

# **Economic Growth, Job Creation, and Incentives for Investment**

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Mr. Chairman, Senator Baucus, and Members of the committee:

Thank you for inviting me to testify today. It is an honor to appear before this committee. President Bush and members of Congress have proposed several new tax-based incentives aimed to raise economic growth. My testimony is divided into two sections: a summary of the conclusions, and supporting analysis.

### **Summary of major conclusions**

The first two conclusions focus on how to frame and consider policy questions relating to taxes and economic growth. The next four conclusions relate to specific policy options.

- In considering policies to spur the economy, it is important to distinguish short-term and long-term problems.
  - In the short-term, the major economic problem is inadequate aggregate demand, as evidenced in particular by low rates of utilization of capital among businesses. The key to boosting the economy in the short-run is boosting demand in order to fully utilize existing capacity.
  - In the long-term, the economic growth depends on the extent to which productive capacity (including physical capital, human capital, and economic institutions) is able to grow. Sustained increases in such capacity require increases in national saving.
- Tax cuts have ambiguous effects on economic growth in the long run.
  - Tax cuts can affect economic growth in the long run through at least two channels. First, a tax cut will affect labor supply, human capital accumulation, saving, investment, entrepreneurship and so on. Second, the reduction in revenues will raise the federal deficit (unless matched by spending reductions) and hence reduce national saving.
  - The net effect on growth is the sum of the (generally positive) effects created by more favorable economic incentives and the (negative) effects created by the increase in the deficit. For the tax cut to have a net positive effect on growth, the effects on labor supply, saving, etc., not only must be positive, they must be larger than the drag created by the increased deficit.
  - Increased deficits reduce national saving and future national income regardless of whether deficits raise interest rates. One of the best ways to encourage economic growth is to keep national saving high, which in turn implies that public saving should be high.
- The 2001 tax cut was poorly designed to raise growth. Neither accelerating the tax cut nor making it permanent should be considered pro-growth strategies.
  - According to Treasury data, 64 percent of taxpayers will receive no reduction in marginal tax rates. But the tax cut will reduce revenues by \$1.7 trillion through 2010 and

reduce national saving. Estimates of how deficits affect interest rates used by President Bush's Council of Economic Advisers imply that EGTRRA will raise the cost of capital for most investments.

--Researchers have generally found that the positive effects of the 2001 tax cut on labor supply, saving, etc., are likely to be offset by, and may well be outweighed by, the negative effects of the tax cut in reducing national saving.

--For the same reasons, accelerating the 2001 tax cut is unlikely to stimulate growth. An acceleration could raise the cost of capital on new investment for small businesses because it reduces the tax rate against which investment deductions may be taken.

--Making the 2001 tax cut permanent is neither affordable, nor would it do anything to spur growth currently. Given that EGTRRA as a whole probably had either a negligible or negative impact on growth, making it permanent is not a pro-growth strategy.

- The President's proposal to reduce taxes on dividends and capital gains is unlikely to generate much in the way of new growth.

--By reducing the double taxation of dividend income, the plan could reduce the cost of new corporate investments financed by new equity issues.

--It would not reduce the cost of investments financed by debt, and would likely reduce investment in non-corporate sectors, including housing and small businesses. It would also raise interest rates by encouraging investors to move from bonds to stocks. By raising deficits, it would reduce future national income.

--A study of all of these effects by Macroeconomic Advisers finds that plan would have no effect on average GDP between 2003 and 2007, would raise interest rates, and in the long run would *reduce* productivity.

- Increasing the temporary provision for partial expensing from its current 30 percent level is unlikely to spur much new investment.

--The primary problem that businesses face currently is inadequate demand, as evidenced by low capacity utilization rates. It is unclear why businesses would want to invest more, given that demand is so low they do not even use the capital they currently have.

- Small businesses would not generally fare well under the proposals under consideration.

--They would be helped directly by the proposed increase in expensing limits.

--But the acceleration of the tax cut, the dividend proposal, and the expansion of partial expensing would raise the cost of new investments and reduce the funds available for new investments by small business.

## Supporting text

### 1. Description of proposals

The President's budget contains four major tax-related proposals aimed at increasing economic growth.

