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**“THE PERIL OF ZERO DEBT” AND THE LONG-TERM BUDGETARY OUTLOOK:
SOME QUESTIONS REGARDING
CHAIRMAN GREENSPAN’S RECENT TESTIMONY**

by Peter R. Orszag

In testimony before the Senate Budget Committee on January 25, Federal Reserve Chairman Alan Greenspan noted that projected budget surpluses are sufficiently large that the readily available publicly held debt may be eliminated within the next ten years. At that point, when the readily available debt has been eliminated, continued surpluses would result in public investment in some sort of private assets. A budget surplus at that point would require the government to acquire private assets with its excess cash.

Chairman Greenspan argued that allowing the government to hold private assets would risk "sub-optimal performance by our capital markets, diminished economic efficiency, and lower overall standards of living than would be achieved otherwise."¹ This is the so-called "peril of zero debt."² To avoid that peril, Greenspan appeared to conclude that the nation must find some means of disposing of at least part of the projected surpluses, such as through tax cuts.

Dissipating the surpluses through tax cuts or spending increases, however, would result in lower national saving than if the surpluses were saved (since funds used for the tax cuts or spending increases would primarily result in increased consumption, while funds used to pay down debt primarily increase savings). Given the significant benefits of higher national saving in preparing for the retirement of the baby boomers, Chairman Greenspan’s argument about "the peril of zero debt" merits careful scrutiny. A critical question is whether the economic costs associated with public investment in private assets outweigh the costs of failing to undertake as much national saving. This paper finds:³

¹ Alan Greenspan, "Outlook for the federal budget and implications for fiscal policy," Testimony before the Committee on the Budget, U.S. Senate, January 25, 2001.

² The "peril of zero debt" phrase is taken from Alice M. Rivlin, "Why Fight the Surplus?" *New York Times*, January 30, 2001, page A23.

³ This paper is based in part upon Peter Orszag, "The Budget and Long-term Fiscal Policy," Testimony before the Committee on the Budget, U.S. Senate, February 7, 2001, available at <http://www.sbgp.com>.

- Higher national saving — achieved by preserving a substantial portion of the projected budget surpluses — offers the most effective fiscal policy response to the need to prepare for the increased long-term costs that will result from the aging of the population.
- Forgoing national saving to avoid any public investment in private assets would potentially entail significant costs in terms of future income. The estimates provided below suggest that saving the projected Social Security surplus, the projected Medicare surplus, and one-third of the projected on-budget surplus between 2002 and 2011 would increase the size of the economy (i.e., the Gross Domestic Product) by roughly \$70 billion (or about 0.5 percent) in 2012 relative to saving only the Social Security surplus over the coming decade. By the end of 2011, our nation’s capital stock (the resources that help us to produce income) would be \$800 billion higher than if we saved only the projected Social Security surpluses.⁴
- Even if the projected budget surpluses fully materialize, and the substantial majority of the surpluses were devoted to debt reduction or private asset accumulation, the size of projected public investment in private assets over the next ten years would be small in comparison to the investments already undertaken by state and local government pension funds in the United States and by foreign governments such as Denmark and Norway. State and local pension funds in the United States already own almost \$2 trillion in corporate equities and have invested these amounts; they have acquired these assets without any apparent damage to the economy. In addition, Denmark has successfully invested its public pension fund in private assets for decades.
- It is highly unlikely that limited investments in private assets by the Social Security trust fund would generate inefficiencies amounting to \$70 billion per year or more. Since saving a larger share of the projected surplus rather than using it for tax cuts would, as noted above, result in an economy approximately \$70 billion larger by 2012, the implication is that reducing national saving by using up too much of the surplus merely to avoid public investment in private assets is not likely to represent sound economic policy.

⁴ Relative to not saving *any* of the surpluses, the effects from saving the Social Security and Medicare surpluses plus one-third of the rest of the surplus are still larger: the Gross Domestic Product would be about \$200 billion higher and our nation’s capital stock more than \$2 trillion larger than if we failed to save any of the surpluses.

National Saving

The most recent projections from the Congressional Budget Office (CBO) suggest large budget surpluses over the next ten years. These surpluses, however, are expected to be temporary. The coming retirement of the baby boomers, ongoing reductions in mortality rates, and expensive — although socially beneficial — improvements in medical technology are expected to place increasing pressure on the federal budget over time.

