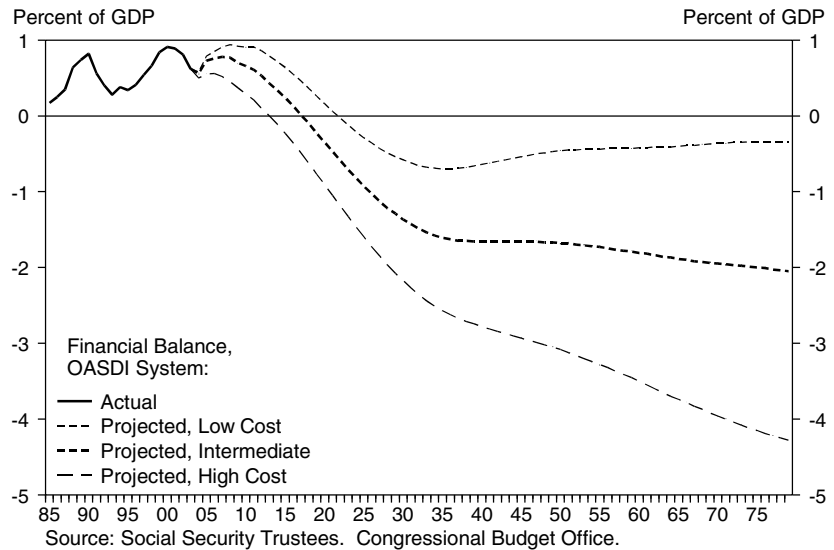
The reason why we do not focus on the trust fund is that it has little economic meaning. It is a fund only in name, as it holds nothing but fictitious Treasury securities. These IOUs from the rest of the federal government are not real assets in the usual sense because they only represent a claim of the federal government on itself, not a claim on another entity's capital. To see the distinction, consider the case of a corporation that decided to "fund" its pension plan by filling it with its own corporate bonds, rather than purchasing the stocks and bonds of other corporations. The accountants would never accept this maneuver because it would reduce the corporate pension plan to a mere promise by the corporation to pay its future retirees. There would be no real assets, purchased with hard cash, that could be used to back up the promise. Similarly, the Social Security trust fund is merely a promise by the federal government to future retirees that is not backed up by real assets. That does not mean the government will renege on the promise. After all, it has the power to tax. But no amount of financial accounting fiction can turn a promise to meet future pension promises through taxation into a funded pension plan.

In our view, the trust fund fiction is not just meaningless, but it has actually been damaging in terms of the public perception of Social Security. Polls show that many young people believe they will never receive a Social Security check because the system will have run out of money by the time they retire. Of course, this cannot happen in a pay-as-you-go system, unless payroll taxes are eliminated. But all the talk of a "trust fund" that is projected to "go broke" has obscured this reality in the minds of many workers.

Unless there are reasons to believe that the official projections are biased toward pessimism, uncertainty by itself should not be an excuse for doing nothing.

The second argument for why Social Security reform is supposedly unnecessary is that things might turn out better than the Trustees project. It certainly is true that the numbers are subject to a great deal of uncertainty, and the outcome is sensitive to the economic and demographic assumptions. As shown in Exhibit 7, the projected Social Security balance under the "low-cost" assumptions is -0.7% of GDP by 2040 and -0.4% of GDP by 2080, against values of -2.7% of GDP in 2040 and -4.3% of GDP in 2080 for the "high-cost" assumption set. But unless there are reasons to believe that the official projections are biased toward pessimism, uncertainty by itself should not be an excuse for doing nothing. While the problem could turn out to be much smaller than expected, it could also turn out to be much bigger. In fact, common sense suggests that uncertainty should be a reason for doing more, not less, in order to minimize the probability of a very undesirable outcome.

Exhibit 7: Social Security Projections Are Highly Uncertain



The Trustees' productivity assumptions do look a bit low, but they are not as central to Social Security's finances as widely believed.

What about the view that the Trustees' assumptions are systematically too pessimistic? It is true that their productivity numbers look a bit low. They assume that real GDP per hour worked in the overall economy will grow at a 1.6% annual rate in the next 75 years. This number corresponds to a growth rate of output per hour in the nonfarm business sector—a more common definition of US productivity—of about 2%. This is slightly below the 2.2% average seen in the past 75 years. Both the CBO and the Social Security Advisory Board's 2003 Technical Panel on Assumptions and Methods have recommended a productivity assumption closer to the 75-year average.

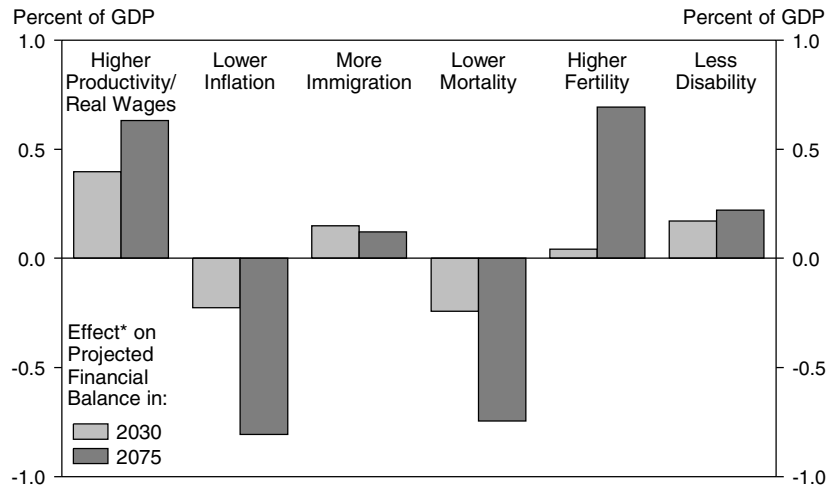
But the productivity assumption isn't as central to Social Security's finances as widely believed. To a first approximation, higher productivity boosts both revenues and outlays by similar amounts because starting benefits are indexed to average wages. There is a positive second-order effect because the benefits of existing recipients are indexed to prices, not wages. But, nevertheless, productivity is just one factor among several others. Exhibit 8 shows the results of a 2001 CBO study which investigated the partial impact of varying each of the six most important economic and demographic assumptions on the system's projected financial balance in 2030 and 2075. The chart shows that productivity growth is important, but it is rivaled by inflation, mortality, and fertility trends in terms of their significance for the Social Security system's projected finances.

High productivity assumptions may be offset by excessively high inflation estimates.

The role of inflation is particularly interesting because the Trustees assume a long-run CPI inflation trend of 2.8%. This number is well above the Fed's implicit inflation target as well as most measures of expected long-term inflation among investors and economists. Because of a quirk in the way benefits are calculated, higher inflation is actually helpful for the Social Security system's finances. So it seems that much of the Trustees' overly cautious productivity assumption may be offset by an excessive inflation assumption.

Overall, we see little evidence that the net effect of the economic and demographic assumptions skews the Trustees' projections in an overly pessimistic direction. The 2003 Technical Panel took the same view. They suggested a number of improvements to individual assumptions, including a

Exhibit 8: Productivity Isn't All that Matters



* Impact of replacing "intermediate" with "low cost" or "high cost" assumption, holding all other assumptions at "intermediate" values. Source: Congressional Budget Office. Social Security Trustees. Our calculations.

higher productivity growth rate, a lower inflation assumption, and a faster rate of mortality decline, but ultimately concluded that the Trustees' assumptions were reasonable when considered together.

The more severe the overall budget imbalance, the greater is the importance of tackling each of its components.

The third and final argument against Social Security reform is that other fiscal issues are far more pressing. First, Medicare is projected to be a much bigger ultimate burden than Social Security, for reasons discussed in the first section. Second, according to CBO calculations, the cumulative effect of the tax cuts of the past four years has been to worsen the standardized federal budget balance by 2¾% of GDP—a number that equals the projected deterioration in the Social Security budget over the next seven decades!

We certainly agree that Social Security is just one facet of a much larger US fiscal problem. But from an economic perspective this does not make the Social Security imbalance any easier to absorb. In fact, the more severe the overall imbalance, the greater is the importance of tackling each of its components. Conversely, an improvement in other parts of the unified budget would make the need for Social Security reform less pressing. Hence, the next section considers not just "narrow" Social Security remedies such as lower benefits and a higher retirement age, but also "broader" approaches such as lower discretionary spending and higher income taxes.

III. Options for Closing the Financial Imbalance

There are only three ways to address the Social Security imbalance. First, one could make the system less generous in the future by raising payroll taxes or cutting benefits. Second, one could divert resources from other parts of the unified budget to close the gap. Third, one could try to increase the size of the economic pie and earmark part of the increase for Social Security.

Changing the Parameters of Social Security

The first line of attack aims at either raising Social Security revenue or cutting Social Security outlays, i.e., to make the system as a whole less generous. The options include the following:

A switch to price indexing would clearly improve the system's financial balance on a massive scale, but it would do so by essentially phasing out Social Security over time.

1. Raise payroll taxes. Currently, OASDI taxes are levied at a rate of 12.4%, with 6.2% each coming from the employer and the employee, up to \$90,000 of annual income. The most obvious way of raising more revenue would be to increase the payroll tax rate, which would lead to a near-proportional increase in revenue.

