Economic Effects of Making the 2001 and 2003 Tax Cuts Permanent

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ABSTRACT

All of the provisions of the landmark tax cuts enacted in 2001 and 2003 are scheduled to expire by the end of 2010. This paper analyzes the economic effects of making the tax cuts permanent. We describe the recent tax cuts and the proposals to make them permanent, and explore the consequences of making the tax cuts permanent with regard to the fiscal status of the government, the distribution of after-tax income, and prospects for long-term economic growth.

I. Introduction

Tax policy has played a central role in the Bush Administration's economic policy. The 2001 tax cut phased in lower income tax rates, gradually reduced and will eventually repeal the estate tax, and provided additional subsidies for taxpayers who contribute to tax-preferred saving accounts, acquire education, are married, or have children. The 2003 tax cut provided new tax cuts for individuals' dividend and capital gains income, and accelerated the implementation of many of the changes enacted in 2001.[1] All of the provisions of these tax cuts, however, expire by the end of 2010 and some expire earlier. The Administration has repeatedly called for making almost all of the 2001 and 2003 tax cuts permanent.

This paper examines the consequences of making the tax cuts permanent.[2] Section II briefly describes the recent tax cuts and the proposals to make them permanent. It also discusses two issues that must be addressed in evaluation of permanent tax options: the alternative minimum tax, and the need to finance permanent tax cuts at some point with either spending cuts or other tax increases.

Section III examines the tax cuts in the context of overall federal fiscal policy. Even without making the tax cuts permanent, reasonable projections imply that the federal government faces sizable deficits over the next decade, and an unsustainable budget path over longer periods. Making the tax cuts permanent would significantly exacerbate these problems, reducing revenues over the next 75 years by an amount significantly larger than the projected shortfall in the Social Security trust fund over the same period. Although the Administration has not proposed any specific method of paying for the tax cuts, some simple calculations show that the spending cuts or revenue increases that would be required are substantial and well beyond the range of any recent policy discussion.

Section IV examines distributional effects. Making the tax cuts permanent would increase the disparity in after-tax income; most households would receive a direct tax cut, but after-tax income would rise by a larger percentage for high-income households than low-income households. Once the financing of the tax cuts is taken into account, however, the distributional effects will likely be even more regressive. For example, if the eventual policy adjustments made to finance the tax cuts impose burdens that are proportional to income, about 80 percent of households, including a large majority of households in every income quintile, will end up *worse* off after the tax cuts plus financing than before.

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[1] The Job Creation and Worker Assistance Act of 2002 provided substantial temporary incentives for new business investment (JCT 2002). These incentives were expanded slightly in the 2003 tax act, and are scheduled to expire at the end of 2004. Because these provisions were explicitly intended to be temporary, and are not included in the Administration's proposal to make the tax cuts permanent, (Office of Management and Budget 2004b), we do not examine the implications of making the 2002 tax cuts permanent.

[2] For other assessments of the Bush Administration's tax policies and the effects of making the tax cuts permanent, see Bartlett (2004), Rosen (2004), and Shapiro and Friedman (2004).

Section V examines the effects on long-term economic growth. The tax cuts offer the potential to raise economic growth by improving incentives to work, save, and invest. But the tax cuts also create income effects that reduce the need to engage in productive economic activity, and they subsidize old capital, which provides windfall gains to asset holders that undermine incentives for new activity. In addition, making the tax cuts permanent would raise the deficit over the medium-term, in the absence of any short-term financing. The increase in the deficit will reduce national saving -- and with it the capital stock owned by Americans and future national income -- and raise interest rates, which will negatively affect investment. The net effect of the tax cuts on growth is thus theoretically uncertain. Several studies have quantified the various effects noted above in different ways and used different models, yet all have come to the same conclusion: Making the tax cuts permanent is likely to reduce, not increase, national income in the long term unless the reduction in revenues is matched by an equal reduction in government consumption. And even in that case, a positive impact on long-term growth occurs only if the spending cuts occur contemporaneously, which has decidedly not occurred, or if models with implausible features (like short-term Ricardian Equivalence) are employed.

Section VI provides additional perspectives on making the tax cuts permanent by comparing the features of, and economic environment surrounding, the Reagan tax cuts to those currently in place. These comparisons suggest that the nation is much less able to sustain permanent tax cuts now than it was in the 1980s.

Section VII concludes by summarizing the key results. Most of the conclusions hinge on how and when permanent tax cuts would eventually be financed. The longer financing is postponed, the larger is the decline in national saving and in future national income. The greater the extent to which the tax cuts are financed through cuts in government consumption, the more advantageous is the effect on economic growth in most economic models, although reductions in some types of spending (e.g., on education) may harm long-term growth. Furthermore, the greater the reliance on spending reductions to finance the tax cuts, the more regressive are the tax cuts plus financing likely to be. We show that even if the tax cuts raise the size of the economy by 1 percent, which is large relative to all of the existing growth estimates, most households will still end up worse off after the financing of the tax cuts is considered than they would have been if the tax cuts had never taken place. Our focus on paying for the tax cuts, and the links between financing, fiscal policy, distributional effects, and growth, serve to reinforce the standard notion that there is no free lunch.

II. Background

The 2001 and 2003 tax cuts contain a host of tax provisions that phase in and expire at different times. In 2001, the Economic Growth and Tax Relief Reconciliation Act (EGTRRA) reduced and will eventually repeal the estate tax; cut the top four income tax rates; gradually repealed the phase-outs of personal exemptions and itemized deductions that apply at high incomes; carved out a new 10 percent tax bracket from part

of the existing 15 percent bracket; and temporarily boosted the exemption in the alternative minimum tax (described further below).[3] It also contained a variety of tax incentives for spending on education, including an above-the-line deduction for higher education expenses, expanded contribution limits for education IRAs, and expansion of subsidies in Section 529 college savings programs. The tax cut likewise expanded incentives for retirement saving in several ways, including allowing for higher contribution limits to Individual Retirement Accounts and 401(k) plans, creating back-loaded Roth 401(k)s, and creating a new saver's credit, which provides a progressive, non-refundable matching credit for contributions to 401(k)s and IRAs made by moderate-income households.[4]

In 2003, the Jobs and Growth Tax Relief Reconciliation Act (JGTRRA) cut individual tax rates on dividends and capital gains. JGTRRA also accelerated the scheduled reduction of the top four income tax rates enacted in 2001, accelerated the scheduled expansion of the 10 percent bracket and raised the AMT exemption, though the last two expansions were temporary and expire at the end of 2004.[5]

In its most recent budget, released in February 2004, the Bush Administration proposes to make permanent almost all of the features of the general income and estate tax cuts enacted in 2001 and 2003, with a few notable exceptions -- including the saver's credit (which expires in 2006), the education deduction (2006), and the AMT exemption (2005).[6] We examine the Administration's proposal in this paper, subject to adjustments for the alternative minimum tax and the need to finance permanent tax cuts.

A. The Alternative Minimum Tax

It is difficult to discuss permanent income tax changes sensibly without considering the alternative minimum tax (AMT).[7] The AMT operates parallel to the regular income tax, imposing different income definitions, allowable deductions, and rates. Taxpayers pay the AMT when their AMT liability exceeds their regular income tax liability.

The AMT grew out of a minimum tax that first took effect in 1970 to reduce sheltering opportunities for high-income households and ensure that all high-income

[3] See JCT (2001a, 2001b, 2001c), Gale and Potter (2002), Kiefer, et al. (2002) and Manning and Windish (2001) for descriptions of the 2001 legislation.

[4] See Gale, Iwry, and Orszag (2004) for an examination of the saver's credit.

[5] See JCT (2003a, 2003b). Gale and Orszag (2004) show how the various features, phase-ins, and expirations of the provisions of the 2001 and 2003 tax acts interact.

[6] OMB 2004b, page 246. In both 2001 and 2003, the Administration's proposed tax cuts were permanent. The Budgets presented in 2002 and 2003, as well as numerous Presidential speeches have also called for making the tax cuts permanent.

[7] See Burman, Gale and Rohaly (2003a, b), Poterba and Feenberg (2004) and Rebelein and Tempalski (2000) for discussion of the AMT.

households paid at least some income tax every year. Although it has historically applied only to a relatively few high-income taxpayers, the AMT is destined to grow rapidly under current law. By 2010, roughly 29 million (28 percent of) income tax payers will face the AMT in the absence of policy changes, up from about 3 million today (see Figure 1). The two primary reasons for the projected explosive growth of the AMT are that the tax is not indexed for inflation and that the 2001 and 2003 tax cuts reduced regular income tax liabilities, but provided only small, temporary adjustments in the AMT.

Because the projected expansion of the AMT will create problems relating to the efficiency, equity, and complexity of the tax code, it is widely believed that policymakers will not allow the massive projected increase in the AMT to occur. The Administration's prior tax cuts and its proposal to make the tax cuts permanent, however, do not address the long-term AMT problem. Under the Administration's proposal to make the tax cuts permanent, 40 million (35 percent of) taxpayers would face the AMT by 2014 (see Figure 1). Almost one-quarter of the income tax cuts from the 2001 and 2003 legislation would be erased by the AMT by 2009, and 36 percent by 2014, including almost 40 percent of the tax cuts for households with income between $75,000 and $100,000 and two-thirds for households with income between $100,000 and $500,000 (Table 1). If it is not amended in the future, the AMT would eventually erase all of the income tax cuts provided in the 2001 and 2003 legislation.

The presence of the AMT thus complicates analysis of making the tax cuts permanent. Assuming the AMT will evolve according to current law would imply massive increases in the number of AMT taxpayers and would artificially reduce the cost of the tax cuts, relative to a plausible policy scenario. At the other extreme, attributing *all* the cost of reforming the AMT to the tax cuts, despite the fact that the AMT would have been increasing even in the absence of the tax cuts, would greatly inflate the apparent cost of making the tax cuts permanent.

We address these concerns by measuring the effects of the 2001 and 2003 tax cuts assuming that the AMT is adjusted so that the number of taxpayers on the AMT in future years is the same as it would have been had the 2001 and 2003 tax cuts never taken place. That is, we ascribe as a cost of the 2001 and 2003 tax cuts the changes in the AMT that are needed to offset the increase in AMT participation caused by the 2001 and 2003 tax cuts.[8] The costs and consequences of these AMT adjustments are included in the analysis of revenue, distribution and growth effects from the tax cuts in subsequent sections.

[8] There are, of course, numerous ways to adjust the AMT in order to achieve this goal. We aim to conform as much as possible to recent trends in AMT policy choices and also to focus on extensions of current AMT expiring provisions. Hence, we assume that the use of nonrefundable credits in the AMT is made permanent (such use is currently scheduled to expire in 2004) and, conditional on that change, that the AMT exemption is raised in each future year so that the number of AMT taxpayers in that year is the same under the Administration's proposal to make the tax cuts permanent as it would have been under pre-2001 law in that year. We estimate the revenue effect of these AMT changes using the Tax Policy Center micro-simulation model, which is discussed further below.

This adjustment leaves about 21 million taxpayers on the AMT in 2014 (Figure 1), much more than the current 3 million, but much less than the 40 million that would face the tax if the AMT were allowed to evolve under current law and the tax cuts made permanent. Therefore, our assumptions do not impose all of the costs of eventually fixing the AMT on the 2001 and 2003 tax cuts. Rather, even after our adjustment, there is still a significant AMT problem for policymakers to address, but it is the same AMT problem that would exist in the absence of the 2001 and 2003 tax cuts.

B. Financing the tax cuts

A second issue that complicates the analysis is that permanent tax cuts must eventually be financed with some combination of other tax increases or spending cuts. It is possible to delay payment, of course. In 2001, for example, the Administration argued that the tax cuts would be "paid for" out of the surplus. Despite the conceptual and empirical problems with this claim (for example, see Auerbach and Gale 2001), the argument appears to have carried the day at that time. In 2003, the tax cuts were intended to boost a sagging economy, so deficit finance may have been a preferred option, at least in the short term. But tax cuts aren't free. The government's budget constraint implies that tax cuts must eventually be financed with increases in other taxes or reductions in government programs. Funding the tax cuts with increased borrowing postpones but does not eliminate the required tax or spending adjustments.