In October 2000, for example, CBO projected that spending on Social Security, Medicare, and Medicaid would rise from 7.5 percent of GDP in 1999 to over 16.7 percent in 2040.⁵ Such a dramatic increase in outlays for these three programs represents a significant fiscal challenge.⁶ As the General Accounting Office recently noted, "Our long-term simulations, updated using CBO's new budgetary estimates, show that spending for federal health and retirement programs eventually overwhelms even today's projected surpluses....The aging of our nation, which will truly begin to affect the budget just after the 10-year budget window ends, is one key backdrop for the choices this Congress will make."⁷

The most effective immediate response to reducing the relative burden of our future budgetary obligations is to raise national saving. The fundamental benefit of higher national saving is that it will provide additional resources with which to pay retirement benefits and health care for future retirees. Higher national saving leads to higher investment, which means that future workers have more capital with which to work and are more productive as a result. The increased productivity — and the growth in national income it generates — ease the burden on future workers in making good on the retirement promises that we have made to current workers.⁸

National saving is the sum of public saving (achieved through budget surpluses) and private saving. If the government reduces debt or accumulates private assets, it boosts national saving by raising public saving. The more that it reduces debt or accumulates private assets —

⁵ Congressional Budget Office, "The Long-Term Budget Outlook," October 2000.

⁶ It is worth noting that the changes in CBO's medium-term forecast since last October do not significantly affect the basic conclusion that in the longer term, substantial budget challenges remain. See testimony of Barry Anderson, Deputy Director of CBO, before the Senate Budget Committee on January 31, 2001.

⁷ David M. Walker, "Long-Term Budget Issues: Moving from Balancing the Budget to Balancing Fiscal Risk," Testimony before the Senate Budget Committee, February 6, 2001.

⁸ Higher national saving today increases future gross domestic product if the increase in national saving is absorbed through higher domestic investment or through future receipts from abroad if the increase in national saving is absorbed through higher net lending to foreigners. Either way, the burden imposed on future domestic workers in providing a given level of retirement income and health care to today's current workers is reduced.

in other words, the larger the budget surplus — the more the government contributes to national saving.

In the United States, net national saving has risen substantially over the past seven years, from 3.4 percent of GDP in 1993 to 6.0 percent in 1999.⁹ The improvement in federal saving (that is, the improvement in the contribution of the federal budget to raising the level of national saving) more than explains the entire improvement in national saving rates since the early 1990's.¹⁰ In other words, the movement from deficit to surplus in the federal budget accounts for more than 100 percent of the recent improvement in our nation's saving rate. Private saving has fallen significantly since the early 1990's, but the improvement in public saving (achieved through the shift from federal budget deficits to budget surpluses) has more than offset the decline in private saving.

Further increases in national saving through running larger budget surpluses offers an important, although only a partial, remedy to the fiscal challenge of our aging population. Saving the projected surpluses would help to lessen the burden of our future fiscal problems. As the Congressional Budget Office noted in October, "Saving' most or all of the budget surpluses that CBO projects over the next 10 years - using them to pay down debt - would...substantially delay the emergence of a serious fiscal imbalance."¹¹

As a first step in evaluating the benefits of running larger surpluses rather than disposing of them through tax cuts or other means, the next section of this paper presents some simple calculations to clarify some of the tradeoffs involved in Chairman Greenspan's argument.

The Impact of Different Budget Strategies

Using the most recent CBO projections, this paper examines four alternative proposals: saving only the Social Security surplus, saving the Social Security surplus plus the surplus in the Hospital Insurance (HI) component of Medicare, saving the Social Security and Medicare HI surpluses plus one-third of the projected surplus outside Social Security and Medicare HI, and saving the entire projected surplus. These proposals were compared with saving none of the projected unified surpluses. The table in the appendix summarizes the results.

⁹ Net national saving is equal to total national saving minus depreciation. It measures the nation's net addition to our capital stock — that is, to the equipment and infrastructure with which we produce income.

¹⁰ Federal saving has moved from negative 4.1 percent of GDP in 1993 to positive 1.3 percent of GDP in 1999, a net shift of 5.4 percent of GDP. At the same time, private saving has fallen by 3.4 percent of GDP, and state and local government saving has risen by just 0.5 percent of GDP.

¹¹ Congressional Budget Office, "The Long-Term Budget Outlook," October 2000.