- Accelerate to January 1, 2003, some, but not all, of the income tax cut provisions that were enacted in 2001 and scheduled to be implemented in the future. The accelerated items include the reduction in the top four income tax rates (from current levels of 27, 30, 35, and 38.6 percent to 25, 28, 33, and 35 percent, respectively); marriage penalty relief for middle- and upper-income households; an increase in the child credit to \$1,000; and expansion and indexing of the 10 percent tax bracket.
- Make EGTRRA permanent.
- Exclude all corporate dividends from taxation under the individual income tax provided that corporate taxes have been paid on the earnings generating the dividends. A related provision would allow companies to deem dividends without actually paying them, thus reducing eventual capital gains and capital gains taxes for shareholder.
- Increase the small business expensing limits to \$75,000 from \$25,000, and index for inflation.

Another proposal that has been floated is to increase the 30 percent partial expensing for corporate investments (which was enacted in 2002 and applies to investments made between September 11, 2001 and September 2004) to either 40 percent or 50 percent.

### 2. Relations between tax cuts, deficits, and economic growth

National income accounting identities go a long way toward framing the relevant issues. (For mathematical details, see the Appendix.) National saving is the sum of private saving (which occurs when the private sector spends less than its after-tax income) and public saving (which occurs when the public sector runs budget surpluses). National saving is identically equal to -- and is used to finance -- the sum of domestic investment and net foreign investment. Domestic investment is the accumulation by Americans of private assets at home, or of public (government) assets. Net foreign investment is the nation's investment overseas minus borrowing from abroad (foreign investment in the United States). An increase in net foreign investment may take the form of increased U.S. investment overseas, increased U.S. lending to foreigners, reduced foreign investment in the United States, or reduced U.S. borrowing from abroad. The composition of the change in net foreign investment is of secondary importance, and we will typically refer to an increase in net foreign investment as "increased borrowing from abroad." We refer to the sum of domestic and net foreign investment as "national investment."

In simplest terms, national saving must by identity equal national investment, and an increase in national saving must show up as an increase in domestic investment and/or net

foreign investment. Either way, the accumulation of assets due to increased saving and investment means that the capital stock owned by Americans is increased. The returns to that additional capital -- whether domestic or foreign -- raise the income of Americans in the future.

These macroeconomic building blocks highlight two key points (see also Figure 1):

- An increase in the budget deficit (a decline in public saving) reduces national saving unless it is fully offset by an increase in private saving, and
- A reduction in national saving must correspond to a reduction in national investment and in future national income, holding other things equal.

Barro (1974) demonstrates that if households are fully rational and take the well-being of their descendants into account in formulating their consumption and savings patterns, reductions in taxes today would be balanced by offsetting increases in private saving today. In particular, households would recognize that the reduction in taxes today would increase future tax liabilities and thus save the tax cut. Numerous tests of household saving behavior, however, conclude that households do not follow the dictates of this model (Bernheim 1987). The implication is that increased budget deficits are not fully offset by increases in private saving, and therefore result in a reduction in national saving.

A decline in national saving must reduce private domestic investment, net foreign investment, or some combination thereof. The reduction in investment reduces the capital stock owned by Americans, and therefore reduces the flow of future capital income. Either the domestic capital stock is reduced (if the reduction in national saving crowds out private domestic investment) or the nation is forced to mortgage its future capital income by borrowing from abroad (if the reduction in national saving generates a decline in net foreign investment). In either case, future national income is lower than it otherwise would have been.

Figure 1 illustrates this logic: The junction marked A highlights the relation between deficits and national saving. It shows that as long as private saving rises by less than 100 percent of the decline in public saving, national saving falls in response to a budget deficit, which in turn reduces future national income, other things equal. The extent to which the decline in national saving generates a response from capital inflows (junction B) or interest rates (junction C) or both may also be of interest in its own right, but it does not alter the basic conclusion that larger deficits reduce future national income, other things equal.

As shown in the appendix, these findings can be used to illustrate the potential longer-term consequences of the recent deterioration in fiscal prospects.