Some tax cut supporters argue that the payments can be postponed indefinitely. It is true that in a stable long-term economy, government debt can safely grow as fast as the economy. This consideration, however, is simply not relevant to the U.S. economy. As discussed in section III, under current policies, the ratio of federal debt to GDP is projected to explode over time, in the absence of other policy changes, even if the tax cuts were not made permanent. The Administration itself acknowledges that under its own policies, over the long-run "the budget is on an unsustainable path" (OMB 2004b, page 191). As a result, postponement of payment for the tax cuts can not go on forever.[9]

A different claim is that offsetting tax increases or spending cuts are not required because tax cuts can "pay for themselves" by raising economic growth and reducing tax avoidance and tax evasion. As discussed in section V, however, there is no credible evidence to support this view in the context of making the recent tax cuts permanent.

In short, if they are made permanent, the tax cuts will have to be paid for with either reduced future spending or increased future taxes, relative to what would have occurred in the absence of the tax cuts. This simple fact fundamentally alters analysis of the growth and distributional effects of tax policy. We examine the effects of a variety of financing assumptions below.

[9] Furthermore, even in the empirically irrelevant case in which government debt were *not* projected to grow more quickly than the economy, the tax cuts would not be free. In that theoretical case, no explicit increase in taxes or cut in spending would be required, but the resources used for the tax cuts could have been used for other purposes; there would still be a trade-off between tax cuts and other policy options.

III. Revenue and Budget Issues

Given the ubiquitous trade-offs between taxes and other uses of public and private funds, the interaction between tax cuts and the federal budget outlook provides a useful starting point for the analysis. Because the tax cuts have phased in gradually over time, and because making the tax cuts permanent would have long-lasting effects, a key issue is the time horizon employed. We examine budget issues over the 10-year horizon (employed in CBO's annual projections and in revenue estimates by JCT, CBO, and the Department of Treasury), and over longer horizons.

A. 10-Year Horizon

The top line of Figure 2 shows CBO's (2004a) baseline projections for the deficit in the unified budget as of March 2004. The projections assume that the 2001 and 2003 tax cuts expire as scheduled. CBO projects a 10-year baseline unified budget deficit of $2.0 trillion, or 1.3 percent of GDP, for fiscal years 2005 to 2014, with the deficits shrinking over time and almost disappearing by 2014.

The baseline projection is intended to provide a benchmark for legislative purposes. It is explicitly not intended to be a projection of actual or likely budget outcomes, or a measure of the financial status of the federal government (CBO 2004a). Thus, adjustments to the baseline are required to generate a more plausible budget scenario and to develop more meaningful measures of the fiscal status of the government (Auerbach, Gale, Orszag, and Potter 2003). One concern is that the baseline holds real discretionary spending constant over time. In a growing economy with an expanding population and evolving security needs, this assumption is not credible. A second concern is that the baseline assumes that all temporary tax provisions expire as scheduled, even though most have been routinely extended in the past.[10] A third concern is that the baseline assumes that the AMT follows current law, which as noted above, few observers regard as plausible. Finally, the baseline uses cash-flow accounting, which is appropriate for many programs, but which can distort the financial status of programs with liabilities that increase substantially outside the projection period.

Adjusting for these factors has an enormous impact on 10-year budget projections. Figure 2 shows that if (a) discretionary spending is allowed to grow with inflation and population, (b) the expiring tax provisions that are not related to extension of the 2001 and 2003 tax cuts are extended, and (c) the AMT problem is resolved by

[10] This statement refers to a number of provisions (often dubbed "the extenders" and including items such as tax credits for work opportunity or for research and experimentation) that have existed for years, are narrow in scope, have relatively minor budget costs, and for which extensions occur as a matter of routine. The "temporary" provisions having to do with 2001 and 2003 tax cuts are quite different in nature and scope. Whether they are extended is a major fiscal policy choice, not a matter of routine. See Gale and Orszag (2003a) for further discussion of expiring provisions.

indexing the AMT for inflation,[11] the adjusted unified budget deficit rises to 2.3 percent of GDP over the decade and 1.4 percent of GDP in 2014.

In addition, it is well-known that the Trust Funds for Social Security, Medicare Part A, and government employee pensions are projected to run surpluses over the next decade but face shortfalls in the long-term. Figure 3 shows that, outside the retirement trust funds, the rest of the federal government faces projected adjusted deficits of about 4.3 percent of GDP over the next decade and 3.3 percent of GDP in 2014.

In summary, figures 2 and 3 show that, even if the tax cuts are allowed to expire, the government faces significant unified budget deficits, and very large deficits in the budget not including retirement trust funds over the next decade. Relative to the figures above, the added revenue loss and budget effects (including the increased debt service payments due to higher levels of federal debt) of making the tax cuts permanent are shown in table 2. The top panel follows the Administration's proposal exactly, and so only adjusts the AMT exemption through 2005. Under these assumptions, relative to the already existing tax cuts, making the tax cut permanent would reduce revenues by an additional $1.2 trillion and increase deficits by $1.37 trillion.[12] Within the 10-year budget window, about 90 percent of the revenue loss occurs after 2009, since the bulk of the current tax cuts expire in 2010. By 2014, the Administration's proposal would reduce revenues by $301 billion, or 1.7 percent of GDP.

As discussed above, these revenue estimates understate the likely costs of making the tax cuts permanent since they do not make any long-term adjustment for the AMT. The second panel of Table 2 shows that the revenue loss from making the tax cuts permanent is much higher when the AMT is adjusted to hold the number of AMT taxpayers in each year the same under the President's proposal as it would have been under pre-2001 law for that year. With the AMT adjustment, making the tax cuts permanent would reduce revenues by $1.6 trillion; including debt service payments, the 10-year deficit would rise by almost $1.9 trillion. In 2014, the revenue loss would be $373 billion, or about 2.1 percent of projected GDP.

Figure 2 shows the added effects of making the tax cuts permanent (with the additional correction to the AMT) on the adjusted unified budget deficit. If the tax cuts are made permanent, the adjusted unified deficit would average 3.5 percent of GDP over the decade and would equal 3.6 percent of GDP in 2014. Figure 3 shows that, omitting the retirement trust funds, which face long-term deficits, the rest of the budget would face deficits of 5.4 percent of GDP over the decade, and 5.4 percent of GDP in 2014 if the tax cuts were made permanent. In 2014, the adjusted unified budget deficit would be almost $700 trillion and the adjusted non-retirement-trust-fund deficit would exceed $1 trillion.

[11] To ensure that our calculations of the cost of indexing the AMT do not overlap with the costs of the AMT adjustment noted in the previous section that are counted as a cost of the 2001 and 2003 tax cuts below, we calculate the costs of indexing the AMT for inflation using pre-EGTRRA law.

[12] Technically, making the tax cuts permanent would involve some relatively minor outlay increases—for example, for the refundable portions of the earned income credit and child credit—as well as revenue losses. Our discussion of "revenue losses" includes these direct outlay components.

Both measures would be growing relative to the economy.

B. Long-term horizon

As noted above, the retirement trust funds face short-term cash flow surpluses but long-term financial shortfalls. One way to control for these effects is to examine a 10-year horizon and separate the retirement trust funds from the rest of the budget as in Figure 3. An alternative is to extend the time horizon of the analysis so that future shortfalls are included.

To do this, we report estimates of the fiscal gap, the size of the immediate and permanent increase in taxes and/or reductions in non-interest expenditures that would be required to establish the same debt-GDP ratio in the long run as holds currently.[13] Results in Auerbach, Gale, and Orszag (2004) imply that, even if the tax cuts are *not* made permanent, the nation faces a long-term fiscal gap in 2004 of 5.1 percent of GDP through 2080 and 8.2 percent of GDP on a permanent basis.[14] In short, the government's budget path is unsustainable, even if the tax cuts are not made permanent. The Administration has made similar forecasts (OMB 2004b).

To examine the long-term budgetary effects of making the tax cuts permanent, we assume that the revenue loss remains constant as a share of GDP after 2014 and report the results in Table 3. Making the tax cuts permanent would reduce revenues (and raise the fiscal gap) by 1.8 percent of GDP through 2080 (and 1.9 percent over an infinite horizon, not shown). In present value, making the tax cuts permanent would reduce revenue by $9.2 trillion through 2080 (and $15.6 trillion over an infinite horizon). The overall effect of the tax cuts – including the cost before the tax cuts officially expire in 2010 or before – would reduce revenues by $10.2 trillion (2 percent of GDP) through 2080.[15]

To help put these figures in context, over the next 75 years, the actuarial deficit in the social security system is 0.7 percent of GDP under the Trustees' assumptions and 0.4 percent of GDP under new projections issued by CBO (2004d). Thus, if the 2001 and 2003 tax cuts were made permanent, the total discounted revenue loss through 2080 would be roughly three to five times as much as the actuarial shortfall in social security over the same period. The actuarial deficit in Social Security over an infinite horizon

[13] See Auerbach (1994). Over an infinite planning horizon, the requirement is equivalent to assuming that the debt-GDP ratio does not explode. Alternatively, the adjustments set the present value of all future primary surpluses equal to the current value of the national debt, where the primary surplus is the difference between revenues and non-interest expenditures. Auerbach, Gale, Orszag, and Potter (2003) discuss the relationship between the fiscal gap, generational accounting, accrual accounting and other ways of accounting for government.

[14] In perhaps more familiar terms, the primary deficit would be 2.6 percent of GDP in 2030, 4.6 percent in 2060 and 5 percent by 2080; the unified deficit would rise much faster because of accruing interest payments and would be 7 percent of GDP in 2030, 26 percent by 2060 and nearly 50 percent by 2080. Public debt would be 76 percent of GDP in 2030, 339 percent in 2060 and 680 percent in 2080.

[15] Auerbach, Gale, and Orszag (2004) estimate the long-term costs at 2.2 percent of GDP. The difference is mostly due to a different AMT adjustment.

amounts to 1.2 percent of GDP under the Trustees' assumptions, which is smaller than the 1.9 percent of GDP in revenue losses from extending the tax cuts over the same horizon, even without counting the costs of the currently legislated tax cuts. The deficit in the Medicare Part A trust fund is about 1.6 percent of GDP over the next 75 years. Thus, extending the tax cuts would reduce revenue over the next 75 years by an amount almost as large as the entire shortfall in the Social Security and Medicare Part A trust funds over the same period.

C. Implications

The analysis above shows that, even before consideration of making the tax cuts permanent, the federal budget faces substantial deficits over the 10-year horizons and is on an unsustainable long-term path. One implication is that tax cuts are not simply a matter of returning unneeded or unused funds to taxpayers. Rather, as discussed in section II, tax cuts represent a choice by current voters to require future taxpayers to pay for current spending, or to cut spending.

The Administration, however, has not proposed a financing mechanism for making the tax cuts permanent. In order to provide some insight into how the tax cuts could be financed, Table 4 shows the type of changes that would be necessary in 2014 to finance just the revenue losses (i.e., not the interest costs) in that year from making the tax cuts permanent. The options include a 45 percent cut in social security benefits; a 53 percent cut in Medicare benefits; complete elimination of the federal component of the Medicaid program; an 11 percent cut in all non-interest spending; a 49 percent cut in all spending other than interest, defense, homeland security, social security, Medicare and Medicaid; an 80 percent cut in all domestic discretionary spending; a 32 percent increase in payroll taxes; or a 117 percent increase in corporate tax revenues. It is fair to say that the implied spending cuts and revenue increases are well beyond the range of those currently in any public discussion.

A second implication of the fiscal outlook is to deflate the claim, often put forward by proponents of extending the tax cuts, that such extensions are necessary to reduce uncertainty (see, for example, Rosen 2004). The fundamental source of uncertainty surrounding spending and tax programs is the existence of a large long-term fiscal gap; households and firms do not know how or when that fiscal gap will be eliminated, as eventually it must be in order to avoid fiscal collapse. Making the tax cuts permanent increases the underlying fiscal gap and hence actually raises uncertainty by expanding the size of the gap that must eventually be closed. Given the size of the fiscal shortfall, making the tax cuts permanent may also raise legitimate questions about whether implicit or explicit default is a non-trivial possibility, which could spark further uncertainty, most notably in financial markets (Rubin, Orszag, and Sinai 2004).