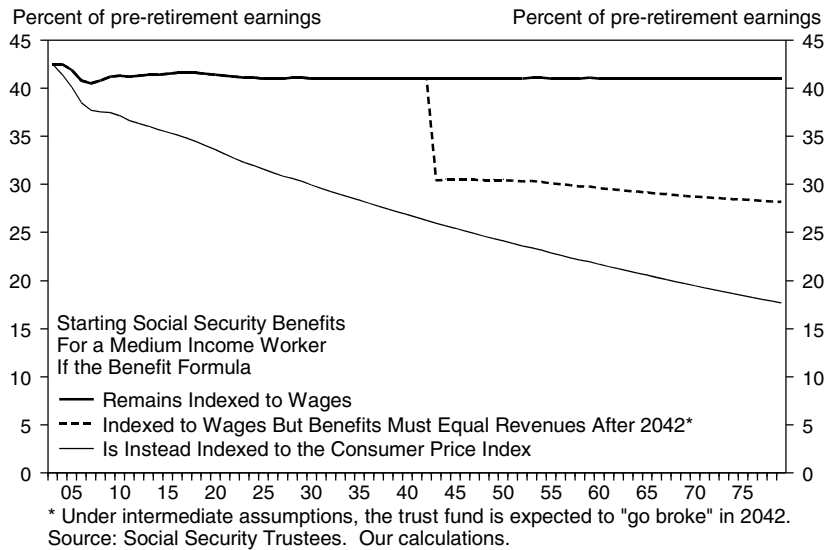
2. Raise the earnings limit above \$90,000. This would boost not only revenue but also outlays, because it would imply an increase in benefits for higher-income households. However, the current benefit formula is quite strongly progressive, so that an increase in the earnings limit would still improve the system's financial condition.

3. Index benefits to prices. Currently, a retiree's starting level of benefits is indexed to the level of nominal wages in the economy. Therefore, the system features a "replacement ratio"—the average level of starting benefits as a proportion of average wages—that is roughly constant over time. For a hypothetical "medium income earner," the replacement ratio in 2004 is estimated at just over 40% and is projected to stay near this level in coming decades. If one decided to index the starting level of benefits to prices instead of wages, the replacement ratio would fall sharply over time. Exhibit 9 shows that, given the Trustees' intermediate assumptions about wages and prices, an immediate switch to price indexing would push the replacement rate below 20% by 2080, with no end to the downtrend in subsequent decades. In fact, benefits would fall below the levels that are currently projected to be "affordable"—i.e., that could be paid with projected payroll tax revenue—after the exhaustion of the trust fund in 2042. So a switch to price indexing would massively improve the system's financial balance, but it would do so by essentially phasing out Social Security over time.

One relatively straightforward way of dampening the growth in outlays would be to index the retirement age to further increases in life expectancy after 2025.

4. Index the retirement age to life expectancy. The "normal retirement age"—the age at which a participant can draw full Social Security benefits without incurring a penalty—is currently scheduled to rise gradually from 65.6 years in 2005 to 67 years in 2025. Thereafter, it is scheduled to stay at 67 years indefinitely. One relatively straightforward way of dampening the growth in outlays would be to index the retirement age to further increases in life expectancy after 2025. Since rising longevity lies at the heart of the Social Security system's financial imbalance and an increasing proportion of over-65 individuals are in excellent health, a gradual increase in the normal retirement age and an increase in labor force participation in the over-65 population is an obvious way of defusing the Social Security problem. Such a change could be implemented without foreclosing the option for early retirement. As the "normal retirement age" moved up, the proportion of benefits paid at any given "early" retirement age would be reduced to keep

Exhibit 9: Price Indexing Would Result in Sharp Benefit Cuts



The argument against means-testing has always been that it makes Social Security look more like “welfare” and may therefore undercut the popular support for the program.

the system actuarially fair. (An actuarially fair system keeps the present value of expected benefits equal regardless of the age at retirement.)

5. Means-test benefits. In general, Social Security benefits are currently provided on a universal basis, regardless of a retiree’s income or wealth. However, there is one important exception. Higher-income individuals who retire before the normal retirement age pay a progressive tax on their benefit income according to a complicated set of rules. One obvious way of reducing the Social Security deficit would be to generalize this means-testing. The argument against means-testing has always been that it makes Social Security look more like “welfare” and may therefore undercut the popular support for the program. However, one could also argue that means-testing would strengthen the system’s “insurance” character—one buys insurance while one works and gets a payout in retirement if one really needs it.

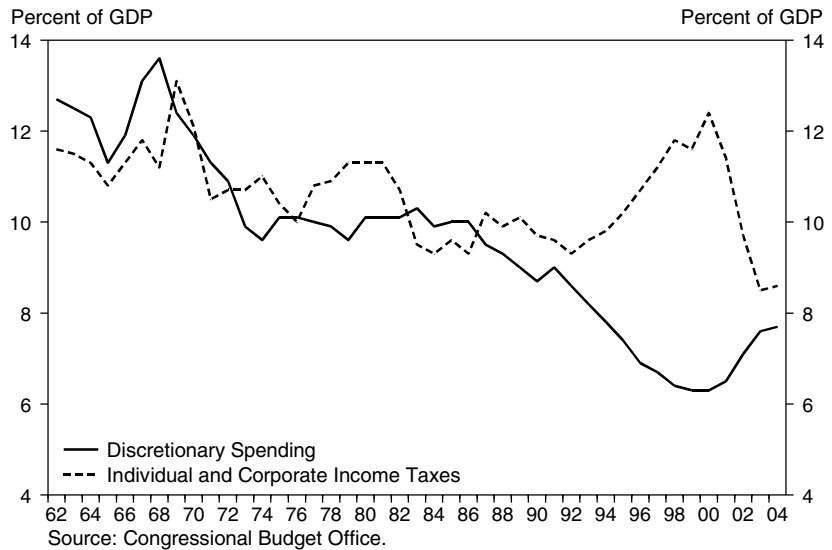
Drawing on Other Government Resources

The second line of attack is a diversion of resources from other parts of the budget either contemporaneously or across time, via borrowing.

But one could also argue that means-testing would strengthen the system’s “insurance” character—one buys insurance while one works and gets a payout in retirement if one really needs it.

1. A cut in federal discretionary spending. The government could cut discretionary spending to make room for higher entitlement outlays. In practice, however, it may be difficult to find much room for such cuts given the likely spending needs on defense and homeland security as well as the relatively low level of spending in relation to GDP. As shown in Exhibit 10, discretionary spending in fiscal 2004 ran at an estimated 7.7% of GDP. While this is up from the all-time low of 6.2% in 1999, it remains significantly below the long-term average.

2. A hike in personal or corporate income taxes. Alternatively, the government could boost personal and/or corporate income tax receipts through a broadening of the tax base and/or an increase in tax rates. Ultimately, this may prove more realistic than a significant cut in spending given that the income tax take is currently at historically low levels of less than 9% of GDP. The counterargument is that while politicians find it easy to call for spending restraint, at least in general terms, advocating tax hikes is a lot more politically challenging.

Exhibit 10: Spending Already Below Long-Term Average

In principle, the Social Security shortfall could be covered by borrowing. This would represent a shift of resources from future generations to the present.

3. Borrowing. In principle, the Social Security shortfall could be covered by borrowing. In essence, this would represent a shift of resources from future generations to the present. That is because the increased borrowing would reduce national saving, and thus lead to slower economic growth and a smaller economic pie (relative to the alternative of finding the resources contemporaneously). The main argument in favor of this approach is that since future generations are likely to be richer than the current generation, it makes sense for them to bear some share of the burden in financing the unfunded liabilities of Social Security. However, since this approach leads to slower growth and a smaller pie, it means that the Social Security problem would grow even larger over time.

Increasing the Size of the Economic Pie

The third line of attack includes measures aimed at raising national income. In this case, current payroll tax rates might prove sufficient to pay the currently scheduled level of benefits indefinitely without a significant deficit in the Social Security budget. Several options have been proposed:

An increase in the normal retirement age that persuaded more people to work beyond 65 would pay a double dividend because it would not only lower outlays but also increase taxable payroll.

1. More immigration. Admitting more working-age immigrants would help the system by slowing down the aging process, but this is not a very powerful option. Looking back at Exhibit 8, this shows that boosting immigration to the Trustees' "low cost" assumption of 1.2 million per year—relative to the 2003 estimate of 962,500 and an "intermediate" assumption of 900,000—would only improve the 2075 financial balance by about 0.2% of GDP.

2. A higher normal retirement age. From Social Security's vantage point, an increase in the normal retirement age—the age at which workers can draw full benefits—that persuaded more people to work beyond 65 would pay a double dividend because it would not only lower outlays but also increase both national income and taxable payroll. This enhances the attractiveness of indexing the normal retirement age to life expectancy even further.