Saving the Social Security surplus, the HI surplus, and one-third of the projected surplus outside Social Security and Medicare HI between 2002 and 2011 would raise real GDP by almost \$200 billion in 2012 — or more than one percent — relative to not saving any of the surplus. The capital stock that Americans would have to draw upon in 2012 would be \$2.3 trillion larger in today's dollars than if we failed to save any of the projected surpluses. This additional capital is what expands the economy and raises GDP. The additional capital enables us to produce more: It raises the productivity of our workers by giving them more tools with which to work.

Relative to saving only the projected Social Security surpluses, saving the Social Security surplus plus the Medicare surplus plus one-third of the remaining surplus would raise real GDP by approximately \$70 billion in 2012. It would raise the capital stock available to America's workers by roughly \$800 billion in today's dollars relative to saving only the Social Security surpluses.

To the extent that limited public investments in private assets permit higher national saving than would be possible in their absence, since they allow policy-makers to continue running budget surpluses even after the public debt has been effectively eliminated, such investments can yield significant economic benefits. In other words, dissipating the surpluses in order to avoid any public investment in private assets would reduce national saving and therefore would also reduce the size of the economy in the future.

It is worth emphasizing that the estimates presented here are based on simple calculations, which are explained in more detail in the appendix. But more complex calculations seem unlikely to produce grossly different results. The calculations also do not include any direct effect on future GDP from reducing marginal tax rates or increasing spending (apart from the negative effect from lower saving). The appendix explains, however, that using the projected surplus to reduce marginal tax rates would likely produce less of an increase in future GDP than using the same resources to reduce debt or acquire private assets and thereby to boost national saving.

These simple calculations illustrate a real cost to forgoing national saving in order to avoid public investments in private assets. To argue that avoiding any public investment in private assets is more important than raising national saving, one must believe that the negative impact on the efficiency of our capital markets from such public investments would amount to inefficiencies in the hundreds of billions of dollars or more per year.¹² In other words, if we as a nation are concerned about future budgetary burdens but are prepared to give up the opportunity to raise national saving in order to avoid any public investment in private assets, we must believe

¹² A full social cost-benefit analysis would also take into account the cost of the consumption forgone to produce the higher national saving. In other words, a full social cost-benefit analysis would take into account, say, the benefits that people enjoy from a tax cut today, and not focus solely on future output. The focus of this analysis, however, is future output, as a proxy for the resources available to meet future obligations, rather than a full social cost-benefit analysis.

that the economic dangers associated with such public investments exceed the costs of failing to boost saving. The table in the appendix shows that the cost of failing to boost saving may amount to between \$65 billion and \$300 billion in reductions in GDP in 2012, depending on which alternative is examined and to what it is compared. To believe that this added output is worth forgoing is to believe that public investment in private assets would cause economic inefficiencies sufficiently large to cause a loss in GDP of more than these amounts.

The Evidence on Whether Public Pension Investment in Private Assets Adversely Affects the Economy

Public investments in private assets carry some potential risks. The question here is whether the benefits of increased national saving outweigh the costs of limited public investments in private assets, especially if those investments are undertaken through the Social Security system rather than a general budget account and are made through an independent board that uses private investment managers and operates under statutory rules that erect substantial protections against political interference.

The experiences of state and local pension funds in the United States and national trust funds in other developed countries, including Denmark and Norway, are relevant here. These experiences suggest it is very unlikely that limited Social Security investments in private assets would generate efficiency losses of hundreds of billions of dollars a year. As a result, these experiences suggest that the loss to the economy of saving less as a result of tax cuts or other actions that dissipate the projected surpluses is likely to exceed any loss to the economy as a result of circumscribed Social Security investments in private assets.

In the United States, state and local public pension funds have long invested in private assets. At the end of the third quarter of 2000, state and local pension investments in private assets amounted to \$2.8 trillion, an amount equal to 28 percent of GDP. (Of this amount, state and local pension investments in corporate equities amounted to almost \$2 trillion, or 19.5 percent of GDP.¹³) This scale is likely to be *well beyond* anything that the federal government might undertake. Yet it has not endangered the efficiency of our private capital markets. These amounts have been invested without any significant politicization of our capital markets, even though state and local pension funds generally lack the institutional protections, such as fully independent boards and a passive management strategy, that almost certainly would be part of any reasonable proposal for investing a portion of Social Security reserves in private markets.