D. Justifying the original tax cuts versus permanent tax cuts

The federal budget outlook has deteriorated substantially since 2001. In the winter of 2001, when President Bush took office and submitted his proposal (which

advocated a permanent tax cut), the projected CBO baseline surplus for 2002 to 2011 was $5.6 trillion (Figure 4).[16] As of March 2004, the projected baseline for the same period had fallen by $8.5 trillion to a *deficit* of $2.9 trillion.[17] This decline is equivalent to 6.5 percent of projected GDP over this period, and appears to be permanent; as Figure 4 shows, there is a substantial decline in every year of the projection period.[18]

In 2001, three principal fiscal claims were made to justify the tax cuts: the budget situation at that time made tax cuts affordable; tax cuts were needed to avoid paying off the entire marketable public debt in the near future; and tax cuts were needed as a way to "starve the beast" and thereby control government spending. It is questionable whether any of these claims were valid in 2001, and hence whether they truly justified the original tax cuts (see Gale and Orszag 2004a). The decline in the budget outlook, however, unambiguously implies that none of the original arguments are valid today and hence they can not be used to justify making the tax cuts permanent.

First, if making the tax cuts permanent was not affordable in 2001 -- and Congress not only balked at making the cuts permanent but also trimmed back the size of the President's proposal due to concerns about whether the $5.6 trillion in projected surpluses would materialize -- it is hard to see how it has become more affordable since then, given the deterioration in the budget outlook shown in Figure 4. Second, the prospect of paying off the public debt is obviously no longer a pressing policy concern, if it ever was one.[19] Federal debt is now projected to be 35 percent of GDP in 2014 in the CBO (2004a) baseline, which assumes the tax cuts are not made permanent, and it will grow rapidly in subsequent decades, as discussed above.

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[16] Other evidence at the time (Auerbach and Gale 2001, Congressional Budget Office 2000) shows that the nation already faced an unsustainable long-term fiscal position even before the tax cuts were enacted, due to the aging of the population and rising health care expenditures.

[17] The tax cuts, as legislated, explain about 28 percent of the decline. Changes in defense and homeland security and economic and technical changes account, respectively, for about 19 and 39 percent of the change. Other non-interest spending accounts for about 15 percent (CBO 2004b). These estimates assume the tax cuts expire as scheduled and the AMT is not adjusted. If instead the tax cuts are made permanent, both the magnitude of the fiscal decline and the share of the decline due to tax cuts would rise.

[18] As noted above, the baseline projection should not be taken at face value as evidence concerning the fiscal status of the government. However, the decline in the baseline budget projections shown in Figure 4 is mirrored in declines in adjusted 10-year budget projections (see Auerbach and Gale (2001) and Gale and Orszag (2004b)) as well as in long-term projections (see Auerbach and Gale (2001) and Auerbach, Gale, and Orszag (2004)) and so is a convenient way to summarize the deterioration of fiscal prospects.

[19] Federal Reserve Chairman Alan Greenspan (2001) argued that tax cuts were needed in 2001 to avoid having the government pay off all available marketable Treasury debt by 2006. Greenspan and others argued that the consequences of eliminating the market for Treasury bonds and of investing additional government surpluses in private assets were so costly that immediate tax cuts could be justified. An alternative view noted that the prospect of paying off the public debt required a continuation of high productivity growth, which was uncertain, challenged the view that paying off the public debt would cause the serious problems that Greenspan envisioned, and noted that even if the feared events did have significant costs, there was plenty of time to make the needed corrections in the future (Rivlin 2001, Gale and Potter 2002).

Third, the tax cuts have likely failed to restrain government spending. It is hard to believe that spending would actually have increased by much more than it did between 2000 and 2004 if the tax cuts had not been enacted. Discretionary spending rose from 6.3 percent of GDP in 2000 to 7.6 percent in 2003 and a projected 7.8 percent in 2004, while a massive new entitlement program (the Medicare prescription drug benefit) was also created (see Bartlett 2004 for further discussion). These spending increases are contrary to the so-called "starve the beast" theory that tax cuts reduce government spending, since the spending boom occurred during a period with several tax cuts and several other large downward revisions to the technical and economic components of the budget forecast.[20] Perhaps most importantly for purposes of evaluating whether the tax cuts should be made permanent, whatever resonance the "starve the beast" theory had in 2001 when the government ran current, cash-flow surpluses, current fiscal prospects as shown in Figures 2 and 3 already involve substantial deficits under plausible assumptions -- and thus the concomitant pressure to reduce spending -- even without making the tax cuts permanent.

IV. Distributional issues

A central issue in any tax reform is who wins and who loses. Both the optimal degree of redistribution and the best way to measure such redistribution are controversial. To measure distributional effects, we use the Tax Policy Center (TPC) micro-simulation model.[21] The model combines data from a public-use file of income tax returns and demographic information from the Current Population Survey to estimate the distribution of income, existing taxes, and proposed changes. The model employs the tax filing unit as the unit of analysis, and classifies the units by various measures of current income. The model's incidence assumptions and the resulting distribution of tax burdens are similar to those in models used by the Treasury Department, the CBO and the JCT.[22]

A. Measuring the distribution of tax changes

Our preferred measure of the distributional impact of a tax change is the *percentage change in income after adjusting for all federal taxes and accounting for*

[20] A variety of theoretical considerations, as well as evidence from historical budget deals and voting records, also suggest the "starve the beast" strategies are difficult to implement (see Gale and Kelly 2004, Gale and Orszag 2004a). Moreover, even if the starve-the-beast strategy "worked" in the sense that tax cuts restrained government spending and that such restraint was desirable, the result would not justify the *structure* of the Bush Administration tax cuts. Many components of government spending predominantly benefit low- and middle-income households (Steuerle 2001). On fairness grounds, a tax cut whose goal and/or effect is to cut spending should offset the negative impact on low- and middle-income households by giving them a disproportionately large share of the tax cut. The 2001 and 2003 tax cuts, however, do just the opposite—they benefit high-income households at the expense of all others.

[21] For details of the model, see http://taxpolicycenter.org/TaxModel/tmdb/TMTemplate.cfm?DocID=299.

[22] Specifically, in the TPC model, the burden of the income tax is assigned to the payer. The corporate income tax is borne in proportion to capital income received. Workers bear the burden of both the employer and employee portions of the payroll tax. The estate tax is assigned to decedents.

financing of the tax cut.[23] A tax change that gives everyone the same percentage change in take-home income (after controlling for the financing) is, in our view, distributionally neutral—it holds the distribution of after-tax income constant before and after the policy change. This choice emphasizes three crucial issues for developing sensible and robust estimates of the distribution of tax changes.

First, and most importantly, the financing of the tax cut should be included in the analysis because tax cuts eventually have to be paid for (and because we focus on long-run effects). Measures that ignore the need to finance a tax cut can create the misleading impression that everyone is made better off because the direct tax-cut benefits are included but the costs are ignored. In addition, as we show below, alternative measures of distributional benefits that yield seemingly contradictory conclusions when financing is ignored yield consistent conclusions when financing is included.

Second, our preferred measure focuses on percentage changes in after-tax income rather than on taxes per se. Measures like the percentage change in tax payments (emphasized by Rosen 2004) and changes in the share of income tax payments (emphasized by OMB 2004a) can generate nonsensical results, especially if financing is not included in the analysis, if some households have very small tax payments, no tax payments, or negative net taxes.[24] Likewise, if tax and spending options are to be compared, simply looking at the percentage change in taxes paid or the change in share of income taxes paid will not prove informative. When tax policies change income levels, a measure of changes in the level or share of taxes paid could actually give the wrong sign for whether taxpayers are better off. In sharp contrast, measures that focus on the percentage change in after-tax income generate sensible results in all of the situations above.

Third, our measure includes a wide range of federal taxes, including those on individual and corporate income, payroll, and estates. We show below that including only one tax can lead to misleading results if financing is ignored.

Although we emphasize the importance of controlling for the financing of tax cuts in distributional analysis, we first report results without including financing. These results are comparable to those that have dominated recent public discussions of these issues (see CBO 2004c for example).

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[23] Cronin (1999) and Gravelle (2001) reach a similar conclusion but do not include the financing element.

[24] For example, consider a two-person economy where one person earns $30,000 and pays $1 in taxes, and the other earns $40 million and pays $20 million in taxes. Now consider a tax cut that reduces the first person's taxes to zero and the second person's to $10 million. Focusing on percentage changes in taxes or share of taxes paid would require concluding that the first person got a bigger tax cut. Likewise, raising the first person's taxes from zero to $1 would be considered a bigger tax increase than raising the second person's taxes from $10 million to $20 million. Drawing these conclusions about the tax cut, however, would be nonsensical. Also, it is unclear how to deal with households who pay negative net taxes (because, for example, they receive refundable credits) using these approaches.

B. Distributional Effects Ignoring Financing

Table 5 reports a variety of distributional results for 2010, all of which exclude the financing of the tax cuts. If the 2001 and 2003 tax cuts are made permanent and the number of AMT taxpayers is held at levels that would have prevailed under pre-EGTRRA law, about 73 percent of tax filing units would receive a direct tax cut in 2010, with the share rising from only 16 percent of units in the bottom quintile to more than 99 percent in the top quintile.

The percentage change in after-tax income would rise as income rises, from 0.3 percent in the bottom quintile to 4.3 percent in the top quintile. It would rise even further within the top quintile, with a 6.4 percent increase for the top 1 percent (and a 7.5 percent increase for tax filing units in the top 0.1 percent, which is not shown). Thus, the tax cuts would raise after-tax income by a greater percentage for high-income households than for all others. This finding is reasonably interpreted as indicating that the tax cuts would favor high-income households.

Several other commonly used measures of the distributional effects also suggest that making the tax cuts permanent would be tilted toward high-income households in general and households in the top 1 percent in particular. The average tax rate would fall more for the top 1 percent than for any other group. Their share of the tax cut would exceed their share of tax burdens under pre-EGTRRA law, so that their share of all federal taxes paid would fall and the share of post-tax income received would rise. The average tax cut in dollars is 80 times as large for the top 1 percent as it is for households in the middle income quintile.

On the other hand, at least two commonly-used measures, if taken at face value, suggest that the tax cuts actually helped other households more than high-income households. First, households in the top 1 percent would receive an 13.3 percent reduction in their federal tax liabilities. This is more than the average reduction of 11 percent, but it pales next to the 18.2 percent reduction in federal tax liabilities experienced by households in the second income quintile. Second, households in the top 1 percent would actually pay a greater share of the *income* tax after the tax cuts than before (even though their share of all federal taxes fell).

Thus, at first glance, the distributional results in Table 5 present somewhat of a quandary. Many of the measures indicate that the tax cuts are skewed toward high-income households, but some suggest the opposite. As noted above, the measures that suggest that the tax cuts are not skewed toward high-income households can give misleading results when financing is ignored. As we show below, one way to remove the quandary is to incorporate the financing of the tax cuts in the analysis. When plausible methods of financing are included, the apparent contradictions are removed, and all of the measures show that the tax cuts are regressive.

C. Distributional Effects Including Financing[25]

The 2001 and 2003 tax cuts will be financed in the future by some combination of tax increases and spending cuts, but there is uncertainty over the exact programmatic changes to be employed. As a result, we examine two hypothetical scenarios. In both scenarios, the financing is set so that the annual costs of the tax cuts would be fully paid for in that year.

The first scenario assumes that each household pays the same dollar amount to finance the tax cuts. Under this scenario, each household receives a direct tax cut based on the 2001 and 2003 legislation (and the AMT adjustment), but it also "pays" $1,869 per tax unit (in 2010 dollars) in some combination of reductions in benefits from government spending or increases in other taxes. Something close to this scenario could occur if the tax cuts were financed largely or entirely through spending cuts. We refer to this as "equal-dollar financing," with results presented in Table 6.