3. A true "trust fund." We argued in the previous section that the trust fund is a fiction. The reason why it is a meaningless fiction, and not a useful fiction, is that while the budget agencies report the financial balance of the Social Security system and the status of the trust fund, the politicians think

and act only in terms of the unified federal budget. As a result, a surplus in the Social Security part of the budget simply gives Congress and the president more leeway to boost spending or cut taxes and thereby undo the positive effect on national saving. However, at least in theory, one might be able to turn it into a useful fiction by erecting a clear barrier between the Social Security budget and the non-Social Security budget. For example, if the politicians were required to discuss budget issues only in terms of the federal budget excluding Social Security, Social Security surpluses might actually end up boosting national saving. In fact, there was a short period at the end of the 1990s when the Clinton administration dissuaded Congress from cutting taxes in response to the emergence of unified federal surpluses until the non-Social Security budget was balanced as well. During this period, most budget discussions were conducted in terms of the non-Social Security balance, and the existence of the Social Security surpluses did seem to be translating into higher national saving.² If the government managed to translate Social Security surpluses prior to the demographic transition into higher national saving, the result would be a larger capital stock and a higher level of GDP. In this case, society would be able to sustain a higher level of Social Security benefits for any given payroll tax rate.

From an economic perspective, there is no “correct” answer in how to address the long-term actuarial imbalance of the Social Security system.

From an economic perspective, there is no “correct” answer in how to address the long-term actuarial imbalance of the Social Security system. It depends on the preferences for consumption today versus tomorrow, and the priority placed on higher incomes for seniors versus higher taxes for workers or lower discretionary spending.

Nevertheless, there is one pertinent issue of fairness that revolves around the “trust fund” notion. Since the increase in payroll tax rates in the wake of the 1983 Greenspan Commission report, the Social Security system has been running significant financial surpluses. The idea was that this would allow the trust fund to accumulate assets that could then be run down as the baby boomers reached retirement age after about 2015. Payroll taxes are disproportionately paid by lower income earners, while income taxes—the other main source of federal revenue—are disproportionately paid by higher income earners. So from an income distribution perspective, the implication of the post-Greenspan Commission plan was that higher income earners would “borrow” from lower income earners until the demographic transition and would repay the borrowed funds thereafter. If the projected Social Security deficit is now eliminated by raising payroll taxes and/or cutting benefits, one could reasonably argue that this is tantamount to releasing higher income earners from their original agreement.

Even if one gives credit to lower income taxpayers that helped fund the current trust fund surplus, there still is much to do to restore Social Security to long-term solvency.

As it turns out, the credit that should accrue to past taxpayers who paid payroll taxes above and beyond what was needed to fund Social Security on a pay-as-you-go basis is quite modest relative to the actuarial imbalance of Social Security. The easiest way to see this is to compare the current value of the accrued Social Security trust fund balances of \$1.7 trillion to the present value of the infinite horizon imbalance of Social Security—estimated at \$10.4 trillion. Thus, even if one gives credit to lower income taxpayers who helped fund the current trust fund surplus, there still is much to do to restore Social Security to long-term solvency.

² See also Sita Nataraj and John Shoven, “Has the Unified Budget Undermined the Federal Government Trust Funds?” NBER Working Paper 10953, December 2004. The authors argue that a similar effect was evident before the adoption of the unified budget in 1970.

IV. Does Privatization Solve the Problem?

We define privatization as the partial or full replacement of the current pay-as-you-go system with voluntary or mandatory personal accounts. These can be invested in a range of government or private securities, including equities. During the transition from the pay-as-you-go system to the funded system, the Treasury issues additional debt to pay the benefits of existing retirees. Following the transition, the next generation of workers (today's children) saves for retirement in personal accounts, the next generation of retirees (today's workers) consumes their accumulated personal account balances, and the Treasury services a larger stock of national debt.

The usual argument in favor of privatization is that private capital markets offer higher returns than the existing Social Security system.

The usual argument in favor of privatization goes roughly as follows. Historically, a portfolio of 50% corporate equities, 30% corporate bonds, and 20% government bonds has produced real returns of about 5% per year. In contrast, studies have shown that the current cohort of young workers is likely to get a real return of only about 1% per year from Social Security.³ Thus, a switch to a system of personal accounts that are invested in such a diversified portfolio would seem to hold great promise. From an individual perspective, it would sharply boost expected returns. From a macro perspective, it would help make the system solvent over the long haul because it would reduce the contributions required to enjoy adequate living standards in retirement. As a society, we would no longer have to make any of the hard choices discussed in the previous section.

Unfortunately, this story is too good to be true. This shouldn't really come as a surprise. After all, the current pay-as-you-go scheme simply transfers money around from current workers to current retirees at low administrative expense. So it would be remarkable if one could so easily make everyone better off by scrapping the current system in favor of personal accounts.

From a macro perspective, it is unlikely that privatization would increase national income.

The key point is that privatization is not a free lunch in either macroeconomic or individual terms. From a macro perspective, privatization could only increase national income if it raised national saving, which would boost the size of the capital stock, or if it improved the allocation of capital, which would boost the productivity of the capital stock. But in practice, higher national saving is unlikely because the Treasury would have to issue one dollar of additional debt for each dollar that is diverted from payroll taxes into personal accounts. Moreover, an improved allocation of capital is also unlikely because there is little reason to expect the new investors to make systematically better investment decisions than the existing investors.

If national income really is unchanged, then privatization only rearranges the deck chairs. That is, it merely reallocates risk and expected returns between different parts of the population. The demand for equities increases because a substantial portion of the personal accounts is likely to be invested in them. This implies that some of the previous equity investors sell their stocks to personal accountholders and invest in bonds or cash instead.⁴ Thus, if

³ This estimate is taken from Steven Caldwell, Melissa Favreault, Alla Gantman, Jagadeesh Gokhale, Thomas Johnson, and Laurence J. Kotlikoff, "Social Security's Treatment of Postwar Americans," NBER Working Paper 6603. Other studies find somewhat higher returns, but most estimates are below 2%.

⁴ This is only strictly true if the supply of equities is fixed. If companies respond to the demand increase by issuing more equity and less debt, the analysis becomes slightly more complicated, but nothing of substance changes.

personal accountholders enjoy higher returns, this is likely to be matched by lower returns among other investors.

What about the individual perspective of the new personal accountholders? Even here, the comparison between the historical returns on equities and bonds and the low “rate of return” on Social Security contributions is misleading. Much of the difference is simply a compensation for increased risk. Financial Economics 101 teaches that the risk-adjusted returns of different financial assets should be equal. Otherwise, there is an arbitrage opportunity that will entice savvy investors to buy the asset with the higher risk-adjusted return and sell the asset with the lower risk-adjusted return, thus eliminating the gap.

A dollar of equities and a dollar of government bonds are both worth one dollar, despite the fact that equities promise a higher expected return.

For an investor with an average appetite for risk, this implies that the advantage from the higher expected returns offered by risky assets is exactly offset by the disadvantage of higher risk. Put differently, from the perspective of the average investor, a dollar of equities and a dollar of government bonds are both worth one dollar, despite the fact that equities promise a higher expected return. So the higher expected returns that are available from investing in risky assets will not necessarily make personal accountholders better off.

The real question, therefore, is not whether riskier assets offer higher returns than Social Security, but whether it is desirable for low- and middle-income workers to share in the risk and returns of equity ownership to a greater degree. To put it more pointedly: Are we comfortable with a system that redistributes resources toward lower-income households if the markets and the economy do reasonably well in coming decades, but redistributes resources away from lower-income households if the markets and the economy do very poorly? The answer to this question is not clear-cut, and reasonable people could disagree.

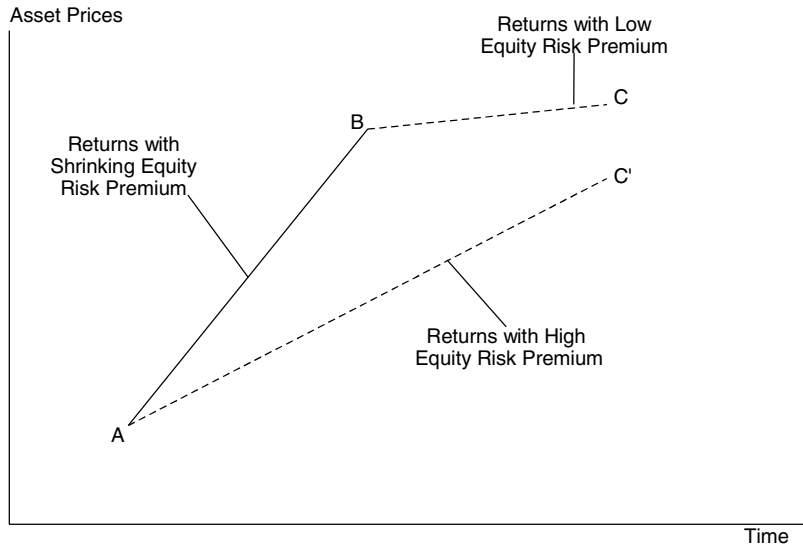
Moreover, even abstracting from the issue of risk, the historical returns on bonds and equities substantially overstate what investors could expect on a forward-looking basis. This is because the rise in bond and equity prices in recent decades has boosted historical returns, but it has also resulted in high bond and equity valuations that imply lower prospective returns in the future. The best proxy for real long-term bond returns is the yield available on long-dated Treasury Inflation-Protected Securities (TIPS). It currently stands at about 2%, a full percentage point below the historical average. Calculating expected long-term equity returns is harder, but our economics-based equity risk premium model currently implies a real return of about 5%. We estimate that this implies long-term expected returns on a 50%/30%/20% portfolio of only about 3.7% (before investment costs).