### 3. Changing EGTRRA

#### A. EGTRRA and Growth

The analysis above considers only the effects of reduced budget surpluses or increased budget deficits *per se*. It establishes the crucial observation that, other things equal, smaller

budget surpluses reduce future national income relative to what it would otherwise be, and do so regardless of how they affect interest rates. In this section, we point out that a full analysis of policies that raise deficits or reduce surpluses needs to take into account (1) the direct effects of the policy in question, ignoring any change in the deficit, and (2) the change in the deficit.

The most recent prominent example of this issue is the 2001 tax cut. The net effect of the 2001 tax cut on growth is the sum of its direct effect on changes in incentives and after-tax income and its indirect effect through changes in the budget deficits. The improved economic incentives from provisions of the 2001 tax cut, analyzed in isolation, tend to raise labor supply, human capital accumulation, and private saving. But these changes in incentives are financed by reductions in public saving. Thus, to gauge the full effect on growth, one needs to factor in the effect of lower public saving on economic growth.

Given the structure of the 2001 tax cut, researchers have generally found that the positive effects on future output from the impact of reduced marginal tax rates on labor supply, human capital accumulation, private saving and investment either substantially offset or even outweigh the negative effects of the tax cuts via reduced public and national saving (see Auerbach 2002, CBO 2001, Elmendorf and Reifschneider 2002, Gale and Potter 2002).

There are several factors that help show why the effects of EGTRRA on growth are likely to be small or even negative. First, Treasury data in Kiefer et al (2002) show that 64 percent of tax filers with positive tax liability, accounting for 38 percent of all taxable income, would receive *no reduction* in marginal tax rates under EGTRRA. Most of these households were either in the 15 percent bracket or on the alternative minimum tax. Second, the increase in the deficit could raise interest rates and that increase would raise the cost of capital on new investments. President Bush's Council of Economic Advisers routinely uses an estimate that a \$200 billion increase in the deficit raises interest rates by 3-5 basis points. If so, the \$1.7 trillion cost of EGTRRA over the next 10 years would be expected to raise interest rates by between 25 and 42 basis points. Gale and Potter (2002) show that if EGTRRA causes interest rates to rise by 30 basis points, then the net effect of EGTRRA--including reduced marginal income tax rates--is to raise the cost of new investments for sole proprietors, for housing, and for corporate investments in structures. Only the cost of corporate investments in equipment would fall, and by less than 1 percent. Third, the reduction in federal surpluses (or increases in deficits) of \$1.7 trillion through 2011 will reduce national saving. The \$1.7 trillion includes \$1.35 trillion in tax cuts plus the additional debt service costs.

## B. Accelerating EGTRRA

All of the reasons noted above, combined with the fact that accelerating EGTRRA is a *temporary* tax cut, suggest that accelerating the 2001 tax cut would have negligible effects on growth.

In fact, at least one aspect of accelerating the tax cut could *reduce* investment currently. The cost of capital that sole proprietors, partnerships, and S-corporations face on new investment depends in part on the present value of the depreciation allowances they are able to deduct. Thus, a business would like to deduct depreciation against high tax rates, since a \$1

dollar deduction is worth more the higher the tax rate is. Right now, with tax rates poised to decline over time, businesses (other than C Corporations) face the rosy prospect of making investments now, taking the depreciation in the next few years at relatively high tax rates and then reporting the income in the future after 2006 against relatively low rates. Reducing tax rates now would reduce the benefit of the depreciation deductions and hence could reduce new investment by those businesses.

### C. Making EGTRRA Permanent

Making EGTRRA permanent is unlikely to stimulate growth, for the same reasons that EGTRRA is estimated to have little impact on growth over the next decade. Still it is worth noting that the Congressional Budget Office (2003) has estimated that letting EGTRRA sunset would reduce GDP by 0.5 percent. Perhaps surprisingly, this estimate is fully consistent with EGTRRA having little or no impact on economic growth over the past decade and little or no impact in the future.