¹³ Data from Table L.120 of the Flow of Funds Accounts, December 8, 2000, available at www.federalreserve.gov. At the end of third quarter of 2000, state and local government employee retirement funds held a total of \$3.034 trillion in financial assets, of which \$208.9 billion was in U.S. Treasury securities and \$1.7 billion was in municipal securities. Financial assets representing claims on the private sector amounted to \$2.824 trillion, or 28 percent of GDP in the third quarter of 2000 (\$10.039 trillion). Of this total, \$1.95 trillion was held in the form of corporate equities.

Recent research suggests that state and local pension funds now perform relatively well. Alicia Munnell and Annika Sunden of Boston College recently concluded that, "the story that emerges at the state and local level is that while in the early 1980s some public plans sacrificed returns for social considerations, plan managers have become much more sophisticated. Today, public plans appear to be performing as well as private plans."¹⁴ State and local pension funds now devote no more than 2.5 percent of their total holdings to "economically targeted investments" (the ones that could reflect political preferences). The vast majority of state and local funds do not engage in shareholder activism (and the ones that do appear to be motivated by improving their financial performance, rather than political interference), and divestiture based on political grounds has largely been limited to South Africa before 1994. Munnell and Sunden also note that, "In our view, it is particularly remarkable that so little social investing has taken place at the state and local level given that many of these public plans lack the federal protections afforded corporate pension plans and those envisioned for possible Social Security equity investment."¹⁵

The experiences of foreign governments in managing private investment also is encouraging.¹⁶ For example, Canada has recently changed the regulations governing its Canada Pension Plan to allow that system to invest a portion of its reserves in private assets. The investments are governed by an independent investment board comprising 12 members, each of whom will serve a three-year term. The board is currently investing in stock funds that replicate the TSE 300 Index on the Toronto Stock Exchange, the S&P 500 Index for large public companies in the United States, and the EAFE Index of about 1,300 companies in Europe, Australasia and the Far East. (Last year, it invested roughly 80 cents of every new dollar in the TSE 300 fund and 10 cents each in the U.S. and foreign funds).¹⁷

It still is too early to know how well the Canadian approach will work. But other developed countries have shown they can successfully invest in private assets over extended periods of time. In Denmark, for example, the ATP fund is a public pension fund whose assets amount to 25 percent of GDP. It invests largely in Denmark, including in stocks, corporate bonds, and mortgage securities. It has very low expenses (annual costs are about 0.1 percent of assets under management, relative to an average cost that U.S. mutual funds charge of

¹⁴ Alicia Munnell and Annika Sunden, "Investment Practices of State and Local Pension Funds: Implications for Social Security Reform," Center for Retirement Research, Boston College, CRR WP 1999-01, April 1999, page 3.

¹⁵ Munnell and Sunden, page 35.

¹⁶ It should be noted that in a number of developing countries, the experience with trust fund investments has been poor: The investments have been politicized, and the trust funds have been mismanaged. See, for example, the discussion in the World Bank, *Averting the Old Age Crisis* (1994). The experiences in developing countries are not necessarily relevant to the United States, however. Experiences in the industrialized countries seem more relevant.

¹⁷ For more on the investment board in Canada, see <http://www.cppib.ca>.

approximately 1.5 percent of the funds under management). Perhaps more importantly, there is no evidence of political interference in its decision-making. Indeed, the fund is so successful that private pension funds in Denmark have begun hiring it to administer their investments.¹⁸ In Norway, it is widely expected that the State Petroleum Fund, with assets of more than 15 percent of GDP, will be used to pay off social security obligations. The State Petroleum Fund invests largely in foreign bonds and has achieved a successful investment record.¹⁹

The Federal Thrift Savings Plan in the United States provides yet another example of successful private investments by a public entity. The Thrift Savings Plan has proven to be a very popular savings vehicle for federal government employees, and it has avoided even a hint of political interference in its investment management. Francis Cavanaugh, the first executive director of the Federal Retirement Thrift Investment Board (which oversees the Thrift Savings Plan's investments), noted in a 1999 interview that, "The question is not can it be done. The question that should be asked is whether the Congress, having protected three million Federal employees from political manipulation of their retirement funds, will be willing to extend that same protection to the 150 million beneficiaries of Social Security."²⁰ In short, there are a number of examples in which the public sector has effectively managed pension investments in private assets without undue politicization.