The historical returns on bonds and equities overstate what investors could expect on a forward-looking basis.

Why is the expected rate of return for equities so low relative to historical returns? In evaluating the high rate of return on equities historically, it is important to distinguish between returns generated by rising dividends and earnings versus the returns generated by higher valuations (i.e., a rise in price/earnings multiples). A good portion of the high rate of return earned by equities over the past century has been due to a rise in equity market valuation. When equity valuations are rising, equity returns are unusually high. However, the increase in equity valuation reduces, rather than raises, the prospective equity return by reducing the dividend return on equities. Exhibit 11 illustrates this point. A shrinkage in the equity risk premium leads to a sharp rise in equity valuation. This is accompanied by a sharp rise in

Exhibit 11: Falling Equity Risk Premium Has Boosted Returns

A good portion of the high rate of return earned by equities over the past century has been due to a rise in equity market valuation.



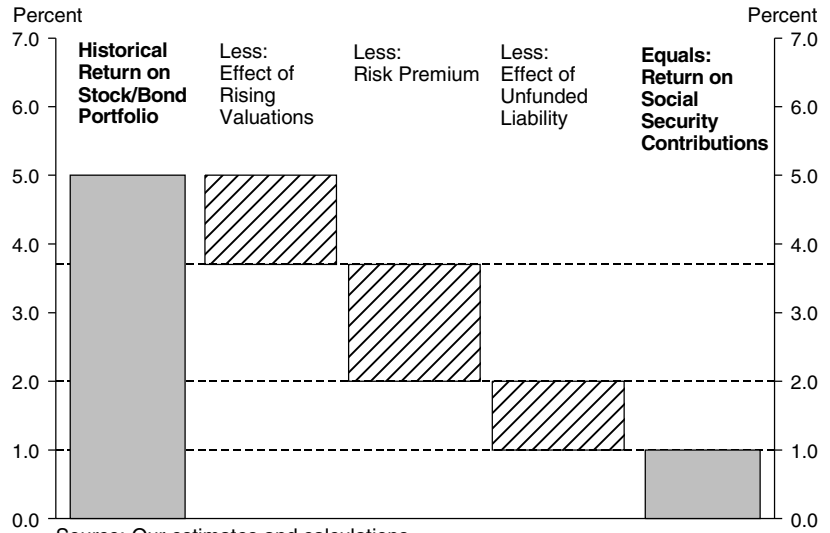
share prices and a high rate of return on equities (the trajectory from point A to point B). However, once this rerating of equities has occurred, the prospective equity return is lower rather than higher (the trajectory from point B to C). That is because the rise in valuation has shrunk the equity risk premium and thereby the expected return on equities. Thus, historical rates of return should be used very cautiously in estimating prospective rates of return. The proportion of the historical return due to changes in valuation should be ignored, unless there are strong reasons to anticipate further changes in valuation.

Part of the low “rate of return” offered by Social Security has nothing to do with investment returns, but instead reflects the unfunded liability that is inherent in any pay-as-you-go system.

Finally, part of the low “rate of return” offered by Social Security has nothing to do with investment returns, but simply reflects the unfunded liability that is inherent in any pay-as-you-go system. The first generation of Social Security recipients got a great deal because they received benefits that were extremely high relative to their payroll tax contributions. But the flip side of this great deal is that each subsequent generation suffers a below-market rate of return. Of course, one could switch to a system of personal accounts, finance the transition by borrowing, and thereby swap the unfunded liability for a larger stock of explicit Treasury debt. This would improve expected returns from the perspective of the individual worker. But it would also require higher taxes to service the now-larger stock of national debt. In other words, it would replace one drag on living standards (the unfunded liability) with another (the additional Treasury debt), leaving us neither better nor worse off once all the dust settles.

Exhibit 12 illustrates the above reasoning graphically. (The numbers are primarily for illustration and should not be taken to be precise estimates.) It starts from the historical real rate of return on a portfolio of 50% equities, 30% corporate bonds, and 20% Treasury bonds, which we estimate at roughly 5%. But we then make the three adjustments discussed above. First, we subtract the effect of the rise in equity and bond valuations on returns to get a more reasonable measure of expected real returns. This lowers returns to 3.7%. Second, we subtract the risk premium of such a portfolio compared with TIPS. This lowers returns to 2%. Third, we subtract the implicit cost of servicing the unfunded liability. This lowers returns to 1%, a number that corresponds to the estimated “rate of return” on Social Security for the

Exhibit 12: Why Simple Return Comparisons Are Misleading



current cohort of young workers. The upshot is that the difference between the historical rate of return on equities and bonds and the rate of return on Social Security contributions does not necessarily imply that individuals would be better off in a privatized system.

V. Reform Plan 2: Moving from the Abstract to the Specific

Most observers believe that Reform Plan 2, which was proposed by *The President's Commission to Strengthen Social Security* in 2001, will serve as the template for Social Security reform. Reform Plan 2 consists of five major elements:

- Workers who were less than 55 years old at the time the legislation was enacted could voluntarily redirect 4 percentage points of their payroll taxes up to \$1000 annually (indexed for inflation) into a personal saving account (PSA).
- The monies in these accounts would be invested in a number of index funds centrally, similar to how the Federal Thrift Saving Plan invests the defined contribution investments of federal government workers. Upon retirement, the funds in these accounts would generally be converted into an inflation-indexed monthly annuity payment.
- Traditional Social Security benefits would be cut at a rate equivalent to the worker's contributions into the PSA compounded at a real interest rate of 2% (this is referred to as the "clawback").
- Starting benefits under the traditional Social Security system would be indexed to prices beginning seven years after the reform plan was implemented (currently, benefits are related to wages).
- The Social Security system would become more progressive by establishing a minimum benefit for long-term low-wage workers at 120% of the poverty line, and benefits for widows would rise.

The plan would have four major consequences. First, the shift to prices from wages in the benefit calculation and the clawback provision would ultimately cut benefits sharply compared to present law (see Exhibit 13). For example, in 2075, the projected monthly benefit paid by Social Security to a one-earner couple of medium income would fall by more than 60% to \$1,156 (in 2001 dollars) compared to what is now promised. This cut would be partially offset by a monthly payment from annuitization of the balance in the PSA at the time of retirement. The size of this offset would depend on the performance of the assets in these accounts—the Social Security actuaries assume a real return of 4.6% per year. In that case, the PSAs would offset a bit more than one-half of the cut in benefits.

Most observers believe that Reform Plan 2, which was proposed by "The President's Commission to Strengthen Social Security" in 2001, will serve as the template for Social Security reform.

The shift to prices from wages in the benefit calculation and the clawback provision would ultimately cut benefits sharply compared to present law.

Exhibit 13: Projected Social Security Benefits Under Plan 2

One-Earner Couple, Medium Income			
Monthly benefit, 2001 dollars			
	2022	2042	2075
Reform Plan 2			
Base Soc Sec Benefit	\$1,695	\$1,626	\$1,628
- Benefit Offset ("Clawback")	- 117	- 315	- 472
Adj Soc Sec Benefit	1,578	1,311	1,156
+ Personal Svg Acct Annuity *	+ 164	+ 609	+ 1,167
= Total Projected Benefit	1,744	1,920	2,322
Present Law (PL) Benefit	1,881	2,189	3,009
Reform as % of PL Benefit	93 %	88 %	77 %

* Assumes real 4.6% annualized returns.

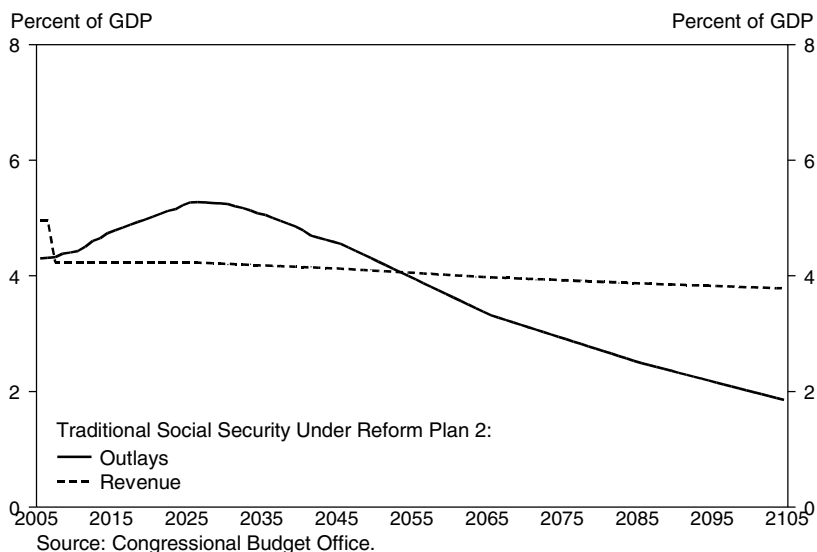
Source: Social Security Administration.