To see this, recall that taxes have two sets of effects--one on incentives and one on national saving via the deficit. The CBO estimate of the effects of letting EGTRRA expire is solely an "incentive" effect. Note that it implies that the cumulative value of the incentives in EGTRRA would be to raise GDP by 0.5 percent over the decade. That implies an increase in GDP of about \$81 billion by 2011 (CBO 2003, table 1-2). But recall also that the full effects of EGTRRA are the incentive effects plus the impact on national saving. To calculate the latter effect, note that EGTRRA reduces budget surpluses by \$1.7 trillion over the decade. Assuming that private saving rises by about one-third of this amount (based on Gale and Potter 2002), national saving falls by \$1.13 trillion. With a 6 percent interest rate, the decline in national saving implies a reduction of \$68 billion in income. That means that EGTRRA will raised GDP by only \$13 billion (81-68) in 2011. This is less than 0.1 percent of GDP.

## 4. The dividend proposal

### A. As corporate tax reform

The dividend tax proposal is intended to tax corporate income once and only once.<sup>1</sup> Three points are important to emphasize about this proposal. First, most corporate income in the United States is not taxed twice. A substantial share of corporate income is not taxed at the corporate level, due to shelters, corporate tax subsidies and other factors.<sup>2</sup> Recent evidence

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<sup>1</sup> The provision would represent a significant tax cut for both dividends and capital gains on corporate stocks. In simplest terms, under the Administration's proposal, dividends paid out of corporate earnings that were already taxed at the corporate level would not be subject to the individual income tax. In addition, earnings that were already taxed at the corporate level and that were retained by the corporation would generate a basis adjustment for shareholders. Such a basis adjustment means that, when the stock is ultimately sold, the increase in stock price due to retained earnings taxed at the corporate level would not generate a capital gains tax liability at the individual level.

<sup>2</sup> Robert McIntyre, "Calculations of the share of corporate profits subject to tax in 2002." January 2003.

suggests growing use of corporate tax shelters.<sup>3</sup> Furthermore, half or more of dividends are effectively untaxed at the individual level because they flow to pension funds, 401(k) plans, and non-profits.<sup>4</sup> Although data limitations make definitive judgments difficult, the component of corporate income that is not taxed (or is preferentially taxed) appears to be at least as large as the component that is subject to double taxation. That is, the non-taxation or preferred taxation of corporate income is arguably at least as big of a concern as double taxation.

Second, the Administration's proposal would have no effect on firms' incentives to shelter and retain earnings to the extent that firms are owned by non-taxable shareholders. To the extent that firms are held by taxable shareholders, the Administration proposal would reduce incentives to shelter somewhat, but firms would still maximize shareholders' after-tax returns by sheltering corporate income from taxation and then retaining the earnings -- the same strategy that maximizes taxable shareholders' after-tax returns under current law. Despite the Administration's claims to the contrary, the proposal therefore does not eliminate, and may not even reduce to a significant degree, the incentives that exist under the current tax system to shelter corporate income from taxation and then to retain the earnings.

Third, the Administration's proposal may result in a variety of new tax shelters.

A partial dividend exclusion is not a solution to these problems either. It just reduces both the benefits and costs of the proposal. Proponents of the dividend exclusion often note that many European countries have partially or fully integrated their corporate and personal tax systems. However, it is also the case that several European countries have recently moved away from integrated systems.<sup>5</sup> In addition, the large share of corporate equities are held by shareholders that are not subject to individual dividend and capital gains taxes appears to be much higher in the United States than in most European countries.

The bottom line is that the Administration's proposal does the "easy" part of tax reform: it cuts taxes. It fails, however, to do the difficult part of any serious tax reform effort: broadening the tax base and eliminating the share of corporate income that is never taxed (or taxed at preferential rates). That difference is what distinguishes "tax reform" from "tax cuts." The approach proposed by the Administration would also undermine the political viability of true corporate tax reform. Any such reform would have to combine the "carrot" of addressing the double taxation of dividends with the "stick" of closing corporate loopholes and preferential tax provisions, but the Administration's proposal simply gives the carrot away. Burman (2003) and Gale and Orszag (2003) discuss modifications to the Administration's proposal that would

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<sup>3</sup> Mihir Desai, "The Corporate Profit Base, Tax Sheltering Activity, and the Changing Nature of Employee Compensation," NBER Working Paper 8866, April 2002.