Institutional Protections Against Politicization of the Capital Markets

The specter of a government behemoth or cadres of government bureaucrats wielding awesome market power for political purposes, making or breaking companies, and applying pressure to firms that are out-of-favor such as tobacco companies and businesses with which the government is engaged in legal disputes does not reflect the structure of recent proposals for investing a portion of Social Security reserves in private markets, such as the proposals that Henry Aaron of the Brookings Institution and Robert Reischauer of the Urban Institute have developed. These proposals would provide no opportunity for politicians to block investment in firms of which they disapprove.

Virtually all parties to this debate concur that in investing Social Security reserves in equities, *no* Congressional or executive branch involvement should be allowed. Most proposals to allow a portion of Social Security reserves to be invested in private securities would establish an independent board tasked with selecting private investment managers. (One could even create a new government-sponsored enterprise as this intermediary, with a government charter

¹⁸ For more on the ATP fund in Denmark, see Tryggvi Thor Herbertsson, J. Michael Orszag, and Peter R. Orszag, *Retirement in the Nordic Countries: Prospects and Proposals for Reform*, prepared for the Nordic Council of Ministers, May 2000, available at <http://www.sbgo.com>, page 65.

¹⁹ See International Monetary Fund, *Norway: Selected Issues*, February 1999, IMF Staff Country Report 99/11.

²⁰ "Social Security Investment Plan Raises a Debate," *New York Times*, January 24, 1999, page 16.

but private owners, to add another layer of private-sector protection against government interference in markets.)

Although it was not particularly well-received in Congress, in part because of Chairman Greenspan's opposition at that time, the proposal the Clinton Administration made in 1999 for trust fund investments provides an example of how to structure such investments. That proposal would remove management of a portion of the trust-fund reserves from the executive branch and Congress and transfer it to an independent, non-political, professional management board structured so the board would be beyond Administration and Congressional control. This independent board, the members of which would be expected to have substantial experience in pensions and investing, would in turn contract with private fund managers selected through competitive bidding. These managers — which could include entities such as Merrill Lynch, Vanguard, or State Street Bank — would undertake the investing of a modest portion of Social Security reserves in broad index funds in the equities markets. Investments in individual stocks, rather than index funds, would not be permitted.

A stock market index is a collection of a particular group of stocks. For example, the Standard and Poor's 500 index measures the average performance of the stock of the 500 largest publicly traded corporations. One of the broadest indexes is the Wilshire 5000, which measures the average performance of virtually all publicly traded stocks; more than 7,000 firms are represented in this index. The Clinton Administration's proposal envisioned use of a broad index such as the Wilshire 5000, rather than an index like the S&P 500 that covers only the largest companies.

Under passive index investing, as is done by the managers of the Federal Retirement Thrift Investment Board and as would have occurred under the Clinton Administration's Social Security proposal, a fund manager purchases and holds the shares of all firms included in a particular index. The fund manager may not delete firms included in the index or invest in firms not reflected in the index. Instead, the fund manager is required to mimic the index. The fund manager consequently cannot pick and choose among companies for political or other reasons. Restricting investments to index funds reduces the risk of political interference in the capital markets.

Furthermore, the actual investment would be undertaken by private-sector pension managers, not by the government. Then-Treasury Secretary Robert Rubin noted that "there [are] really two layers of protection" against political interference in proposals such as that advanced by the Clinton Administration. He noted "there'll be an independent body that will oversee the investment of the funds, and then the funds themselves will be invested by private sector money managers, not by the government. The government will be involved absolutely not at all in the investment."²¹

²¹ Interview with Secretary Robert Rubin on Good Morning America, January 21, 1999.

These types of institutional protections would help to minimize any danger from investing part of Social Security's reserves in private assets.

Conclusion

The emergence of large, but temporary, projected budget surpluses presents the nation with a promising opportunity to prepare more adequately for the longer-term challenges associated with the retirement of the baby boomers, increased life expectancies, and ongoing innovations in medical technology. The surpluses can raise national saving, which then provides the nation with additional resources to meet these challenges.

Chairman Greenspan has identified a potential tension, given the current forecasts, between national saving and avoiding public investment in private assets. Public investment in private assets does entail the potential risk of politicization of capital markets. The cost of forgoing national saving also is high, however, especially in the face of significant uncertainty about the long-term costs of Medicare, Medicaid, and Social Security. One must balance one potential cost against the other. Given the protections that can be erected to limit political interference from public investments in private assets (especially if the investing is limited to Social Security reserves), and the experiences of foreign governments and state and local pension funds in administering their own investments, it appears unlikely that the costs associated with public investments in private assets would exceed the costs of forgoing national saving.