The second scenario assumes that each household pays the same percentage of income to finance the tax cuts. In this case, each household receives a direct tax cut based on the 2001 and 2003 laws, but also pays 2.6 percent of its cash income each year. Something close to this scenario could occur if the tax cuts were financed through a combination of spending cuts and progressive tax increases. We refer to this as "proportional financing," with results presented in Table 7.

Under equal-dollar financing, *every* measure of the distributional effects shows that high-income taxpayers would gain and all other groups of taxpayers would lose if the tax cuts were made permanent (Table 6). Overall, *more than three quarters of taxpayers are made worse off* by the tax cuts plus equal-dollar financing, including virtually every household in the bottom 40 percent of the income distribution, 94 percent in the middle quintile and even 80 percent in the fourth quintile. In sharp contrast, 89 percent of taxpayers in the top quintile and 95 percent of households in the top 1 percent end up better off. The percentage change in after-tax income is negative for all groups below the top quintile, and positive for the top quintile. While 76 percent of households would face net tax increases (or spending cuts), households in the top 1 percent would receive average benefits of more than $54,000.

All of the other distributional measures show similar patterns, including the two metrics that showed different results when financing was ignored. When the financing was ignored (Table 5), households in the second quintile had substantial percentage cuts in federal taxes and high-income households had more modest cuts. When equal-dollar financing is included, however, households in the second quintile (and all of the bottom four quintiles) have net tax increases, with enormous net tax increases facing the bottom 40 percent of the distribution. In contrast, households in the top quintile have net tax cuts. Likewise, when financing was ignored, households in the top income group ended up paying a higher share of the income tax (even though they had the highest percentage increase in after-tax income and paid a smaller share of overall federal taxes). In sharp

[25] This section is based in part on Gale, Orszag, and Shapiro (2004). See also Steuerle (2003).

contrast, but consistent with common sense, households in the top income groups pay a sharply lower share of the income tax once equal-dollar financing is included (provided that the financing is included as part of the income tax).

Distributional effects that incorporate proportional financing yield similar results (Table 7). In particular, all of the measures indicate that high-income households benefit at the expense of other households, who lose in aggregate. About 80 percent of households would be worse off under the tax cuts plus proportional financing than they would be without the tax cuts, including a majority in every quintile. The percentage of tax units with a tax cut rises with income. The top quintile is the only group to receive a net tax cut, but even in the top quintile, almost two-thirds of all households in the 80th to 99th percentile face net tax increases. Both of the measures that gave anomalous results when financing was ignored – the percentage change in federal taxes and the share of income tax paid – now show that households in the bottom 80 percent of the income distribution are worse off on average, while those in the top quintile are better off.

Distributional analyses can also examine the status of particular groups defined by characteristics other than current income. For example, the 2001 and 2003 tax cuts are often described as "pro-family" because they expanded the child credit and reduced marriage penalties. Gale and Kotlikoff (2004) show that, controlling for income level, taxpayers with children received larger direct tax cuts than those without children. Table 8 shows, however, that under equal-dollar financing, 61 percent of families with children would be worse off if the tax cuts were made permanent, including 96 percent of such families in the lowest 40 percent of the overall income distribution and between 60 and 80 percent of such families in the third and fourth quintiles. Only in the top quintile are a majority of families with children better off. Under proportional financing, 56 percent of families with children would be worse off if the tax cuts were made permanent (see Gale and Kotlikoff 2004 for additional discussion).

A second group that has attracted significant attention in recent tax cut debates is small businesses, with the tax cuts being described as pro-entrepreneur. In its analyses of this issue, the Administration has defined any return with Schedule C, E, or F income as a small business. We adopt the same definition here, although we recognize its flaws (Burman, Gale and Orszag 2003). The distributional effects for taxpayers with business income are shown in table 9.[26] In the aggregate, taxpayers with business income would receive net tax cuts, even after financing, but most individual taxpayers with business income would see their burdens rise. Under proportional financing, 72 percent of tax filers with business income would be worse off, including more than 60 percent in the top quintile, and even 37 percent in the top 1 percent of the income distribution. Under lump sum financing, these figures are lower, but even so a majority (58 percent) of all tax filers with business income would be worse off, including almost all of such filers in the bottom 40 percent of the income distribution.

[26] The section on economic growth discusses the effects of the tax cuts on investment incentives for small businesses.

D. Criticisms and Responses

As noted earlier, distributional analysis is a controversial topic. This section address five potential criticisms of the analysis above: the exact method of financing is currently unknown; the analysis classifies households by annual rather than lifetime income; the calculations assume that contributions to social security are on a par with other taxes even though contributions and benefits are linked; the tables ignores the effects of the tax cuts on economic growth; and the analysis is based on flawed incidence assumptions. None of these potential criticisms seems likely to alter the key results.

First, although the exact method of financing is still unknown, the basic tenor of the results above is likely to be robust to reasonable adjustments in financing. The reason is that the 2001 and 2003 tax cuts significantly scale back or eliminate many of the most progressive features of the tax system, including the estate tax, dividend and capital gains taxes, and the highest marginal tax rates. Thus, low- and middle-income households are likely to come out as net losers under the tax cuts plus financing unless the financing affects high-income households far more than other households. Finding such a progressive offset is unlikely, unless the tax cuts for high-income households are directly repealed.

Second, there is little doubt that making the 2001 and 2003 tax cuts permanent would be regressive if measured on the basis of lifetime income instead of annual income. Households' current and lifetime income vary for two reasons: the life-cycle and transitory income. In all of the analyses we have done looking at particular age groups (not shown), which controls for life-cycle effects, the results are quite similar to those presented above. The major cuts in taxes on dividends and capital gains benefit precisely those groups with high lifetime incomes and in particular those with large holdings of equities, which tend to be the very wealthiest families in the country (Wolff 2002). Even after removing capital gains, which is a major source of transitory income, from the income measure, the vast majority of capital gains go to households with very high income (Lyon and Haliassos 1994). Indeed, the recipients of capital gains or dividend income that do have low current income, for example the elderly, probably have average lifetime income levels *higher* than their current income, so that classifying households based on current income in that case makes the tax cut look *less* regressive that it would be if households were classified by lifetime income. The estate tax, whether it is borne by decedents or inheritors, imposes burdens on very high-income groups (Joulfaian 1998, Gale and Slemrod 2001). Similar comments apply to the reductions in the highest income tax rates, the repeal of the phaseout of itemized deductions, and personal exemptions.

Third, questions about whether payroll taxes are really on a par with other taxes may be of interest for certain purposes, but they would not alter the key results above once financing is included. In particular, because payroll taxes are held constant in the analysis above, the fact that most households would be worse off after the tax cuts plus financing than they would be if the tax cuts had not existed is unaffected by the inclusion or exclusion of payroll taxes.

Fourth, it is possible to incorporate economic growth into the distributional analysis.[27] Table 10 shows the effects if the tax cuts raised each component of each tax unit's cash income by 1 percent. This increase significantly exceeds the growth effects estimated in all recent studies. As table 10 shows, when financing is ignored, the combination of the direct tax cut and the increase in income raises after-tax income by 4.5 percent. The growth in after-tax income is skewed toward higher-income households, but all groups obtain some direct benefit.

When financing is included, the aggregate change in after-tax income falls to 1.1 percent. More importantly for distributional purposes, *when the financing is included, most households would actually be worse off, even with a one percent increase in cash income, than they would have been without the tax cuts.* For equal-dollar financing, more than two-thirds of households are worse off, including almost everyone in the bottom 40 percent of the income distribution, almost 90 percent of those in the middle quintile and a majority of those in the fourth quintile. The bottom sixty percent of the income distribution would see declines in after-tax income, even though the economy grew. Under proportional financing, 60 percent of households would be worse off, the bottom 20 percent would see a decline in income, and the next forty percent would see only a very small (0.1 percent) increase in average after-tax income. Households in the top quintile would obtain the vast majority of all benefits. In summary, even a substantial economic growth effect is not sufficient to rescue most tax units from being worse off if the tax cuts were made permanent, once the financing of the tax cuts is included.

Fifth, the incidence assumptions in the TPC model are similar to those in models employed by the CBO, JCT, and Treasury. In particular, capital income taxes are borne by the recipient of the income and corporate income taxes are borne by capital owners. This is a completely plausible assumption for the short-term analysis of distributional effects typically undertaken with tax simulation models, but it may not be as appropriate in the longer term as the capital stock adjusts more completely to the change in tax policy (Council of Economic Advisers 2004). Ultimately, the long-term incidence of a cut in current capital income taxes depends on how the economy adjusts to the tax cut and hence on the economic growth effects discussed in the next section. Current capital income tax cuts that were financed by lump sum taxes would generally be expected to raise growth in almost all economic models. But current capital income tax cuts that are *deficit-financed* require increases in taxes or cuts in spending in the future. As shown in the next section, if capital income tax cuts today result in higher capital income taxes or higher wage taxes in the future, then the long-term size of the economy and the capital

[27] Ironically, this is only true because we focus on the percentage change in after-tax income. In contrast, many of those who argue that the tax cuts would raise growth (Rosen 2004, OMB 2004a) advocate the use of distributional measures – such as the percentage change in taxes and the change in the share of income taxes paid -- that are likely to imply conclusions about individuals' welfare that are of the wrong sign when growth is included. For example, the more a group's income rises because of the tax cuts, the more its taxes will rise (or the less they fall), and the greater the share of income tax the group would pay. Yet the group is better off, not worse off. One advantage of using the percentage change in after-tax income, our preferred distributional measure, is the ability to incorporate changes in income levels in a sensible manner.

stock will fall, and workers will be worse off due to the capital income tax cuts now. This is not accounted for in the tables and it suggests that the long-term regressivity of the tax cuts could be *understated* in the results above. If instead current capital income tax cuts are financed by reductions in government consumption, then the long-term effect on growth would be moderately positive, as described in the next section, and the results in table 9 would serve to describe the outcome.

V. Long-Term Economic Growth

A central issue in making the tax cuts permanent, embodied in the titles of the 2001 and 2003 tax acts, is their effect on economic growth and the future living standards of American households.[28] This section provides a variety of perspectives on this issue.

A. Taxes and Growth: Channels of Influence[29]

Over the long term, tax cuts influence the economy through several channels. First, they affect the behavior of individuals and businesses. The positive effects of tax cuts on growth arise because lower marginal tax rates raise the reward to working, saving, and investing. Holding real income constant, these lower marginal rates induce more work effort, saving, and investment through substitution effects. This is typically the "intended" effect of tax cuts on growth, and it is certainly the effect that is emphasized by advocates of tax cuts. But it is by no means the only effect, nor is it necessarily the largest effect.

Tax cuts may also provide positive income (or wealth) effects, which reduce the need to work, save, and invest. An across-the-board cut in income tax rates, for example, incorporates both effects. It raises the marginal return to work -- which raises labor supply through the substitution effect -- but it also raises a household's after-tax income at every level of labor supply, which reduces labor supply through the income effect. The net effect on labor supply is ambiguous. Similar effects also apply to saving.

Tax cuts or well-designed reforms may also reduce the extent to which taxpayers legally avoid and illegally evade taxes. This can improve the allocation of resources and hence raise economic growth even without increasing the level of labor and capital inputs.

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[28] Tax policy can affect the economy's underlying growth rate and/or create a one-time shift in the level of economic activity. Both effects change the size of the future economy and will be considered to imply an effect of taxes on economic growth.

[29] The tax cuts' effect on long-term growth is distinct from their ability to stimulate the economy in the short-run. In the short run, in an economy operating with excess capacity, increases in aggregate demand can raise output and income even without increasing the capital stock. In the long run, however, economic expansions reflect increases in the capacity to generate income through technological change and increased supply, and better allocation, of labor and capital. Gale and Orszag (2004a) and Zandi (2004) discuss the short-run stimulative effects of the tax cuts.