<sup>4</sup> William G. Gale, "About half of dividend payments do not face double taxation," *Tax Notes*, November 11, 2002. Although taxes are due on pensions and 401(k) plans when the funds are paid out or withdrawn, the effective tax rate on the return to saving in such accounts is typically zero or negative because the present value of the tax saving due to the deduction that accompanies the original contribution is typically at least as large as the present value of the tax liability that accompanies the withdrawal. Also note that a substantial share of capital gains on corporate stocks is never taxed because of the basis step-up at death.

<sup>5</sup> Reuven Avi-Yonah, "Back to the 1930s? The Shaky Case for Exempting Dividends," [Tax Notes](#)



represent a more balanced approach to changing the system of taxing corporate income.<sup>6</sup>

## B. As a Growth Package

In the long run, the key to economic growth is to expand the capacity of the nation to produce goods and services. That capacity, in turn, depends on national saving. Yet the Administration's plan will expand the budget deficit, which will have the effect of *reducing* national saving.<sup>7</sup> Only if the economic benefits of the policy changes generating the deficits *more than offset* the losses imposed by reduced national saving would the net effect be positive.

A study by Macroeconomic Advisers<sup>8</sup> reached the following conclusions regarding the growth and jobs package, including the dividend plan:

- The plan would have no effect on average GDP between 2003 and 2007.
- Employment would grow by an average of 21,000 per year over the next five years
- The yield on 10-year Treasury notes would rise by 23 basis points by 2004 and by about 50 basis points by 2007; and
- In the long-term, productivity would *fall* and the cost of capital would *rise*, due to the effects of increased deficits on national saving and interest rates.

It is worth emphasizing several reasons why the plan may not stimulate much if any growth. First, although the plan will help allocate an existing amount of investment more efficiently across sectors (though significant corporate tax reforms would do an even better job in this regard), by raising the deficit and reducing national saving the plan is likely to reduce the total amount of capital owned by Americans. Second, the impact on corporate investment will muted to the extent that interest rates rise (due to making equities more attractive) and the extent to which investments tend to be financed with debt or retained earnings. Third, to the extent the

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<sup>6</sup> Leonard E. Burman, "Taxing Capital Income Once," Urban-Brookings Tax Policy Center, January 2003, and William G. Gale and Peter R. Orszag, "The Administration's Proposal to Cut Dividend and Capital Gains Taxes," *Tax Notes*, January 20, 2003.

<sup>7</sup> The reduction in national saving reduces the nation's future income. That is the fundamental cost of a failure of long-term fiscal discipline: All else being equal, it reduces the capital owned by Americans and the nation's income over time. For example, Gale and Orszag (2002) show that the deterioration in the fiscal outlook since January 2001, all else being equal and not including the Administration's most recent proposal, will reduce income in 2012 by the equivalent today of \$1,500 per household per year. See William G. Gale and Peter R. Orszag, "The Economic Effects of Long-Term Fiscal Discipline," Urban-Brookings Tax Policy Center, December 2002. In recent months, Administration officials and others have argued that budget deficits do not affect interest rates. Gale and Orszag (2002) address this issue in detail. The important point to realize is that focusing solely on the connection between interest rates and deficits obscures the more important point: Unless an increase in the budget deficit is entirely offset by an increase in private saving, it must produce either a reduction in domestic investment or an increase in borrowing from abroad. All else equal, it must therefore reduce the capital stock owned by Americans and reduce future income.

<sup>8</sup> "A Preliminary Analysis of the President's Jobs and Growth Proposals," January 10, 2003, Macroeconomic Advisers, LLC, [www.macroadvisers.com](http://www.macroadvisers.com).

proposal would attract funds to the corporate sector, those funds may simply generate one-time windfall gains in corporate stock without affecting investment. Any increase in stock values would raise consumption somewhat and would serve to reduce private saving. Fourth, to the extent that funds are channeled to the corporate sector, fewer funds may be available to finance investment by unincorporated business and S-corporations. To the extent that interest rates rise, investment in interest-sensitive sectors like housing may decline.