Furthermore, the budget forecasts are highly uncertain, and it is unclear whether the "peril of zero debt" will come to pass in the foreseeable future. This potential peril does not provide a persuasive argument for enacting legislation this year that devotes most or all of the surpluses projected for the next ten years to tax cuts or program initiatives.

Appendix: Computing the Impact on GDP

The table below presents the results of the analysis described in this appendix. The rest of the appendix shows how the numbers were derived.

Amount devoted to saving (debt reduction):	None of the projected surpluses, 2002-2011	Social Security surplus only, 2002-2011	Social Security plus Medicare HI surpluses, 2002-2011	Social Security plus Medicare HI plus one-third of rest of surplus, 2002-2011	Entire unified surplus, 2002-2011
Net debt of Federal government at end of 2011 (in billions of current dollars)	\$3,148	\$776	\$383	-\$526	-\$2,346
Gross Federal holdings of private assets at end of 2011 (as % of GDP) ²²	NA	0.2%	2.5%	7.9%	18.5%
Increase in capital at end of 2011 (in billions of nominal dollars), relative to saving none of the projected surpluses	\$0	\$1,779	\$2,073	\$2,756	\$4,121
Real GDP in 2012 (in billions of 2001 dollars)	\$14,298	\$14,420	\$14,441	\$14,488	\$14,582
Increase in real GDP in 2012 (in billions of 2001 dollars), relative to saving only the projected Social Security surpluses	-\$123	\$0	\$20	\$67	\$161
Increase in real GDP in 2012 (in billions of 2001 dollars), relative to saving <i>none</i> of the projected surpluses	\$0	\$123	\$143	\$190	\$284

²² Assumes that \$818 billion in publicly held debt is not available for repurchase at the end of 2011, as CBO estimates in its most recent projections. The asset holdings for the various scenarios presented in the table are expressed, for simplicity's sake, relative to a single value of GDP in 2011 (\$17,132 billion, the level projected by CBO).

Step 1: For each of the scenarios, the first step is to compute the net Federal debt outstanding at the end of 2011. (Net Federal debt is defined as publicly held Federal debt minus public investments in private assets.) This was calculated using data from the CBO projections on the Social Security surplus, the Medicare HI surplus, and the rest of the surplus. The change in net Federal debt between the end of 2001 and the end of 2011 is approximately equal to the surplus "saved." (A slight discrepancy arises in this relationship because of items such as the treatment of student loans. This discrepancy amounts to \$117 billion over 2002-2011. The change in net debt is thus equal to the surplus saved between 2002 and 2011 minus \$117 billion.²³) The table below presents the results of Step 1.

	Surplus, 2002-2011 (\$ billion)	Net Federal debt at end of 2011 (\$ billion)
Save none of the surpluses	\$0	\$3,148
Save Social Security surplus	\$2,489	\$776
Save Social Security surplus plus Medicare HI surplus	\$2,882	\$383
Save Social Security surplus plus Medicare HI surplus plus one-third of remaining surplus	\$3,791	-\$526
Save entire projected surplus	\$5,611	-\$2,346

Note: Federal debt held by the public at the end of 2001 is projected to amount to \$3,148 billion.

Step 2: These differences in net Federal debt have three effects: Part of the differences will be offset by changes in private saving, part will be reflected in the amount of domestic capital in the United States (thereby making workers more productive in the future), and part will be reflected in the amount of borrowing the United States undertakes from foreigners. The first effect arises because of the impact of any tax cuts on private saving (assuming that part of any tax cut would be saved), as well as any effect of changes in government debt itself on private saving behavior. To reflect these potential offsets on private saving, the change in net Federal debt was reduced by 25 percent to produce an estimate of the effect on the nation's capital stock (including net foreign investment) in 2011.²⁴ The division of the total effect between domestic capital and

²³ The only exception is that the scenario examining saving none of the projected surpluses assumes no change in Federal debt.

²⁴ The Council of Economic Advisers (CEA), in February 1994, argued that the private saving offset to increased federal saving would be zero. See Council of Economic Advisers, *Economic Report of the President 1994* (Government Printing Office), page 83. The CBO, however, argues that between 20 and 50 percent of increased federal saving is offset by reduced private saving. See CBO, "Description of Economic Models," November 1998. The 25 percent figure reflects a combination of the CEA and CBO views.

changes in foreign borrowing is unimportant for our purposes, as explained below. The table below shows the results for the nation's capital stock, relative to saving none of the projected surpluses.