Besides their effects on private agents, tax cuts also affect the economy through changes in federal finances. In the absence of other policy changes, tax cuts are likely to raise the federal budget deficit, which in turn is likely to reduce national saving, and hence the capital stock owned by Americans and future national income. The increase in the deficit is also likely to raise interest rates. These changes – lower national saving and the associated increase in interest rates – create a fiscal drag on the economy's ability to grow. Eventually, though, any permanent tax cut must be financed by some combination of future spending cuts or future tax increases, and those policy changes will influence the effect of the original tax cut on economic growth. Because fiscally unsustainable policies can not be maintained forever, the future financing of a tax cut must be incorporated into analyses of the effect of the tax cut itself.

Federal tax cuts can also generate responses from other governmental entities -- including the central bank, state governments, and foreign governments. In particular, the potential responses of foreign governments are often overlooked. Cuts in U.S. taxes that induce capital inflows from abroad, for example, may encourage other countries to reduce their taxes to retain capital or attract U.S. funds. To the extent that other countries respond, the net effect of capital income tax cuts on growth will be smaller than otherwise.

In summary, while there is no doubt that tax policy can influence the economy, it is by no means obvious that a tax cut will ultimately lead to a larger economy. A fair assessment would conclude that well-designed tax policies can raise growth, but there are many stumbling blocks along the way, and certainly no guarantee that all tax cuts will improve economic performance.

B. Were the 2001 and 2003 Tax Cuts Well-Designed for Growth?

Given the various channels through which tax policy affects growth, a growth-inducing tax policy would involve (i) minimal increases in the budget deficit, to avoid the long-term fiscal drag created by lower national saving and higher interest rates, and (ii) large substitution effects and small income effects, the latter including a careful targeting of tax cuts on *new* economic activity, rather than providing windfall gains for previous activities. The 2001 and 2003 tax cuts score poorly on both criteria.

If they are made permanent, the entire 2001 and 2003 tax cuts will increase the federal debt by about $4.3 trillion in 2014, or by 25 percent of GDP in that year. This will significantly reduce income and raise interest rates in that year and future years and hence make the environment for long-term growth more difficult.

For example, President Bush's Council of Economic Advisers (2003, Box 1-4) reports that "one dollar of [public] debt reduces the [domestic] capital stock by about 60 cents." The CEA calculations imply that the domestic capital stock will fall by $2.6 trillion by 2014 because of the deterioration in the fiscal outlook attributable to the tax cuts if they are extended, even without taking into account the greater foreign ownership of that capital. If the return to capital is 6 percent, then GDP will be lower in 2015 by

$152 billion than it otherwise would have been, or about 0.8 percent of projected GDP (see CBO 2004a), because of the effects of the tax cut on the deficit. More importantly, since private saving would plausibly offset perhaps one-quarter of the increase in public debt,[30] the capital stock owned by Americans would decline by $3.2 trillion (75 percent of the $4.3 trillion in additional public debt), so that national income in 2015 will be $190 billion lower (slightly more than 1 percent of projected GDP). This translates into a cost of more than $1,000 per household in that year alone.

In addition, recent estimates by Engen and Hubbard (2004) imply that an increase in the ratio of the public debt to GDP by 1 percentage point raises real interest rates by 3 basis points. If so, the deficits created by the 2001 and 2003 tax cuts, if they are made permanent, would raise interest rates by 75 basis points in 2014 and reduce investment. Our own estimates, in Gale and Orszag (2004d), find that real long-term interest rates rise by between 44 and 67 basis points per percent of GDP in increased primary deficits. Since the tax cuts (including the costs before extension and thereafter) raise the primary deficit by about 2 percent of GDP, our findings suggest that the impact on interest rates is somewhere between 80 and 130 basis points.

Notably, the adverse effects of the accumulated public debt on national saving and interest rates would persist in years after 2014. As a result, the deficits created by the tax cuts create both a drag on future growth prospects, and a large hurdle for the tax cuts to overcome in order to raise economic growth. Unfortunately, the rest of the tax cut is not well-designed to overcome these obstacles.

In particular, the effects of the tax cuts on marginal tax rates are surprisingly small. Using the Treasury Department's tax model, Kiefer, et al. (2002) show that the 2001 tax cut, when fully phased-in, will provide no reduction in marginal tax rates for 76 percent of tax filing units (including non-filers), 72 percent of filers, and 64 percent of those with positive tax liability would receive no reduction in marginal tax rates. These taxpayers account for 38 percent of all taxable income. Kiefer, et al. found that the marginal tax rate on *taxable* wages, interest, dividends, and sole proprietorship income fell by between 1.6 and 2.4 percentage points. The *economy-wide* reduction in taxes on capital income, however, is likely to be significantly smaller, since a substantial share of such income flows to non-taxable entities like pension funds and non-profits. For example, CBO (2001) found economy-wide declines of just 0.5 percentage points for capital income and 1.6 percentage points for wage income. Our calculations using the TPC microsimulation model indicate that, if both the 2001 and 2003 tax cuts were made permanent (with the AMT adjustment noted above), 60 percent of filers, who collectively represent more than 40 percent of taxpayers and report 30 percent of all taxable income, would not see a reduction in marginal tax rates, relative to pre-EGTRRA law. Households that do not receive reductions in marginal tax rates are typically either on the AMT or in the 15 percent bracket. The small reduction in marginal tax rates suggests

[30] For example, the Congressional Budget Office (1998) concludes that private saving would rise by between 20 to 50 percent of an increase in the deficit. Elmendorf and Liebman (2000) conclude that private saving would offset 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.

that the positive incentives from the tax cuts on labor supply, saving, investment, and so on are likely to be small as well.

In addition to modest incentive effects, the tax cuts also created positive income effects that will hurt labor supply, saving, and investment, in at least two ways. First, the creation of the new 10 percent bracket, and the expansion of the child credit generate positive income effects for all income tax payers with children; the marriage penalty relief provisions generate positive income effects for many married taxpayers. Calculations using the TPC microsimulation model indicate that if the tax cuts were made permanent (and the AMT adjusted), 44 percent (50 million) of all filers with an income tax cut, representing 34 percent of taxable income, *would* receive a net tax cut but would *not* receive a reduction in marginal tax rates on wages. Of these, 7.7 million actually face increases in marginal tax rates. All of these households would receive positive income effects but either no substitution effect or a negative substitution effect. For all of these households, the tax cuts would likely reduce labor supply.

Besides not reducing marginal tax rates substantially and creating positive income effects but not substitution effects for many taxpayers, the 2001 and 2003 tax cuts did not do a good job of targeting new investment. The key issue is that the reductions in dividends and capital gains taxes reward not only new investment, but also the returns to old investment. Hence, much of their potential impact on growth is diluted by providing windfall gains to owners of existing capital.[31]

In summary, the 2001 and 2003 tax cuts contain many significant anti-growth features. They create large deficits, which burden the economy with lower national saving and higher interest rates. They provide small reductions in marginal tax rates, especially on capital income, blunting the potential positive incentive effects. They create positive income effects, but no substitution effects, for a substantial number of taxpayers, which actively discourages labor supply and saving. They create windfall gains for the owners of old capital, which further discourages productive supply-side responses.

C. Aggregate Analyses

Formal analyses confirm the intuition developed above that the tax cuts are poorly designed to stimulate long-term growth. Auerbach (2002) uses an overlapping generations life-cycle model (developed in Auerbach and Kotlikoff 1987) to examine the long-term effects of the 2001 tax cuts, noting that they must eventually be financed with either tax increases or spending cuts. He shows that the long-term effects on the size of the economy depend on when the financing begins and what form the financing takes. If the financing begins after 10, 15, or 20 years and takes the form of increased wage taxes or capital taxes, the net effect will be to reduce the long-term size of the economy. After

[31] For example, studies of the effects of consumption taxes on growth show that whether a windfall gain is provided to owners of existing capital in the transition to a new system has a very large impact on the effects of tax reform on long-term growth. See, for example, Altig et al (2001).

20 years, the economy is smaller under each of these scenarios by between 0.4 and 1.2 percent. In the long term (about 150 years), the decline in the size of the economy ranges between about 0.6 percent and more than 2 percent. The tax cuts could also be financed with spending cuts. However, even if half of the tax cuts are financed *immediately upon enactment* with reductions in government consumption, and the remaining shortfall is made up beginning 10 years after enactment with capital income taxes, the long-term capital stock per capita is still lower than it would have been in the absence of the tax cut. Only if the *entire* tax cut is financed by *immediate* reductions in government consumption – so that the tax cut does not create any deficits to begin with and does not reduce government investments in, say, health, human capital, or infrastructure – does the tax cut raise the capital stock per capita, and even in that case, the long-term increase is just 0.5 percent.

Two other studies use large macroeconometric models to examine the long-term effects of the tax cuts.[32] Elmendorf and Reifschneider (2002) use a rational-expectations, open-economy model based on the Fed model of the economy. Although their main focus is on the short-term effects of tax cuts, they also show that their model implies that a sustained cut in personal income tax rates would reduce the long-term size of the economy relative to the baseline. A recent analysis by Zandi (2004) reaches similarly pessimistic conclusions about the long-term effects of making the tax cuts permanent.[33]

The most comprehensive aggregate analysis of the long-term effects of tax cuts was undertaken by 12 economists at CBO (Dennis et al 2004). This study examines the effects of a generic 10 percent statutory reduction in all income tax rates, including those applying to dividends, capital gains, and the alternative minimum tax. Although the authors do not examine the 2001 and 2003 tax cuts per se, the study is quite useful for evaluating making the tax cuts permanent. In particular, because the CBO study focuses on "pure" rate cuts, rather than the panoply of additional credits and subsidies enacted in EGTRRA, the growth effects reported probably overstate the impact of making the 2001 and 2003 tax cuts permanent. In their analysis, *every* tax payer receives a reduction in marginal tax rates, so 100 percent of taxable income is affected, as opposed to 62 percent, for example, under EGTRRA, as discussed above. As Dennis et al (2004) note "the reduction in marginal tax rates is large compared with the overall budget cost."

[32] House and Shapiro (2004) provide an interesting analysis of how the tax cuts might have had stronger short-term effects if they had been phased-in more quickly, but their analysis assumes every tax change is financed by changes in lump-sum taxation, and so does not address the long-term effects of the deficits that would be created by making the tax cuts permanent.

[33] Zandi (pages 7, 9) states that: "Optimism that if the President's tax cuts are made permanent that they would create powerful incentives for more investment and harder work and thus ultimately more tax revenues and an improving long-term fiscal situation is misplaced....Deficits of the size that would ensue if the tax cuts are made permanent will have serious negative long-term economic implications...Investment, productivity growth, and ultimately the nation's living standards would all be measurably weaker, and a more substantive fiscal crisis would eventually ensue."

The study uses three different models to examine the long-term effects: a closed-economy overlapping generations (OLG) model; an open economy OLG model; and the Ramsey model. The authors assume that the tax cuts are financed either by reductions in government consumption or increases in tax rates that begin after 10 years and increase gradually for another 10 years and then are stabilized. Thus, deficits are allowed to build for the first decade of the tax cut and much of the second decade as well.

The results are reported in Table 11.[34] In the three scenarios where the tax cuts are financed by increases in income taxes, the long-term effects are generally negative. In the Ramsey model and the closed economy overlapping generations (OLG) model, GDP (and GNP) falls significantly.

In the open economy, OLG model, GDP rises slightly, but GNP falls by even more than in the other models. The chain of events creating this outcome is that the tax cuts reduce national saving and hence increase capital inflows. The inflow, in conjunction with increased labor supply, is sufficient to slightly raise (by 0.2 percent) the output produced on American soil. The capital inflows, however, must eventually be repaid and doing so reduces national income (GNP), even though domestic production rises. Ultimately, of course, future living standards of Americans depend on GNP, not GDP (Elmendorf and Mankiw 1999).