#### 5. Increase in partial expensing

Expanding the partial expensing provision is unlikely to generate much in the way of new investment. Although there is an established research finding that, on average, cuts in the cost of capital raise investment, there is -- to my knowledge -- no evidence that demonstrates that such policies work well *in the presence of substantial non-utilization of existing capacity*. That is, the key question is not whether such incentives work well under average conditions, but whether they work well under acute conditions--with low investment and low capacity utilization.

Intuition suggests that under current circumstances firms are not likely to be very responsive to changes in investment subsidies. For example, despite generous subsidies to new investment embodied in the 2002 stimulus act (including the provision to allow 30 percent partial expensing in the first year), and despite low inflation (which reduces the cost of investing because it raises the value of nominal depreciation allowances in the future ) and low interest rates, investment has remained constant or fallen over the last few years. If an increase from zero to 30 percent partial expensing had such a small effect on investment, it is hard to see how increasing it more would cause an investment surge.

#### 6. Effects on small business

A key concern for policy makers is the impact of the tax cut plans on small businesses. The proposals in question would have a variety of effects on the small business sector and it is not at all clear that the sector would come out ahead.

- Under the President's growth and jobs more than half (51.6 percent) of tax returns with small business income would receive a direct tax cut of \$500 or less in 2003.<sup>9</sup>
- The expansion of small business expensing options will undoubtedly reduce the cost of capital for some small businesses and encourage them to invest more. Note, however, that this occurs only a limited range of investment and the subsidies are taken back when investments reach a higher level.
- Lower marginal tax rates will improve cash flow and reduce taxation of income from old projects for some businesses but as noted above it will raise the cost of capital for new investments and thus may reduce new investments.

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<sup>9</sup> For further discussion of the effects on small businesses, see Andrew Lee, "President's Radio Address and Other Administration Statements Exaggerate Tax Plan's Impact on Small Businesses," Center on Budget and Policy Priorities, January 18, 2003.

- The dividend proposal would divert capital from the small business sector and put upward pressure on interest rates, both of which would increase the cost of capital for small businesses and may reduce new investments by that sector.
- A recent study by Cullen and Gordon (2002) find that EGTRRA will reduce the level of entrepreneurial activity by reducing the tax benefits of entrepreneurship relative to other economic activity. Accelerating the tax cut or making it permanent may therefore be unlikely to help the small business sector as a whole. Cullen and Gordon (2002) argue that--and present evidence that--incentives to engage in entrepreneurial activity fall when individual income tax rates fall because small businesses can shelter income more effectively than wage earners can. Also, lower tax rates make risky projects relatively less attractive because the government bears less of the risk.. Moreover, when personal tax rates are high, entrepreneurs have the advantage of being able to take losses at high personal tax rates, but if projects succeed they can incorporate and reduce their tax rate.

## Appendix

### A. National income accounting identities

We follow Mankiw and Elmendorf (1998) in the derivations below. The private sector's budget constraint is given by

$$(1) \quad Y = C + S + T,$$

where  $Y$  is national income,  $C$  is private consumption,  $S$  is private saving, and  $T$  is taxes paid less transfer payments received. National income is also equal to national output, which is given by:

$$(2) \quad Y = C + I + G + NX \quad \{1\}$$

where  $G$  is government purchases of goods and services,  $I$  is domestic investment, and  $NX$  is net exports of goods and services (exports minus imports). Substituting (2) into (1) yields:

$$(3) \quad S + (T-G) = I + NX.$$

Another identity implies that

$$(4) \quad NX = NFI$$

where  $NFI$  is net foreign investment, the difference between what Americans invest overseas and what foreigners invest here. Equation (4) simply says that the international flow of goods and services has to be matched by an international flow of funds. Substituting (4) into (3) yields:

$$(5) \quad S + (T-G) = I + NFI.$$

The left-hand side of (5) is national saving, the sum of private saving and public saving. The right-hand side is the sum of domestic investment and net foreign investment, which we will call national investment. Thus, equation (5) is the key relation equating national saving and national investment.

Equation (5) can also be used to demonstrate the basic points of section I in the paper. If government saving falls, three things can happen. Private saving may rise to re-establish the equality in (5) at the original level of national saving and national investment. If it does not, however, then domestic investment falls, and/or net foreign investment falls. As long as less than 100 percent of the adjustment occurs via changes in private saving, both national saving and national investment will fall as the deficit rises.