	Net Federal debt at end of 2011 (\$ billion)	Change in nation's capital stock, relative to saving none of the surplus (equals \$3,148 minus the net Federal debt under each alternative, minus 25% of the resultant difference)
Save none of the surpluses	\$3,148	\$0
Save Social Security surplus	\$776	\$1,779
Save Social Security surplus plus Medicare HI surplus	\$383	\$2,073
Save Social Security surplus plus Medicare HI surplus plus one-third of remaining surplus	-\$526	\$2,756
Save entire projected surplus	-\$2,346	\$4,121

Step 3: The change in the capital stock is used to estimate a change in GDP. The figures in the text assume a marginal product of capital of 8.5 percent, which means that an increase in the nation's capital stock of \$100 is assumed to raise GDP by \$8.50. (This assumption regarding the marginal product of capital is taken from a recent paper by Martin Feldstein and Andrew Samwick.²⁵)

Two points are worth noting about this assumption: First, given the increase in the capital stock implied by some of the scenarios and the possibility that some of the additional capital will flow into non-productive capital, the marginal product of capital may turn out to be lower than 8.5 percent. (An increase in capital generally reduces the marginal benefit of an additional unit of capital, so increases in capital generally reduce the marginal product of capital.) The calculations were therefore also undertaken assuming a 7 percent marginal product of capital; the

²⁵ See Martin Feldstein and Andrew Samwick, "Allocating Payroll Tax Revenue to Personal Retirement Accounts," *Tax Notes*, June 19, 2000, p. 1645. Also assumes that CBO's projected 3.1 percent real growth rate for 2010 and 2011 is continued into 2012. Note that it is technically more accurate to examine Gross National Product, rather than Gross Domestic Product, since some of the differentials in capital are likely to manifest themselves in the stock of net foreign investment rather than the stock of domestic capital. Under the assumption that the return on foreign capital is equal to the return on domestic capital, however, this caveat is merely semantic: The benefit to future workers is unaffected.

results are not substantially different.²⁶ Second, the distinction between domestic capital and net foreign investment is immaterial as long as the return to foreign capital equals the marginal product of capital domestically.

The table below presents the results of step 3 of the calculations.

	Change in nation's capital stock, relative to saving none of the surplus	Change in nominal GDP in 2012, in billions of dollars (equals 8.5 percent multiplied by the change in the capital stock)	Change in real GDP in 2012 (in billions of 2001 dollars)*
Save none of the surpluses	\$0	\$0	\$0
Save Social Security surplus	\$1,779	\$151	\$123
Save Social Security surplus plus Medicare HI surplus	\$2,073	\$175	\$143
Save Social Security surplus plus Medicare HI surplus plus one-third of remaining surplus	\$2,756	\$234	\$190
Save entire projected surplus	\$4,121	\$350	\$284

* GDP inflation between 2001 and 2012, cumulatively, amounts to 23 percent. Thus, 2001 dollars equal 2012 dollars divided by 1.23.

The figures in the right-hand column are reflected in the bottom row of the table at the beginning of the appendix. The impact on real GDP relative to any of the other scenarios can be computed by subtracting the impact of one scenario from another.

Impact of Marginal Tax Reductions on Future GDP

One potential objection to these calculations is that they do not reflect any impact of marginal tax reductions on future GDP. They also do not include any impact of potential changes in spending programs (such as additional resources to reduce class sizes in schools or expand Head Start). A forthcoming Center on Budget and Policy Priorities paper discusses whether tax cuts are always more beneficial for the economy than any spending increases. Here, we briefly examine whether a dollar devoted to reducing marginal tax rate rates would raise

²⁶ For example, the increase in real GDP from saving the Social Security, Medicare, and one-third of the remaining projected surpluses (relative to saving none of the projected surpluses) is \$156 billion if the marginal product of capital is 7 percent and \$190 billion if the marginal product of capital is 8.5 percent.

income in the future by more or less than saving the dollar (i.e., using it to reduce debt or acquire private assets).

The economics literature on the effects of marginal tax rate reductions on broad measures of income is mixed. Some papers have found large effects, but they typically have focused only on the 1980s, when other trends may have conflated the analysis. The most recent evidence suggests quite modest effects on income from reducing marginal tax rates. For example, a recent paper by Jonathan Gruber of MIT and Emmanuel Saez of Harvard University explores the effects of marginal tax rate reductions using a broader series of tax changes.²⁷ They find only modest effects on "broad income" (which is the closest measure in concept to GDP in their paper). Their estimates can be used to estimate the impact on future GDP from the proposed Bush marginal tax rate reductions.