Second, the sharp cut in benefits restores Social Security to long-term solvency. At the end of the 75-year actuarial window used to assess Social Security, the system would be cash flow positive, *even if no one established PSAs*. This shows that it is the switch to price indexing from wage indexing that restores Social Security to solvency, not the implementation of a personal saving account system. In contrast, under the current system the Social Security Trustees estimate that payroll taxes in 2078 would only be sufficient to fund benefits at 68% of the level currently scheduled.

Reform Plan 2 cuts benefits by significantly more than what is needed to restore long-term solvency.

In fact, Reform Plan 2 cuts benefits by significantly more than what is needed to restore long-term solvency. Because benefit payments would be tied to prices, but revenues would be tied mainly to wages, which are expected to rise faster over time, the revenues received by Social Security under Reform Plan 2 would eventually dramatically dwarf benefit payments. As shown in Exhibit 14, revenues of Social Security as a share of GDP decline only very slowly as life expectancy continues to increase. Benefit payments made by the Social Security portion of the system would decline more rapidly as the real economy grew over time. According to the Congressional Budget Office, by 2105, revenues would be about double the level of outlays. As long as wages rise faster than prices, benefit payments would continue to shrink relative to real GDP. In other words, if benefits are indexed to prices, one might reasonably expect that Social Security benefit payments would eventually become so small as a share of the overall economy as to be largely irrelevant.

Exhibit 14: Reform Plan 2 Does More than Necessary



Treasury financing requirements would increase for several decades, as the diversion of about one-third of the Social Security payroll tax would cut government receipts significantly.

Third, Treasury financing requirements would increase for several decades. This occurs because the diversion of about one-third of the Social Security portion of the payroll tax into PSAs would cut government receipts significantly. The amount by which Treasury financing costs were increased depends upon the proportion of wage-earners that opted to establish PSAs. If all eligible wage-earners were to participate, the diversion of payroll taxes under the plan would be about \$100 billion per year initially. The expectation is that participation rates would be high because the PSAs are likely to earn returns higher than the 2% real rate of return assumption used in calculating the “clawback.” As long as real annualized returns exceed 2%, then workers could expect to receive higher benefits by establishing a personal saving account.

Fourth, the plan would cause a shift in relative asset prices. In particular, the supply of marketable Treasury debt would increase as the federal government would have to borrow to replace the payroll taxes that had been diverted into the PSAs. The demand for equities and corporate bonds would increase as the monies in the PSAs were invested.

No Free Lunch

One reason why personal saving accounts are favored by many is that smaller projected benefit cuts are needed to restore actuarial balance under such a system.

In evaluating Reform Model 2, it is important to recognize that Social Security could be placed on an actuarially sound footing in other ways. As discussed in Section III, payroll taxes could be increased; benefit payments cut; or retirement ages increased and indexed to longevity.

So why are PSAs favored by many? One reason is that smaller projected benefit cuts are needed to restore actuarial balance under such a system. Because PSAs would be invested in diversified portfolios of Treasuries, corporate bonds, and equities, expected returns would be higher than the credits posted to the accumulated Social Security trust fund balances. As a result, these higher expected returns can be used to offset a portion of the benefit cuts needed to push the Social Security system back to solvency. Thus, the PSAs allow the actuaries to project much smaller cuts in benefits.

Unfortunately, there are two problems with this analysis. First, the returns are higher precisely because the personal accounts are invested in a riskier set of assets. Second, the returns assumed by the Commission are too high.

Higher Expected Returns Mean More Risk

Retirement income under a personal account system would be much more volatile.

Retirement income under a personal account system would be much more volatile. Such a system would introduce two distinct sources of risk: (1) the rate of return on the assets over the working life, which would determine the account balance at retirement, and (2) the level of real interest rates at retirement, which would partly determine the real annuity rates used to convert a given account balance into an inflation-indexed income stream.

To see the impact of rate-of-return uncertainty, assume that the total return on equities is 3% per year in real terms—pulling the portfolio real return down to 2.7% after administrative costs. In this case, the total benefits for a medium-income, one-earner household in 2075 would fall to about 58% of present law benefits from 77% for a medium-income, one-earner household under the Commission's assumptions (see Exhibit 15).

While this comparison may seem extreme, the assumption that the gross real rate of return on equities is equal to that on bonds is actually the appropriate one on a risk-adjusted basis. The Social Security actuaries make this point in their evaluation of the "low yield" outcome, and this conclusion is supported by a recent Congressional Budget Office analysis of Reform Plan 2.⁵

To see the impact of real interest rate uncertainty, note that there is a positive relationship between real interest rates and annuity rates, because a given amount of assets is worth more in a higher interest rate environment. Roughly speaking, we estimate that a fall in the real interest rate by 1 percentage point relative to the Commission's 3% assumption might cut monthly annuity payments by as much as 10%.

⁵ See "Long-Term Analysis of Plan 2 of the President's Commission to Strengthen Social Security," p. 6, July 21, 2004 (updated September 30, 2004), Congressional Budget Office.

Exhibit 15: Sensitivity of Benefits to PSA Returns

2075, One-Earner Couple, Medium Income			
Monthly benefit, 2001 dollars			
	Risk Adjusted	Projected	High Yield
Real Return	2.7 %	4.6 %	4.9 %
Monthly Benefit for PSA	\$600	\$1,167	\$1,309
Total Benefit	\$1,755	\$2,322	\$2,465
% of PL Benefit	58 %	77 %	82 %

Source: Social Security Administration. Our calculations

Together, declines in equity prices and real bond yields could easily cut the monthly benefit payment by more than one-third.

In practice, all this could lead to very disparate benefit payment streams for account-holders with similar income characteristics, with the differences determined by the vagaries of the financial markets and the timing of retirement. For example, a 50% decline in stock prices—what occurred after the stock market bubble burst in 2000—would cut the amount of assets in the personal saving account by about 25% (assuming a 50/30/20 mix prior to the decline). Moreover, if that decline were accompanied by a fall in real interest rates (as occurred from 2000 to 2004), this would reduce the size of the inflation-adjusted annuity payment per dollar of account assets. Together, these two effects could easily cut the monthly benefit payment by more than one-third. Moreover, the lower benefit payment determined at retirement would persist throughout the remainder of the beneficiary’s life—even longer if a spouse were to collect survivorship benefits.

Return Assumptions Too High

The Commission assumed that personal accounts would earn real returns of 6.5% on equities, 3.5% on corporate bonds, and 3% on Treasury bonds. After deducting administrative fees estimated at 30 basis points per year, a blended 50/30/20 account was projected to generate returns of 4.6% per year. In addition, a 3% real Treasury yield assumption was used to project the annuity rates that determine the inflation-indexed annuity upon retirement.

Even ignoring the issue of risk, the Commission’s assumptions are too optimistic.

Even ignoring the issue of risk, these assumptions are too optimistic. First, real long-term yields have fallen over the past few years. The best proxy for real long-term yields are the yields available on long-dated Treasury Inflation-Protected Securities (TIPS). These yields currently are about 2% per year, a full percentage point below the real Treasury yield assumed by the Commission.

Second, the lower TIPS yield also implies a lower inflation-adjusted annuity benefit. So not only would the expected size of the PSAs be smaller than projected by the actuaries, but the inflation-indexed benefit stream generated by a given pool of savings at the retirement date would be reduced as well.

Third, equity valuations are well above the historical average. This implies that future returns, for any given economic performance, will be well below the historical average.

Fourth, there is a tension between the Commission’s optimistic return assumptions and its economic projections, which imply that economic performance will, in fact, be much worse than the historical average. The Social Security Trustees’ “intermediate” assumption—which underlies all of the Commission’s calculations—is that real GDP growth will slow to 1.8%, against a postwar average of 3.4%.

If growth really is that slow, it is very hard to see how the real rate of return on equities could be as high as 6.5%. For example, a simple dividend discount model implies that the real return to stocks is given by the dividend yield—currently 1.7%—plus the growth rate of real dividends, assuming valuations stay unchanged. If dividends per share grow at the same pace as GDP, this implies that real equity returns might be as low as 3.5%, barely half the Commission’s assumption.

Evaluating the Personal Saving Accounts of Reform Plan 2

If Social Security reform raises national saving, then this will boost growth and make it easier to support a higher dependency ratio.

The ability of the economy to accommodate a rising ratio of retirees to workers fundamentally depends on the size of the economy at the time. If Social Security reform raises national saving, then this will boost growth and make it easier to support a higher dependency ratio.

Unfortunately, Reform Plan 2 is not constructed in a way that acts to lift national saving quickly. That is because all of the transitional costs are funded by borrowing. The mechanism that lifts national saving—the reduction in benefits—only begins seven years after the plan is enacted and takes a long time to build up to a significant contribution to national saving.

The first-round impact on national saving is nil. The monies flowing into the PSAs are exactly offset by the increased federal government borrowing needed to replace the payroll taxes used to fund them. In fact, the initial impact on national saving might even be negative. After all, if households view the benefit implicit in their PSA as more secure than the unfunded promises of the current Social Security system, they might reduce the amount of their saving outside of the Social Security system.