A decline in either domestic investment or net foreign investment will reduce future national income. As Elmendorf and Mankiw (1998, page 17) note: "Reduced domestic investment over a period of time will result in a smaller domestic capital stock, which in turn implies lower output and income.....Reduced net foreign investment over a period of time means

that domestic residents will own less capital abroad (or that foreign residents will own more domestic capital). In either case, the capital income of domestic residents will fall."

## **B. A Quantitative Example of the Effects of Fiscal Deterioration on Future Income**

From January 2001 to January 2003, the CBO's cumulative projected surplus for fiscal years 2002 to 2011 fell by about \$5.6 trillion.<sup>10</sup> That reduction reflects the cumulative deterioration in government saving between 2002 and 2011 under the official forecasts. We assume that private saving would rise by about 25 percent of the decline in public saving.<sup>11</sup> This implies that the net capital stock owned by Americans will be \$4 trillion  $(=(1-.25)*5.6 \text{ trillion})$  lower in 2011 than if the fiscal deterioration had not occurred. To translate this change in the capital stock into a change in income, it is necessary to assume a rate of return to the capital. We use an estimate of 6 percent.<sup>12</sup> This implies a decline of real national income in 2012 of about \$252 billion  $(=.06*\$4.2 \text{ trillion})$ . The implied decline in national income equals about 1.4 percent of projected gross national product in 2012 or about \$800 for each person in the United States.<sup>13</sup>

It is also possible to estimate the impact of GDP, which depends on the capital stock employed in the United States, which in turn is financed by national saving plus net capital inflows. The implied \$4.2 trillion reduction in national saving above would generate some change in interest rates (possibly zero) and some change in capital inflows. We assume that 33 percent of the decline in national saving is financed by capital inflows.<sup>14</sup> This implies that the domestic capital stock would fall by \$2.8 trillion  $(=(1-.33)*\$4.2 \text{ trillion})$  and that GDP would therefore fall by about \$168 billion (again assuming a 6 percent rate of return on capital). This decline is smaller in dollar terms than the GNP decline because the capital inflows mitigate the adverse impact on GDP (even though the repayment of those inflows in the future creates a mortgage against future national income).

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<sup>10</sup> CBO (2001) projected a surplus of \$5.6 trillion. By January 2003, the figure had fallen to \$336 billion (CBO 2003).