In the three scenarios where the tax cuts are financed with cuts in government consumption, the effects are less negative. In the closed-economy OLG model, there is virtually no effect on growth. In the open-economy OLG model, GDP rises by 0.5 percent in the long-run, but GNP falls by 0.4 percent.[35]

The sole exception to these results occurs when the tax cuts are financed by reductions in government purchases and the policy is run through the Ramsey model, in which case long-term GDP would rise by about 0.8 percent. However, as the authors note (Dennis et al, 2004, page 9), the Ramsey model implies that the reduction in government saving due to the tax cuts in the first decade is matched one-for-one with increases in private saving. Empirical evidence rejects this view (see Gale and Orszag 2004d).[36]

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[34] We thank David Weiner and Robert Dennis for providing the GNP results, which are not provided in the report.

[35] These findings are consistent with CBO Director Douglas Holtz-Eakin's statement that the net effect of the tax cut on long-term growth would be "modestly negative" (Catts 2004. See also Andrews 2004 and Weisman 2004).

[36] Besides the studies noted in the text, a number of studies have examined the effects of the tax as legislated, as opposed to permanent tax cuts. CBO (2003b, page 45) finds that "The revenue measures enacted since 2001 will boost labor supply by between 0.4 and 0.6 percent from 2004 to 2008 and up to 0.2 percent in 2009-2013….but the tax legislation will probably have a net negative effect on saving, investment, and capital accumulation over the next 10 years...The laws' net effect on potential output ....will probably be negative in the second five years." The Joint Committee on Taxation (2003) estimated that a plan very similar to the 2003 tax cut would boost GDP in the short-run, but would end up *reducing* GDP relative to the baseline in the second half of the decade. Although the JCT does not report results

D. "Bottom-up" or sectoral analyses

"Bottom up" analyses (the terminology is due to Slemrod 1995) obtain estimates of the growth effects of tax cuts by examining the effects on each sector and summing the effects. These studies also offer the chance to focus on particular sectors of the economy.

Our previous work in this area has concluded that the 2001 tax cuts would generate negative effects on long-term growth. Orszag (2001) used estimates from Gruber and Saez (2000) on the elasticity of "broad" income, a concept similar to national income, with respect to marginal tax rates. That elasticity suggested a positive effect of 0.4 to 0.5 percentage points in 2012 from the reduced marginal tax rates contained in an early version of the 2001 tax cut. Orszag then compared that positive effect to the negative effect on future national income from the reduced national saving associated with deficit-financing of the tax cut. He concluded that the net effect was likely to be a small reduction, of 0.1 to 0.5 percentage points, in national income in 2012.

Gale and Potter (2002) estimate the long-term effects of making the 2001 tax cut permanent. They combine estimates of the changes in incentives provided by the tax cut with estimates of how tax incentives affect saving, investment, labor supply, and human capital accumulation. They find that these "supply side" effects will raise the size of the economy by almost 1 percent by 2011. As noted above, however, the supply-side effects are not the only channel through which the tax cuts will operate. Gale and Potter also estimate that the increase in the deficit, due to the tax cuts, will reduce national saving, and the reduction will cause GDP to decline by about 1.6 percent by 2011. After allowing for capital inflows, based on historical relationships, Gale and Potter (2002) estimate that the net effect would be to reduce GDP by about 0.3 percent by 2011.

An important earlier study by Engen and Skinner (1996) estimates that a generic 5 percentage point reduction in marginal tax rates would raise annual growth rates by 0.2-0.3 percentage points for a decade. This calculation is often invoked by supporters of the Administration's tax cuts (see Calomiris and Hassett 2002 and Rosen 2004), but it is entirely inappropriate to apply these effects to EGTRRA and JGTRRA. First, the tax cut that Engen and Skinner examine is immediately financed by immediate reductions in government consumption; there is no fiscal drag created by deficits. Second, the 5 percentage point drop in effective marginal tax rates that they analyze is roughly 3 (10) times the size of the cut in effective economy-wide marginal tax rates on wages (capital income) induced by EGTRRA and JGTRRA, as noted above.[37]

Further insights on the growth effects of making the tax cuts permanent can be derived from considering how making the tax cuts permanent would affect would affect

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beyond the 10-year window, the language implies that the growth effect would continue to decline (see Burman, Gale, and Orszag 2003).

[37] See Gale and Potter (2002) for additional discussion of the Engen and Skinner results and differences between the tax cuts they analyze and the recent tax changes.

the level of investment, the allocation of capital, and the extent of entrepreneurial activity. Tax cuts have offsetting effects on the cost of new investments, with marginal tax rate cuts reducing, and higher interest rates from deficits increasing, the cost of capital. Gale and Potter (2002) show that if EGTRRA were to raise interest rates by 50 basis points, the cost of capital would rise for corporate equipment and structures, non-corporate equipment and structures, and owner-occupied housing**.** By 2014, EGTRRA, if extended, would increase the public debt by just over $3.4 trillion, or about 19 percent of GDP in 2014. This implies an interest rate increase of 57 basis points using the Engen and Hubbard (2004) estimates noted above, and even larger amounts using the Gale and Orszag (2004d) estimates noted above. In recent work (Gale and Orszag 2004c), we show that the net effect of making EGTRRA and JGTRRA permanent would be to raise the cost of capital once the interest rate effects are taken into account. These findings imply that making the tax cuts permanent would reduce the long-term level of investment.

Normally, less investment would imply less output. Making the tax cuts permanent, however, may improve the long-term *allocation* of the capital stock between corporate and non-corporate uses, which might raise output even with the same or lower level of investment. In particular, the dividend and capital gains reductions could help to reduce biases in the allocation of capital by reducing the generally higher tax imposed on capital invested in the corporate sector.[38] Although precise estimates are not available, even supporters of the 2003 tax cut acknowledge the benefits of improved allocation of capital are likely to be small.[39] For example, former CEA chair Glenn Hubbard suggested in a speech at the American Economic Association in January 2004 that the allocative improvements induced by the Administration's original proposal would raise the long-term level of GDP by 0.2 percentage points (Hubbard 2004). The dividend and capital gains tax proposal that was actually enacted, however, is inferior to the original proposal, since it does not ensure that corporate income is taxed at least once. The allocative efficiency gains are therefore likely be smaller under the enacted tax cut than under the Administration's proposal.[40] Gravelle (2003) and Zandi (2004) conclude that the net benefits of the dividend and capital gains tax cuts are likely to be quite small, if positive at all.

Although tax cut supporters frequently claim that making the tax cuts permanent would help entrepreneurs, the likely effect is more complex. Small businesses would be

[38] Although see Gale and Orszag (2003b) and Burman, Gale and Orszag (2003), for concerns about the ability of the enacted dividend cuts to resolve the double taxation problem, and see Flaschetti and Orlando (2003) and Rubinger (2004) for analyses of how the new treatment of dividends could adversely affect corporate governance and create new tax shelters, respectively.

[39] The Council of Economic Advisers (2003, page 204) suggested that under the Administration's original dividend proposal, the improved efficiency would generate gains equal to between .08 percent and 0.5 percent of GDP (Economic Report of the President 2003, page 204).

[40] In any case, even if the 0.2 percent increase in long-term output -- which as noted is probably an overestimate of the effects of the actual policy adopted -- is added to "bottom up" estimates in Orszag (2001) or Gale and Potter (2002), the net effects would be roughly a zero effect on long-term growth.

doubly hurt. Not only would interest rates rise, but—as noted above—the dividend tax would shift investment funds away from non-corporate businesses, where entrepreneurs are disproportionately located, and toward C corporations.

The literature does not speak with a clear view on whether lower tax rates raise or reduce the desirability of becoming an entrepreneur. Several studies find that higher tax rates raise (or do not reduce) the likelihood of entry into self-employment and reduce (or do not raise) the likelihood of exit from self-employment (See Gentry and Hubbard 2004 for a review of the literature.) Gentry and Hubbard (2003) estimate that increased convexity (progressivity) in the tax structure will reduce entrepreneurial activity. Carroll et al (1998a, 1998b, 2000) estimate that the tax reform act of 1986 raised the investment, hiring, and income growth of small businesses. This finding is difficult to apply to the effects of making the 2001 and 2003 tax cuts permanent, however, because TRA 86 involved larger reductions in marginal tax rates and was revenue-neutral. Cullen and Gordon (2002) note several interactions between entrepreneurial activity and tax rates, including the option that small business owners have to incorporate in order to shelter funds. They find that the direct tax effects of the 2001 tax act reduced self-employment by about one-sixth. They also find that cutting the capital gains tax rate raises entrepreneurial activity, and higher interest rates reduce such activity. A rough summary of the Gordon-Cullen effects suggests that the net effects of making EGTRRA and JGTRRA permanent would be a wash for entrepreneurial activity.

E. Other Evidence on Taxes and Growth

The argument that tax cuts raise growth is repeated so often that analyses that show or claim the opposite are often rejected out of hand. The earlier sections, however, provide both the logic and the evidence that suggests that making the 2001 and 2003 tax cuts permanent would probably harm long-term growth. In this section, we present seven additional perspectives suggesting that tax cuts need not raise economic growth and that poorly designed tax cuts could well reduce it.

Perhaps most strikingly, historical data show huge shifts in taxes with no observable shift in growth rates. From 1870 to 1912, the U. S. had no income tax and tax revenues were just 3 percent of GDP. From 1947 to 1999, the highest income tax rate averaged 66 percent, and federal revenues were about 18 percent of GDP. In addition, estate and corporate taxes were imposed at high marginal rates and state taxes rose significantly over earlier levels. Nevertheless, the growth rate of real GDP per capita was identical in the two periods (Gale 2002). In formal tests, Stokey and Rebelo (1995) find no evidence of a break in growth patterns around World War II. Obviously, many factors affect economic growth rates, but if taxes were as crucial to growth as is sometimes claimed, the large and permanent historical increases in tax burdens and marginal tax rates might be expected to appear in the aggregate growth statistics.

Empirical studies of the growth effects of actual U.S. tax cuts are relatively rare, in part because the U.S. had only one major tax cut between 1965 and 2000. Feldstein (1986) and Feldstein and Elmendorf (1989) find that the 1981 tax cuts had virtually no

net impact on economic growth. This may be surprising, given the incentives created by the large marginal rate cuts embodied in the 1981 tax cut. But the rate cuts also entailed income effects, and the act increased tax sheltering activities and the budget deficit, all of which militates toward negative effects on growth.

Cross-country studies find very small long-term effects of taxes on growth among developed countries.[41] Mendoza, et al. (1997) and Garrison and Lee (1992) find no tax effects on growth in developed countries. Padovano and Galli (2001) find that a 10 percentage point reduction in marginal tax rates raises the growth rate by 0.11 percentage points in OECD countries.[42] Engen and Skinner (1992) find significant effects of taxes on growth in a sample of 107 countries, but the tax effects are tiny and insignificant when estimated on developed countries.[43]

Simulation models offer a third approach to examining tax cuts. A simple extrapolation based on earlier published results from the Federal Reserve Board model of the U.S. economy implies that a cut in income tax rates that reduces revenues by 1 percent of GDP will raise GDP by 0.1 percent after 10 years (Reifschneider, et al., 1999) if the Fed follows a Taylor (1993) rule for monetary policy.

Another source of evidence is simply asking economists what they think. In a recent survey of 134 public finance and labor economists, the estimated median effect of the Tax Reform Act of 1986 on the long-term size of the economy was 1 percent (Fuchs, et al., 1998). Note that TRA 86 did not reduce public saving, so the growth effect was entirely due to changes in marginal tax rates and the tax base. The median response also suggested that the 1993 tax increases had no effect on economic growth. The 1993 act raised tax rates on the highest income households, but also increased national saving.

A final approach considers simulations of the growth effects of fundamental tax reform. Altig, et al. (2001) develop the most complete model of tax reform and find that a flat tax with transition relief would raise national income by 0.5 percent after 15 years. Without transition relief, the flat tax would impose a one-time wealth tax, and the economy would grow by 2.2 percent over 15 years. This comparison suggests that the bulk of the growth effects of consumption taxes are due to one-time wealth effects that might be imposed rather than the much-publicized changes in economic incentives at the margin.[44] This in turn suggests that the effects of the much smaller effective tax rate

[41] See Slemrod (1995) for a critique of the literature. Blanchard and Perotti (1999) provide additional evidence but focus on short-term effects.