While the first-round impact of Reform Plan 2 on national saving is nil, eventually saving would rise via the reduction in Social Security benefit payments.

Eventually, Reform Plan 2 would lift national saving. The mechanism, however, is not via the increased returns on investment, but instead occurs via the reduction in Social Security benefit payments. The reduction in Social Security benefit payments results in an improved government fiscal position. National saving rises as the federal government runs smaller budget deficits than it would otherwise. Of course, this result could also be accomplished without a personal saving account system. Benefit cuts would tend to raise national saving, both by reducing the federal fiscal imbalance and by encouraging households to save more due to the reduction in promised benefits.

It is important to recognize that the higher expected returns generated by personal saving accounts also do not raise national saving. The reason is that these higher returns are offset by the lower returns now earned by investors outside of the PSA system.

So are there other reasons to move to a Reform Plan 2 type of system?

There are three other arguments that have some merit. But, in our mind, these prospective benefits are either low or could be achieved under other reform configurations.

1. It is the only way to achieve a reduction in benefits. Benefit cuts are needed, but are not achievable politically without some “carrot.” In this case, the “carrot” is a personal saving account that is “owned” by each participant in the Social Security system.

2. Higher budget deficits would cause politicians to raise taxes and/or cut spending, and this would raise national saving.

Some low-income households, who currently do not have the wherewithal to invest in equities, would, via personal saving accounts, have a vehicle to earn the higher returns available in the equity market.

3. Reform Plan 2 would give households greater freedom to invest consistent with their tolerance for risk. Under the current Social Security system, returns are low for two reasons. First, the proceeds are only invested in government securities. Second, current and future generations have to cover the accrued liabilities of past generations that received benefits far greater than what was actuarially appropriate given their payroll taxes paid into the system. PSAs would allow risk-loving households to take more risk. Some low-income households, who currently do not have the wherewithal to invest in equities, would, via PSAs, have a vehicle to earn the higher returns available in the equity market.

None of these arguments, however, seems particularly compelling. If the goal is to achieve the political consensus to reduce Social Security benefits, why must this be accomplished by partially replacing Social Security with a personal saving account system? Couldn't benefit cuts necessary to restore the Social Security system to solvency be paired with other measures, such as a mandatory defined contribution system, to augment rather than replace Social Security?

Higher budget deficits might lead to greater fiscal stringency. But if this is the case, couldn't this be achieved just as easily by walling off the Social Security trust funds, that is, by only considering the on-budget balance in constructing fiscal policy?

With respect to the issue of greater freedom of investment, we would make two points. First, for wealthier households, there is plenty of opportunity to adjust risk now in a way to offset the low level of risk associated with Social Security investment. Second, for low-income households that do not have easy access to the equity market, one wonders how much investment risk is appropriate given their financial circumstances.

Modest Implications for Financial Markets

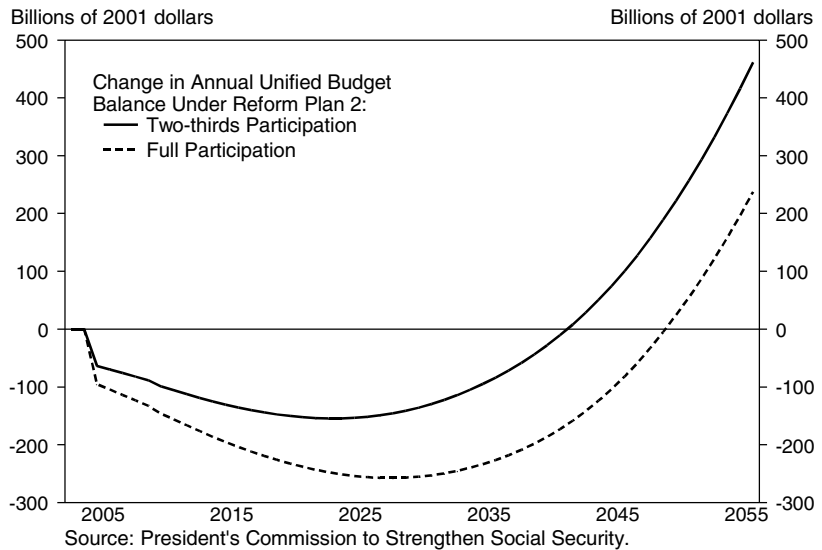
As noted earlier, Reform Plan 2 would drive up the federal budget deficit for several decades (see Exhibit 16—note that the 2001 Commission assumed that reform would begin in 2004). That is because it takes a long time for the benefit cuts and the growth of the private saving accounts to generate sufficient revenue to offset the diversion of payroll taxes used to fund the PSAs and the higher interest expense associated with bigger deficits. The additional supply would likely put upward pressure on Treasury bond yields and downward pressure on bond prices.

Conversely, the personal account inflows would boost the net demand for equities and corporate bonds, which would probably lift valuations to some extent. However, in the case of the corporate bonds, this effect might be dampened or even overwhelmed by the increase in Treasury yields, which presumably would put pressure on the valuations of highly-rated corporate bonds that are viewed by the market as close substitutes to Treasuries.

How important are all these valuation effects? The key point of controversy is the impact on the Treasury bond market. Proponents argue that market participants would not be bothered by the increase in the supply of Treasuries. After all, this would simply be a recognition of liabilities for

The additional supply would likely put upward pressure on Treasury bond yields and downward pressure on bond prices.

Exhibit 16: Plan 2 Would Boost Deficit for Several Decades



Proponents argue that market participants would not be bothered by the increase in the supply of Treasuries, as this would simply be a recognition of liabilities for Social Security that have already been incurred.

Social Security that have already been incurred. Moreover, the transition would not affect the aggregate supply and demand for funds. Treasury borrowing would increase, but this would be offset by the monies flowing into the PSAs.

Opponents argue that there would be a bigger impact. After all, the plan would substitute obligations of the federal government for the unfunded liabilities of Social Security. This would eliminate the options of eliminating those unfunded liabilities in other ways—for example, by tax increases or further benefit cuts—that would drive up national savings.

Treasury yields would probably rise, but the effect is likely to be relatively small because there is no first-round impact on national saving.

The truth probably lies somewhere in between. The additional Treasury borrowing would have some effect on market yields because the liabilities embodied in additional Treasury securities are surely more difficult to avoid than unfunded liabilities that could be addressed in other ways, such as tax increases or benefit cuts. However, the net effect on financial markets should be relatively modest because the first-round impact of the plan would not change the national saving rate. The increased borrowing of the federal government would be offset by the monies flowing into the PSAs. Moreover, since the plan would restore the long-term solvency of Social Security, that presumably would be viewed as a desirable development by bondholders.

Undoubtedly, relative prices would change somewhat—Treasury bond prices would fall as the supply of marketable Treasury debt increased and some of the monies in PSAs were invested in equities. But the effects of reform on relative prices should be modest. After all, if all eligible workers participated in the plan, the diversion of payroll taxes would total only about 1% of GDP. The literature on the relationship between budget deficits and interest rates suggests that the impact on yields of an increase in the budget deficit of 1% of GDP is about 20 to 25 basis points.⁶ However, the impact would probably be a bit smaller because the rise in the budget deficit would not represent an increased claim on national saving in this case and because some of the funds in the PSAs would be invested in Treasury securities.

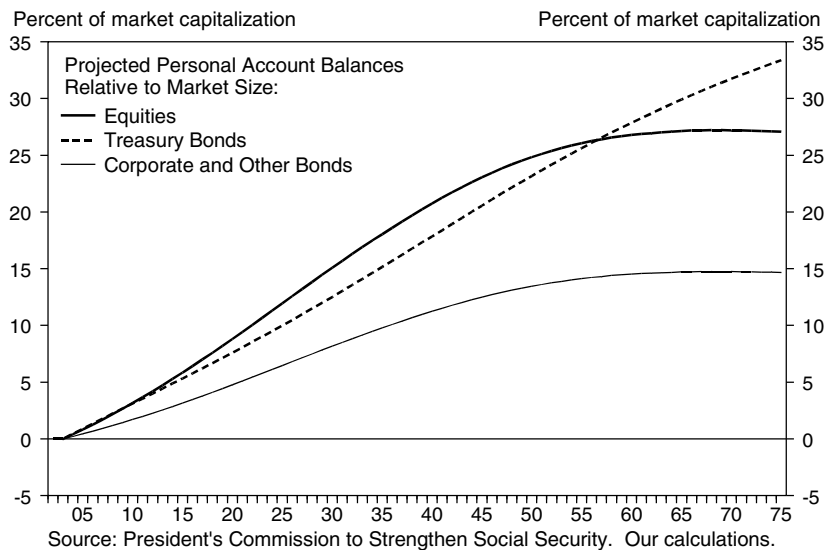
⁶ See “New Evidence on the Interest Rate Effects of Budget Deficits and Debt” by Thomas Laubach, Finance and Economics Discussion Paper 2003-12, Federal Reserve Board.