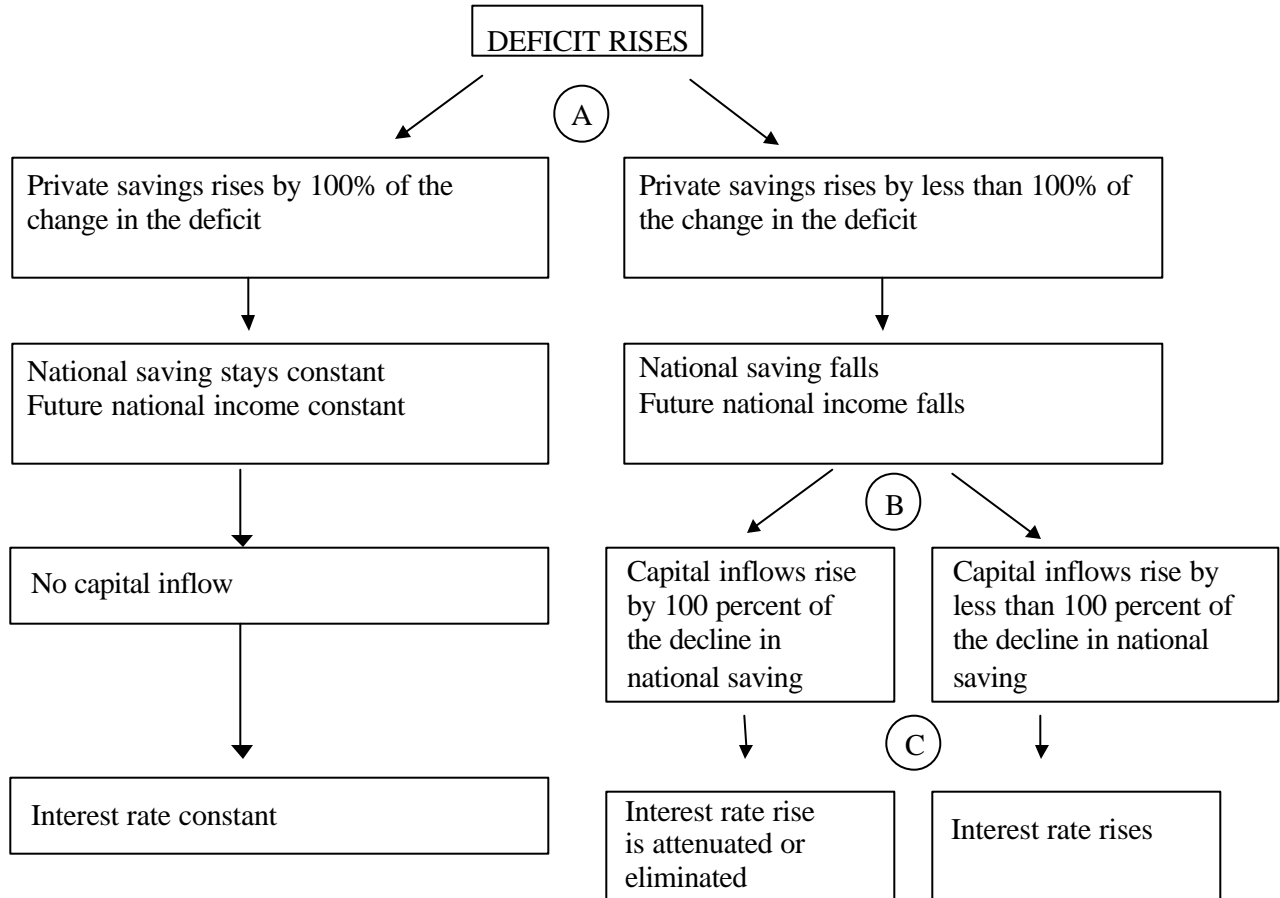
<sup>11</sup> The empirical evidence suggests only limited offsets from private savings in response to budget shifts. Although the precise amount of offset will depend on the specific policy that leads to the deficit, very few articles suggest that the offset will be complete or even close to complete. CBO (1998) concludes that private saving may offset 20 to 50 percent of a shift in the deficit. Elmendorf and Liebman (2000) suggest that private saving would offset about 25 percent of an increase in the deficit. Gale and Potter (2002) estimate that private saving will offset 31 percent of the decline in public saving caused by the 2001 tax cut, but the tax cut is only one or several reasons why the fiscal outlook deteriorated.

<sup>12</sup> Poterba (1998) estimates the pre-tax marginal product of capital to be 8.5 percent for nonfinancial corporate capital. Elmendorf and Mankiw (1999) suggest a more conservative estimate, 6 percent, for the return on aggregate capital.

<sup>13</sup> The projected U.S. population in 2012 is 304.8 million. (See [www.census.gov/population/www/projections/natsum-T1.html](http://www.census.gov/population/www/projections/natsum-T1.html)).

<sup>14</sup> Over the long-term, changes in net foreign investment flows are estimated to account for between 25 and 40 percent of changes in national saving, though that percent may be rising over time and may be higher for economically integrated European countries than for the United States. For specific studies, see, among others, Feldstein and Bacchetta (1991), Feldstein and Horioka (1980), Obstfeld and Rogoff (2000), and Blanchard and Giavazzi (2002). For an overview of such studies, see CBO (1997).

**Figure 1: Deficits, national income, and interest rates**



A: Evidence suggests that private saving rises by substantially less than 100 percent of the decline in public saving.

B: Most of the evidence suggests that most of the reduction in national saving manifests itself in reductions in domestic investment, though estimates vary.

C: The effects of deficits on interest rates are controversial. Our views are expressed in Gale and Orszag (2002). The main point for purposes of the current paper is that budget deficits that reduce national saving will reduce future national income (junction A) regardless of the relative strength of the effects of deficits on interest rates (junction C).

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