[42] Folster and Henrekson (2001) find no tax effects on growth in OECD countries. When they extend the sample to include high-income, non-OECD countries, they find a significant effect. But the regressions using tax variables do not control for spending, so it is not clear what the tax variable is capturing.

[43] Engen and Skinner (1992, table 4, column 4). Statistical insignificance might be attributed to the fact that there are only 21 developed countries, but several of the other variables—including investment rates, initial income, labor force growth, and government spending growth—continue to be estimated precisely in the sample of developed countries.

[44] See also Auerbach (1996), Joint Committee on Taxation (1997), and Judd (2001).

reductions involved in the 2001 and 2003 legislation would be much less significant.

VI. Comparison with the Reagan Tax Cuts

Given the fiscal, distributional, and growth effects of making the 2001 and 2003 tax cuts permanent noted above, it is worth putting these tax cuts into some historical perspective. The most natural comparison is with the Economic Recovery Tax Act (ERTA) of 1981, championed by Ronald Reagan.

When measured against comparable baselines, the Reagan and Bush tax cuts were about the same size—about 2 percent of GDP. This comparison is complicated by two factors. First, the tax code was not indexed to the price level before 1985, generating a natural upward "creep" in tax collections over time, as inflation pushed individuals into higher tax brackets. This means that some "tax reductions" were really just offsetting the effects of inflation. Second, realizing that the 1981 tax cut was excessively costly, the Reagan Administration worked to scale it back one year later. The Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) increased revenue significantly.[45] The revenue costs of ERTA, measured against an inflation-indexed baseline and net of the revenue increase in TEFRA, amounted to about 2.1 percent of GDP (Orszag 2001). Thus, under reasonable interpretations of the size of the Reagan tax cuts, the recent tax cuts are approximately the same size.

Although the tax cuts were similar in magnitude, the nation was much better prepared to deal with large tax cuts and fiscal deficits in the 1980s and early 1990s than it is now. The retirement of the baby boomers is 20 years closer now, giving the budget little time to recover before the fiscal pressures begin in earnest. Private saving was significantly higher in the early 1980s than it is now, public debt was a smaller share of GDP, and the United States was an international creditor then, but a substantial international debtor today (Gale and Orszag 2003c).

In addition, the economic benefits of tax cuts were likely higher in 1981, for three reasons. The pre-existing level of marginal tax rates were substantially higher then, raising the economic benefit of cuts in marginal tax rate cuts of a given size.[46] The 1981 act cut marginal tax rates by significantly more than the 2001 and 2003 tax cuts did. In addition, if the risk premium associated with government debt or with the nation's net

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[45] CBO (1983, page 27) notes that these "tax increases partly offset the revenue effects of ERTA by offsetting almost two-thirds of the ERTA corporate income tax reductions and about 10 percent of the ERTA individual income tax reductions."

[46] A marginal tax cut of, say, 5 percentage points has a more pronounced effect the higher is the initial marginal tax rate. A variety of economic activities are affected by the after-tax return, which depends on (1-t). Since (1-t)/(1-t-.05) is larger the larger is t, the effect of a 5 percentage point tax cut is larger the higher the initial tax rate. For example, reducing tax rates for 70 to 65 percent raises the after-tax return from 30 percent to 35 percent, or by one-sixth; reducing tax rates from 40 to 35 percent raises the after-tax return from 60 percent to 65 percent, or about one-twelfth. Similarly, the distortions caused by a tax are proportional to the square of the tax rate. See Rosen (1988) for a textbook exposition. The implication is that even if marginal tax cuts have the potential to stimulate growth and improve economic performance, a given marginal reduction is less likely to do so now than in the 1980s when marginal rates were higher.

indebtedness to foreigners (Rubin, Orszag, and Sinai 2004) rises as public debt/GDP rises, the fact that publicly held debt is a higher share of GDP now and that the net international investment position has declined markedly since the early 1980s increases the marginal cost of a tax cut now, relative to then.

Finally, the nation was willing and able to respond to the 1981 tax cut by raising taxes in 1982, 1984, 1990, and 1993 and imposing budget rules in the 1990s, and the nation and the fisc benefited from the technology and productivity boom in the 1990s. Currently, however, there is little support for tax increases, with almost half of Congress having signed the "no new taxes" pledge (Gale and Kelly 2004), spending has increased not fallen, and the budget rules have largely been abandoned. All of these factors suggest that the nation is much less well-equipped to deal with large-scale permanent tax cuts now than it was in the 1980s.

VII. Conclusion

Our conclusions are straightforward. First, making the 2001 and 2003 tax cuts permanent would significantly exacerbate an already difficult medium-term budget situation and an unsustainable long-term budget outlook, burning a fiscal hole much larger than the size of the Social Security trust fund shortfall over the next 75 years, and requiring monumental reductions in other spending or increases in other taxes that are far beyond anything that appears to be realistic.

Second, by any reasonable measure, making the tax cuts permanent would be a regressive tax change. But distributional analysis is not simply about giving benefits to everyone, with some people receiving bigger tax cuts than others. Once the financing of the tax cuts is included, the vast majority of American households would be worse off, and the minority that would gain would be concentrated among the most affluent households. While fairness is always in the eyes of the beholder, we see no reason to pursue such changes in the policy arena, especially when the distribution of pre-tax and post-tax income already had become substantially more skewed in the 20 years leading up the 2001 tax cut (CBO 2003, Greenstein and Shapiro 2003).

Third, the budgetary and distributional effects might be worth enduring if making the tax cuts permanent stimulated significant economic growth. Yet every study to date suggests the opposite conclusion—the tax cuts will do little if anything to stimulate growth, and would likely reduce future national income, unless they are financed entirely by spending cuts. The explosion in federal spending since the tax cuts have been enacted belies the likelihood of that outcome.

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Table 1
Effect of the AMT on the Administration's Tax Cuts[1]

Cash Income Class (thousands of 2003$)	Percent of Tax Units With No Cut Due to AMT			Percent of Cut Taken Back By AMT		
	2006	2009	2014	2006	2009	2014
All	0.7	1.4	4.1	15.8	23.4	36.0
0-10	0.0	0.0	0.0	-0.4	-0.1	-0.1
10-20	0.0	0.0	0.0	0.0	0.0	0.0
20-30	0.0	0.0	0.0	0.0	0.0	-0.1
30-40	0.0	0.1	0.3	-0.2	-0.1	0.8
40-50	0.2	0.3	1.2	-0.1	0.3	2.6
50-75	0.6	1.1	3.7	0.3	2.3	11.4
75-100	0.8	2.1	6.0	7.9	18.1	39.3
100-200	2.2	4.5	12.8	25.9	40.0	64.3
200-500	4.2	7.3	12.7	49.2	59.2	68.9
500-1,000	1.1	1.1	1.5	14.2	16.9	20.7
More than 1,000	0.6	1.2	1.1	4.9	5.8	7.0

Source: Tax Policy Center Microsimulation Model.

(1) Baseline is pre-EGTRRA law. Tax cuts include those currently in place and those the Administration has proposed extending, as discussed in the text.

Table 2
10-Year Revenue and Budget Costs of Making the 2001 and 2003 Tax Cuts Permanent (in $ Billions)

	2005-2009	2010-2014	2005-2014	2014
Panel 1: Current Law Baseline/Administration Proposal				
Extend Estate Tax Repeal	7	198	206	61
Extend Other Non-AMT Provisions of EGTRRA, JGTRRA	130	866	997	240
Total Revenue Change	138	1,065	1,202	301
Interest	16	150	166	59
Total Budget Cost	153	1,215	1,368	360
Panel 2: Current Law Baseline/Administration Proposal and AMT Adjustment				
Extend Estate Tax Repeal	7	198	206	61
Extend Other Provisions of EGTRRA, JGTRRA and Adjust AMT	248	1,149	1,397	313
Total Revenue Change	255	1,348	1,603	373
Interest	27	221	248	81
Total Budget Cost	283	1,569	1,851	454

Source: Authors' calculations using CBO debt service matrix, OMB (2004), and TPC Microsimulation Model.

Table 3
Long Term Costs: Social Security, Medicare Part A, and the 2001 and 2003 Tax Cuts, 2003-2080

	Trillions of $2004	Percent of GDP[1]
Social Security Trust Fund Shortfall[2]	3.7	0.7%
Medicare Part A Trust Fund Shortfall[2]	8.2	1.6%
Extend 2001, 2003 Tax Cuts[3]	7.3	1.5%
Extend Cuts and Adjust AMT[4]	9.2	1.8%
2001, 2003 Tax Cuts and Extension	8.3	1.7%
2001, 2003 Tax Cuts, Extension, and AMT Adjustment	10.2	2.0%

(1) The present value of GDP through 2080 is calculated using nominal GDP growth rates and interest rates from Table VI.F7 of the 2004 OASDI Trustees Report.
(2) Authors' calculations using the Social Security and Medicare Trustee reports, Snow et al (2004a), Snow et al (2004b).
(3) Cost of extending the 2001 and 2003 tax cuts as proposed in the Administration's FY2005 Budget and assuming the revenue loss remains a constant share of GDP after 2014. The resulting stream is discounted to 2004 dollars and summed.
(4) Authors' calculations using the AMT adjustment in panel 2 of Table 2, and assuming the combined revenue loss remains a constant share of GDP after 2014. The resulting stream is discounted to 2004 dollars and summed.

Table 4
Paying for Permanent Tax Cuts

	Extend Tax Cuts and Adjust AMT[1]	Memo: 2014 Baseline Revenue/Spending ($ Billions)[2]
Revenue Loss in 2014 (in $ Billions)	373	
Required Percentage Change in[3]		
All Non-interest Outlays	-11	3,278
Discretionary Spending	-32	1,149
Defense, HS, International	-57	651
Other	-75	498
Mandatory Spending	-18	2,129
Social Security	-45	827
Medicare	-53	698
Medicaid	-107	348
All Three	-20	1,873
Other	-146	256
All Spending Except: Interest, Social Security, Medicare, Medicaid, Defense, and Homeland Security	-49	754
Revenue		
Payroll Tax	32	1,173
Corporate Tax	117	320

(1) Author's calculations. See Table 2.
(2) Congressional Budget Office. 2004. The Budget and Economic Outlook: Fiscal Years 2005-2014. Table 1-2
(3) Percentage cuts that exceed 100 are arithmetic artifacts.

Table 5

Distributional Effects of Permanent Tax Cuts and AMT Adjustment[1]

(by Cash Income Percentile, 2010)

Cash Income Percentile	Percent with Tax Cut	Change in After-Tax Income (Percent)	Share of Total Tax Cut (Percent)	Average Tax Change (Dollars)	Change in Average Tax Rate (Percentage Points)	Change in Federal Tax Payments (Percent)	Change in Share of Federal Taxes (Percentage Points)	Change in Share of Post-Tax Income (Percentage Points)	Change in Share of Income Tax Paid (Percentage Points)
Lowest Quintile	15.8	0.3	0.3	-26	-0.3	-8.7	0.0	-0.1	-0.3
Second Quintile	69.0	1.9	4.1	-387	-1.8	-18.2	-0.2	-0.1	-1.1
Middle Quintile	83.9	2.1	7.5	-699	-1.8	-10.8	0.0	-0.2	-0.8
Fourth Quintile	96.3	2.5	14.9	-1,392	-2.0	-9.4	0.3	-0.2	-0.5
Top Quintile	99.2	4.3	73.1	-6,826	-3.1	-11.1	-0.1	0.5	2.6
All	72.8	3.4	100.0	-1,869	-2.6	-11.0	0.0	0.0	0.0
Addendum									
80-99 Percentile	99.3	3.5	43.1	-4,236	-2.6	-10.0	0.5	0.0	1.7
Top 1 Percent	98.7	6.4	30.0	-56,051	-4.3	-13.3	-0.7	0.5	0.9

Source: Urban-Brookings Tax Policy Center Microsimulation Model (version 0304-3).