The impact on equity and corporate bond prices would likely be even smaller. With national saving unchanged, at least initially, there is no reason to expect a meaningful change in the total return on capital, measured as a weighted average of the returns on equities, Treasuries, and corporate bonds. So the boost to the Treasury bond yield should be offset by a decline in the average yield on equities and corporate bonds. Since the equity and corporate bond market together are about five times larger than the Treasury market, this decline should be substantially smaller than the rise in the Treasury yield.

While the effects on market prices are likely to be relatively small, personal accountholders could ultimately own substantial shares of the US equity and bond markets.

While the effects on market prices are likely to be relatively small, personal accountholders could ultimately own substantial shares of the US equity and bond markets. Using the Commission estimates and our assumptions about equity and bond market capitalization, we estimate that by 2075, personal accountholders might own between one-quarter and one-third of both the equity and the Treasury bond market and about one-seventh of the corporate bond market (see Exhibit 17).⁷

Exhibit 17: Personal Accounts Take a Long Time to Ramp Up



It would take several decades to build up personal account balances.

However, it is important to keep in mind that it would take several decades for these account balances to build up. During that time, the inflows average about 1/2% of total market capitalization per year in the case of equities and Treasuries and somewhat less in the case of corporate bonds. These modest flows are also consistent with the idea that the impact of Reform Plan 2 on the market prices of bonds and equities would be relatively small.

⁷ We emphasize that these projections are highly uncertain. In particular, we assume that total equity and corporate bond market capitalization grows with nominal GDP, while the Treasury market grows with nominal GDP plus the added debt from the transition financing shown in Exhibit 16. We also assume that “corporate” bond inflows could be invested in all bonds by private issuers, including mortgage, agency, and asset-backed securities.

VI. Conclusions and Recommendations

We favor reform of Social Security. That is because rising life expectancies make the current system unsustainable. We disagree with those who argue that the current system is not in trouble because the Social Security trust fund is not projected to run out of monies until 2042. Although the situation is not a “crisis,” a system that is projected to go broke needs to be fixed. If one makes the adjustments earlier, the changes do not need to be as large. Moreover, by starting early, the adjustments can be phased in so that one can avoid creating hardships for those close to retirement.

In evaluating reform, we would seek to accomplish the following three objectives:

1. Put Social Security on a secure financing path, not just for the next 75 years, but over the longer run.

2. Undertake reform in a way that lifts national saving. At the end of the day, the ability to support an increasing proportion of retirees depends on the ability to increase the size of the economy. One way to increase the economy’s size is to increase saving. This would allow greater capital deepening, which would boost productivity growth, thereby raising the economy’s long-term growth rate.

3. Maintain a system in which a portion of retirement income is insulated from market risk. The exposure of retirement income streams to market risk is already increasing sharply with the transition from defined benefit pension plans to defined contribution plans.

What are the broad parameters of reform that would satisfy these requirements?

1. Index the normal retirement age to longevity. In this way, the system would automatically respond to increases in life expectancies. People could still retire early. But the level of benefits paid upon early retirement would be adjusted as the full retirement age changed so as to remain actuarially “fair.”

2. Adjust benefits downwards (after taking the adjustment of the normal retirement age into consideration) as necessary to restore long-term solvency. Reduce the benefits for high-income households disproportionately. The purpose would be to shift the Social Security system back to its original “insurance” function and to focus the system on the goal of reducing the incidence of poverty among seniors.

3. Institute a compulsory personal saving account system that augments rather than substitutes for the amended system. Such a system would be funded by mandatory saving from payrolls. This would not be a “tax” as the monies would be wholly “owned” by the participant. This would avoid the complexities associated with the “clawback” formula contained in Reform Plan 2 and make the source of retirement benefits transparent. It also would act to raise national saving.

4. Invest the monies generated by the PSA system through a mechanism akin to the Federal Thrift Saving Plan. The choice of options would be limited and administrative expenses would be kept as low as possible.

5. Eliminate the unified budget accounting framework. The current system of a unified budget that includes Social Security encourages legislators to use the Social Security surplus to fund the rest of the government. This leads to higher budget deficits and lower national saving. A better approach would be to wall off Social Security receipts and outlays from the rest of the budget. In this way, Social Security surpluses would add to national saving.

6. Or alternatively, combine and simplify the payroll tax and personal income tax systems, eliminating the notion of Social Security trust funds altogether. If the Social Security system is not walled off from the rest of the government, then the distinction between the revenue streams generated by payroll taxes versus income taxes is unwarranted because they both go toward funding the general operations of the federal government. If one were to eliminate the earmarking of payroll taxes for Social Security, this would make it clear that Social Security is financed on a “pay-as-you-go” basis and would eliminate many fictions, including the notion that there are trust funds that can be drawn down in order to pay benefits. It also would open a broader set of possibilities for tax reform. After all, the payroll tax currently raises nearly as much revenue as the personal income tax and for many households is their largest tax payment.

William C. Dudley
January 18, 2005

Jan Hatzius

Edward F. McKelvey

Recent Global Economics

Paper No.	Title	Date	
119	Can the G7 Afford the BRICs Dreams to Come True?	30-Nov-04	Jim O'Neill
118	The BRICs and Global Markets: Crude, Cars and Capital	14-Oct-04	Dominic Wilson Roopa Purushothaman Themistoklis Fiotakis
117	US Consumers: Living Beyond Their Means	01-Oct-04	Jan Hatzius
116	Bush vs. Kerry: Budget Deterioration Limits the Scope for New Policy Initiatives	17-Sep-04	William Dudley Ed McKelvey Alec Phillips Chuck Berwick
115	Making the Most of Global Migration	09-Aug-04	Sandra Lawson Roopa Purushothaman Sabine Schels
114	House Prices: A Threat to Global Recovery or Part of the Necessary Rebalancing?	15-Jul-04	Michael Buchanan Themistoklis Fiotakis
113	South Africa: Capital Controls Constraining Growth	15-Jul-04	Jim O'Neill Rumi Masih Carlos Teixeira
112	The G8: Time for a Change	03-Jun-04	Jim O'Neill Robert Hormats
111	Introducing the Goldman Sachs China Financial Conditions Index (GS China-FCI)	19-May-04	Sun Bae Kim Hong Liang
110	Central European Fixed Income: <i>New High Yield Opportunities within the EU</i>	12-May-04	Jens J. Nordvig
109	India: Realizing BRICs Potential	14-Apr-04	Roopa Purushothaman
108	The Choice of Central Bank Policy Regimes: Markets Have a View	07-Apr-04	Jim O'Neill Andy Bevan
107	Sweden's Long Term Growth Prospects —the Good and Bad News	02-Apr-04	Binit Patel
106	The US Budget Outlook: <i>A Surplus of Deficits</i>	31-Mar-04	William C. Dudley Edward F. McKelvey
105	Corporate Defined Benefit Plans: <i>The Potential Consequences of Current Reform Initiatives</i>	15-Mar-04	William C. Dudley Michael A. Moran, CFA
104	US Balance of Payments. Unsustainable, But . . .	03-Mar-04	Jim O'Neill Jan Hatzius
103	No Gain Without Pain - Germany's Adjustment to a Higher Cost of Capital	19-Feb 04	Ben Broadbent Dirk Schumacher Sabine Schels
102	Euroland's Secret Success Story	16-Jan-04	Kevin Daly
101	Transatlantic Merger Policy Put to the Test	07-Nov-03	David R. Walton
100	2004 Election Preview: It's a Horse Race	13-Oct-03	William C. Dudley Joan Woodward Alec Phillips
99	Dreaming With BRICs: The Path to 2050	01-Oct-03	Dominic Wilson Roopa Purushothaman
98	The Private Sector Deficit Meets the GSFCI: <i>A Financial Balances Model of the US Economy</i>	18-Sep-03	Jan Hatzius
97	How China Can Help the World	17-Sep-03	Jim O'Neill Dominic Wilson
96	EU Enlargement: Growth Impetus or Governance Nightmare?	03-Sep-03	Erik F. Nielsen

Goldman Sachs Economic Research Group

+ Jim O'Neill, M.D. & Head of Global Economic Research

Americas

- * William Dudley, M.D. & Chief US Economist
- ^m Paulo Leme, M.D. & Director of Emerging Markets Economic Research
- * Jan Hatzius, M.D. & Senior US Economist
- * Edward McKevey, V.P. & Senior US Economist
- ** Alec Phillips, V.P., Washington Research
- * Alberto Ramos, V.P. & Senior Latin America Economist
- * Andrew Tilton, V.P. & US Economist
- ** Chuck Berwick, Associate Washington Research
- * Geoff Gottlieb, Associate Latin America Economist
- * Pablo Morra, Associate Global Markets/Latin America Economist
- * Avinash Kaza, Research Assistant, US
- * Malachy Meechan, Research Assistant, Global Markets/Latin America
- * Peter Stoute-King, Research Assistant, US

Global Macro Research

- * Dominic Wilson, M.D. & Co-Head of Global Macro Research
- + Michael Buchanan, E.D. & Co-Head of Global Macro Research
- * Sandra Lawson, V.P. & Senior Global Economist
- + Binit Patel, E.D. & Senior Global Economist
- * Monica Fuentes, Associate Global Economist
- * Roopa Purushothaman, Associate Global Economist
- + Sabine Schels, Research Assistant, Global Macro/Global Markets