The current average marginal tax rate (including payroll taxes, and weighting each individual's marginal tax rate by his or her income) is approximately 38 percent.²⁸ The proposed changes in the tax rate schedule within the Bush plan would reduce the average marginal tax rate to approximately 35 percent.²⁹ Using the estimates from the Gruber and Saez paper, this three percentage point reduction in marginal tax rates would be expected to raise "broad income" by 0.6 percent in the long run.³⁰ Broad income, however, represents only 63 percent of GDP.³¹ The increase in GDP would therefore be 0.36 percent. (Gruber and Saez emphasize that their estimate is highly uncertain, and that the "true" effect could be zero: Their estimate is not

²⁷ Jonathan Gruber and Emmanuel Saez, "The Elasticity of Taxable Income: Evidence and Implications," NBER Working Paper 7512, January 2000.

²⁸ This figure is derived from "Individual Income Tax Rates and Shares, 1997," *Statistics of Income*, Spring 2000, Table 1. It assumes that taxpayers in the 15, 28, and 31 percent marginal income tax brackets face a 15.3 percent marginal *payroll* tax rate, and that taxpayers in the 36 and 39.6 percent marginal income tax brackets face a 2.9 percent marginal payroll tax rate. It excludes the effects of provisions such as the phase-out of itemized deductions (which applies to married taxpayers with adjusted gross income of more than \$128,950 in 2000) and of personal exemptions (which applies to married taxpayers with adjusted gross income of more than \$193,400 in 2000).

²⁹ This figure assumes that 25 percent of the income currently taxed at a 15 percent marginal income tax rate would instead be taxed at the 10 percent rate proposed as part of the Bush plan. This assumption is likely an overestimate, so that the overall marginal tax rate would not fall as much as assumed in this analysis (and therefore GDP would not rise as much).

³⁰ The Gruber-Saez paper suggests an elasticity of broad income with respect to the net tax rate of 0.12. The 0.6 percent figure is therefore computed as $0.12 * (\ln(1-.35) - \ln(1-.38)) = 0.006$. Note that Gruber and Saez also find that the elasticity is higher for higher-income taxpayers and lower for lower-income taxpayers. Applying their income-specific elasticities (see Table 8 of their paper) to each class of income produces a similar overall result.

³¹ In 1998, the Gruber-Saez definition of "broad income" would have amounted to slightly more than \$5.4 trillion. GDP was \$8.66 trillion. Broad income thus was 63 percent of GDP.

statistically significantly different from zero. The estimates here therefore are also uncertain and are effectively not statistically significantly different from zero.)

The marginal rate reductions and the creation of the 10 percent income tax bracket in the Bush tax plan — the provisions that reduce marginal tax rates by approximately three percentage points — would cost \$1.06 trillion over the next 10 years, counting the added interest that would result because less debt is repaid. Undertaking the same calculations as in the text, if that amount were instead used to reduce debt or acquire private assets, it would raise the nation's capital stock in 2011 by almost \$800 billion. Assuming a marginal product of capital of 8.5 percent, the additional capital would raise GDP by \$68 billion in 2012, or 0.39 percent of projected GDP that year. The increase in future output is thus about the same if the \$1 trillion is saved or used to reduce marginal tax rates.

The other components of the proposed tax package, however, seem unlikely to raise future GDP significantly. (Some of the other provisions may affect incentives, but their economic impact is likely to be quite minor.³²) Assume that these other provisions may raise GDP by as much as 0.1 percentage points in 2012. We thus can also compare the roughly 0.4 to 0.5 percent predicted increase in future GDP from the proposed tax reductions to the effects of the \$2 trillion overall cost (including interest) of the proposed Bush tax plan.³³ In that case, the tax reductions would raise real GDP in 2012 by about 0.4 to 0.5 percent, while saving the \$2 trillion instead would raise real GDP by about 0.8 percent, or about twice as much.

³² For example, the limited second-earner deduction, the change in the phase-out schedules for the child credit, and the estate tax changes may affect incentives. But the impact of these changes on GDP is likely to be quite minor.

³³ For a discussion of the overall cost of the Bush tax cut, see Robert Greenstein, "Cost of the Bush Tax Cut Rises," Center on Budget and Policy Priorities, Revised February 13, 2001.