Global Markets Research

- * Alberto Ades, M.D. & Director of Global Markets Research
- + Andrew Bevan, M.D. & Director of Global Markets Research
- + Francesco Garzarelli, E.D. & Senior Global Markets Economist
- + Kevin Edgeley, ED & Technical Analyst
- * Jens J Nordvig-Rasmussen, V.P. & Global Markets Economist
- + Thomas Stolper, E.D. & Global Markets Economist
- + Hina Choksy, Associate Econometrician
- + Fiona Lake, Associate Global Markets Economist
- * Themistoklis Fiotakis, Research Assistant, Global Markets/Global Macro

Europe

- + David Walton, M.D. & Chief European Economist
- + Erik F. Nielsen, M.D. European Economic Research
- + Ben Broadbent, E.D. & Senior European Economist
- ^ Rory MacFarquhar, E.D. & Economist
- + Javier Pérez de Azpillaga, E.D. & European Economist
- ++ Dirk Schumacher, E.D. & European Economist
- +++ Nicolas Sobczak, E.D. & Senior European Economist
- ~~ Carlos Teixeira, E.D. & Economist
- + Istvan Zsoldos, EMEA Economist
- + Inês Calado Lopes, Associate European Economist
- + Kevin Daly, Associate European Economist
- + Neena Sapra, Research Assistant, Europe
- + AnnMarie Terry, Research Assistant, Europe

Asia

- # Sun Bae Kim, M.D. & Codirector of Asia Economic Research
- ~ Tetsufumi Yamakawa, M.D. & Codirector of Asia Economic Research
- ## Adam Le Mesurier, V.P. & Senior Asia Pacific Economist
- # Hong Liang, V.P. & Asian Pacific Economist
- ~ Naoki Murakami, V.P. & Senior Japan Economist
- ~ Yuriko Tanaka, V.P. & Associate Japan Economist
- # Enoch Fung, Associate Asia Pacific Economist
- ~ Rie Kitagawa, Research Assistant, Japan
- # Yu Song, Research Assistant, Asia Pacific
- # Mark Tan, Research Assistant, Asia Pacific
- ~ Daisuke Yamazaki, Research Assistant, Japan

Admin

- + Linda Britten, E.D. & Global Economics Mgr, Support & Systems
- * Melisse Dornier, V.P. & US Economics Mgr, Admin & Support
- + Philippa Knight, E.D. & European Economics Mgr, Admin & Support
- + Linda Stock, Production Manager

Location

<ul style="list-style-type: none"> * in NY +1(212) 902 6807 ^m in Miami +1(305) 755-1000 ** in Washington +1(202) 637 3700 + in London +44 207 774 1160 ++ in Frankfurt +49 69 7532 1210 +++ in Paris +33 (1) 4212 1343 	<ul style="list-style-type: none"> # in Hong Kong +852 2978 1941 ## in Singapore +65 6889 2478 ~ in Tokyo +81(3) 6437 9960 ~~ in Johannesburg +27 11 303 2729 ^ in Moscow +7095 785 1818
---	---

Goldman Sachs Research personnel may be contacted by electronic mail through the Internet at firstname.lastname@gs.com

New York

Goldman, Sachs & Co.
One New York Plaza
New York, New York 10004, USA
Tel: +1(212) 902 8607

London

Goldman Sachs International
Peterborough Court
133 Fleet Street
London, EC4A 2BB, England
Tel: +44(0)20 7774 1000

Paris

Goldman Sachs Inc et Cie
2, rue de Thann
75017 Paris, France
Tel: +33(1) 4212 1341

Hong Kong

Goldman Sachs (Asia) L.L.C.
Cheung Kong Center,
68th Floor
2 Queen's Road Central
Hong Kong
Tel: +852 2978 0300

Frankfurt

Goldman Sachs & Co. oHG
MesseTurm
D-60308 Frankfurt am Main,
Germany
Tel: +49(69) 7532 1000

Tokyo

Goldman Sachs (Japan) Ltd.
Roppongi Hills Mori Tower
47th Floor, 10-1, Roppongi 6-chome
Minato-ku, Tokyo 106-6147, Japan
Tel: +81(3) 6437 9960

Singapore

Goldman Sachs (Singapore) Pte.
1 Raffles Pl, #07-01 South Lobby
Singapore 039393
Tel: +65 228 8128

Washington

Goldman, Sachs & Co.
101 Constitution Ave, NW
Suite 1000 East
Washington, DC 20001
Tel: +1 (202) 637 3700

Copyright 2005 The Goldman Sachs Group, Inc. All rights reserved.

This material should not be construed as an offer to sell or the solicitation of an offer to buy any security in any jurisdiction where such an offer or solicitation would be illegal. We are not soliciting any action based on this material. It is for the general information of clients of The Goldman Sachs Group, Inc. It does not constitute a personal recommendation or take into account the particular investment objectives, financial situations, or needs of individual clients. Before acting on any advice or recommendation in this material, clients should consider whether it is suitable for their particular circumstances and, if necessary, seek professional advice. The price and value of the investments referred to in this material and the income from them may go down as well as up, and investors may realize losses on any investments. Past performance is not a guide to future performance. Future returns are not guaranteed, and a loss of original capital may occur. The Goldman Sachs Group, Inc. does not provide tax advice to its clients, and all investors are strongly advised to consult with their tax advisers regarding any potential investment. Certain transactions—including those involving futures, options, and other derivatives as well as non-investment-grade securities—give rise to substantial risk and are not suitable for all investors. The material is based on information that we consider reliable, but we do not represent that it is accurate or complete, and it should not be relied on as such. Opinions expressed are our current opinions as of the date appearing on this material only.

We endeavour to update on a reasonable basis the information discussed in this material, but regulatory, compliance, or other reasons may prevent us from doing so. We and our affiliates, officers, directors, and employees, including persons involved in the preparation or issuance of this material, may from time to time have "long" or "short" positions in, act as principal in, and buy or sell the securities or derivatives (including options) thereof of companies mentioned herein. For purposes of calculating whether The Goldman Sachs Group, Inc. beneficially owns or controls, including having the right to vote for directors, 1% of more of a class of the common equity security of the subject issuer of a research report, The Goldman Sachs Group, Inc. includes all derivatives that, by their terms, give a right to acquire the common equity security within 60 days through the conversion or exercise of a warrant, option, or other right but does not aggregate accounts managed by Goldman Sachs Asset Management. No part of this material may be (i) copied, photocopied, or duplicated in any form by any means or (ii) redistributed without The Goldman Sachs Group, Inc.'s prior written consent.

This material is distributed in the United States by Goldman, Sachs & Co., in Hong Kong by Goldman Sachs (Asia) L.L.C., in Korea by Goldman Sachs (Asia) L.L.C., Seoul Branch, in Japan by Goldman Sachs (Japan) Ltd., in Australia by Goldman Sachs JBWere Pty Ltd. (ABN 21 006 797 897), in New Zealand by Goldman Sachs JBWere (NZ) Ltd., and in Singapore by Goldman Sachs (Singapore) Pte. This material has been issued by The Goldman Sachs Group, Inc. and/or one of its affiliates and has been approved for the purposes of section 21 of the Financial Services and Markets Act 2000 by Goldman Sachs International, which is regulated by the Financial Services Authority, in connection with its distribution in the United Kingdom, and by Goldman Sachs Canada, in connection with its distribution in Canada. Goldman Sachs International and its non-US affiliates may, to the extent permitted under applicable law, have acted on or used this research, to the extent that it relates to non-US issuers, prior to or immediately following its publication. Foreign-currency-denominated securities are subject to fluctuations in exchange rates that could have an adverse effect on the value or price of, or income derived from, the investment. In addition, investors in securities such as ADRs, the values of which are influenced by foreign currencies, effectively assume currency risk. In addition, options involve risk and are not suitable for all investors. Please ensure that you have read and understood the current options disclosure document before entering into any options transactions.

Further information on any of the securities mentioned in this material may be obtained on request, and for this purpose, persons in Italy should contact Goldman Sachs S.I.M. S.p.A. in Milan or its London branch office at 133 Fleet Street; persons in Hong Kong should contact Goldman Sachs (Asia) L.L.C. at 2 Queen's Road Central; persons in Australia should contact Goldman Sachs JBWere Pty Ltd. (ABN 21 006 797 897), and persons in New Zealand should contact Goldman Sachs JBWere (NZ) Ltd. Persons who would be categorized as private customers in the United Kingdom, as such term is defined in the rules of the Financial Services Authority, should read this material in conjunction with the last published reports on the companies mentioned herein and should refer to the risk warnings that have been sent to them by Goldman Sachs International. A copy of these risk warnings is available from the offices of Goldman Sachs International on request. A glossary of certain of the financial terms used in this material is also available on request. Derivatives research is not suitable for private customers. Unless governing law permits otherwise, you must contact a Goldman Sachs entity in your home jurisdiction if you want to use our services in effecting a transaction in the securities mentioned in this material.

Other disclosure information is available at <http://www.gs.com/research/hedge.html> or from Research Compliance, One New York Plaza, New York, NY 10004.