(1) Baseline is pre-EGTRRA law, evaluated in 2010. The AMT exemption is raised (to $54,000 for married couples filing jointly, $38,250 for single filers) to keep the number of AMT taxpayers equal to the number who would have been on the AMT under pre-EGTRRA law.

Table 6

Distributional Effects of Permanent Tax Cuts and AMT Adjustment with Lump Sum Financing[1]

(by Cash Income Percentile, 2010)

Cash Income Percentile	Percent with Tax Increase	Percent with Tax Cut	Change in After-Tax Income (Percent)	Average Tax Change (Dollars)	Change in Average Tax Rate (Percentage Points)	Change in Federal Tax Payments (Percent)	Change in Share of Federal Taxes (Percentage Points)	Change in Share of Post-Tax Income (Percentage Points)	Change in Share of Income Tax Paid (Percentage Points)
Lowest Quintile	100.0	0.0	-21.7	1,843	21.0	626.0	2.2	-0.7	3.9
Second Quintile	98.7	1.3	-7.5	1,482	6.7	69.9	1.8	-0.5	3.2
Middle Quintile	93.8	6.2	-3.5	1,170	3.0	18.1	1.4	-0.4	2.4
Fourth Quintile	80.2	19.8	-0.9	477	0.7	3.2	0.6	-0.2	0.7
Top Quintile	10.5	89.5	3.1	-4,958	-2.3	-8.1	-5.9	1.8	-10.2
All	76.6	23.4	0.0	0	0.0	0.0	0.0	0.0	0.0
Addendum									
80-99 Percentile	10.8	89.2	2.0	-2,367	-1.5	-5.6	-2.7	0.8	-4.6
Top 1 Percent	4.7	95.3	6.2	-54,182	-4.2	-12.9	-3.2	1.0	-5.5

Source: Urban-Brookings Tax Policy Center Microsimulation Model (version 0304-3).

(1) Baseline is pre-EGTRRA law, evaluated in 2010. The AMT exemption is raised (to $54,000 for married couples filing jointly, $38,250 for single filers) to keep the number of AMT taxpayers equal to the number who would have been on the AMT under pre-EGTRRA law. Financing equals $1,869 per tax unit.

Table 7

Distributional Effects of Permanent Tax Cuts and AMT Adjustment with Proportional Financing[1]

(by Cash Income Percentile, 2010)

Cash Income Percentile	Percent with Tax Increase	Percent with Tax Cut	Change in After-Tax Income (Percent)	Average Tax Change (Dollars)	Change in Average Tax Rate (Percentage Points)	Change in Federal Tax Payments (Percent)	Change in Share of Federal Taxes (Percentage Points)	Change in Share of Post-Tax Income (Percentage Points)	Change in Share of Income Tax Paid (Percentage Points)
Lowest Quintile	99.7	0.3	-2.4	202	2.3	68.5	0.2	-0.1	0.5
Second Quintile	80.1	19.9	-0.9	184	0.8	8.7	0.2	-0.1	0.4
Middle Quintile	76.5	23.5	-1.0	325	0.8	5.0	0.3	-0.1	0.6
Fourth Quintile	79.5	20.5	-0.8	433	0.6	2.9	0.3	-0.2	0.6
Top Quintile	64.0	36.0	0.7	-1,128	-0.5	-1.8	-1.0	0.4	-2.1
All	79.9	20.1	0.0	0	0.0	0.0	0.0	0.0	0.0
Addendum									
80-99 Percentile	65.3	34.7	0.0	-12	0.0	0.0	0.0	0.0	0.1
Top 1 Percent	39.1	60.9	2.5	-22,335	-1.7	-5.3	-1.0	0.4	-2.2

Source: Urban-Brookings Tax Policy Center Microsimulation Model (version 0304-3).

(1) Baseline is pre-EGTRRA law, evaluated in 2010. The AMT exemption is raised (to $54,000 for married couples filing jointly, $38,250 for single filers) to keep the number of AMT taxpayers equal to the number who would have been on the AMT under pre-EGTRRA law. Financing equals about 2.6 percent of cash income.

Table 8

Distributional Effects of Permanent Tax Cuts and AMT Adjustment Among Families with Children[1]

(by Cash Income Percentile, 2010)

Cash Income Percentile	No Financing		Lump Sum Financing		Proportional Financing	
	Percent with Decrease in After-Tax Income	Percent Change After-Tax Income	Percent with Decrease in After-Tax Income	Percent Change After-Tax Income	Percent with Decrease in After-Tax Income	Percent Change After-Tax Income
Lowest Quintile	0.0	0.3	99.8	-18.7	99.0	-2.0
Second Quintile	0.0	3.4	95.7	-5.1	37.1	0.8
Middle Quintile	0.0	4.1	78.2	-1.5	31.0	1.1
Fourth Quintile	0.0	3.4	61.4	0.1	56.3	0.2
Top Quintile	0.0	3.8	6.6	2.6	57.4	0.2
All	0.0	3.7	61.2	0.9	55.9	0.3
Addendum						
80-99 Percentile	0.0	2.9	6.8	1.4	58.6	-0.4
Top 1 Percent	0.0	5.9	2.9	5.6	35.1	2.0

Source: Urban-Brookings Tax Policy Center Microsimulation Model (version 0304-3).

(1) Tax units are considered to have children if they use a dependent exemption for a child living at home.

Table 9

Distributional Effects of Permanent Tax Cuts and AMT Adjustment Among Taxpayers with Business Income[1]

(by Cash Income Percentile, 2010)

Cash Income Percentile	No Financing		Lump Sum Financing		Proportional Financing	
	Percent with Decrease in After-Tax Income	Percent Change After-Tax Income	Percent with Decrease in After-Tax Income	Percent Change After-Tax Income	Percent with Decrease in After-Tax Income	Percent Change After-Tax Income
Lowest Quintile	0.0	0.7	99.7	-22.5	97.7	-2.1
Second Quintile	0.0	2.4	95.9	-7.1	77.7	-0.6
Middle Quintile	0.0	2.7	88.9	-2.9	67.6	-0.4
Fourth Quintile	0.0	2.8	73.3	-0.4	72.9	-0.4
Top Quintile	0.0	5.0	9.5	4.1	62.7	1.3
All	0.0	4.5	57.8	2.6	72.1	0.9
Addendum						
80-99 Percentile	0.0	5.4	9.8	4.0	64.0	1.0
Top 1 Percent	0.0	6.7	4.2	6.5	36.8	2.9

Source: Urban-Brookings Tax Policy Center Microsimulation Model (version 0304-3).

(1) Tax units are assumed to own a small business if they have schedule C, E, or F income.

Table 10

Distributional Effects of Permanent Tax Cuts and AMT Adjustment with Economic Growth[1]

(by Cash Income Percentile, 2010)

Cash Income Percentile	No Financing		Lump Sum Financing		Proportional Financing	
	Percent with Decrease in After-Tax Income	Percent Change After-Tax Income	Percent with Decrease in After-Tax Income	Percent Change After-Tax Income	Percent with Decrease in After-Tax Income	Percent Change After-Tax Income
Lowest Quintile	0.0	1.3	100.0	-20.7	92.7	-1.3
Second Quintile	0.0	3.0	98.1	-6.4	57.6	0.1
Middle Quintile	0.0	3.2	89.6	-2.5	64.7	0.1
Fourth Quintile	0.0	3.6	57.3	0.2	57.8	0.3
Top Quintile	0.0	5.4	1.8	4.2	28.5	1.8
All	0.0	4.5	69.0	1.1	60.0	1.1
Addendum						
80-99 Percentile	0.0	4.6	1.9	3.0	28.5	1.0
Top 1 Percent	0.0	7.5	0.0	7.3	28.2	3.7

Source: Urban-Brookings Tax Policy Center Microsimulation Model (version 0304-3).

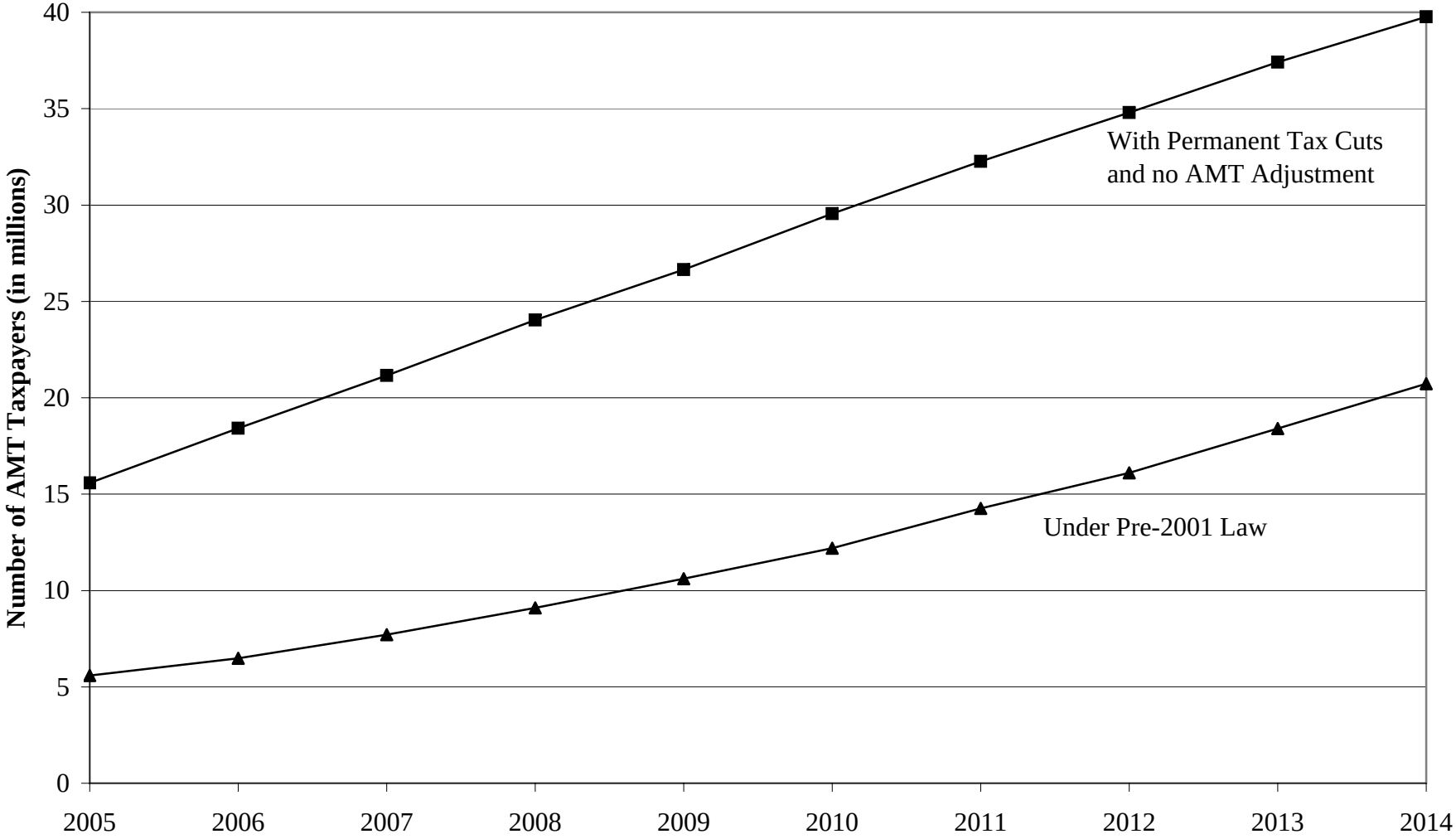
(1) The results assume that all components of cash income rise by 1 percent due to the tax cuts.

Table 11
Long-Term Effects of a 10 Percent Cut in Income Tax Rates
(Percentage Change in GDP and GNP)

Model	Financed By:			
	Cuts in Spending		Increase in Income Tax	
	GDP	GNP	GDP	GNP
OLG - Closed*	-0.1	-0.1	-1.5	-1.5
OLG - Open	0.5	-0.4	0.2	-2.1
Ramsey*	0.8	0.8	-1.2	-1.2

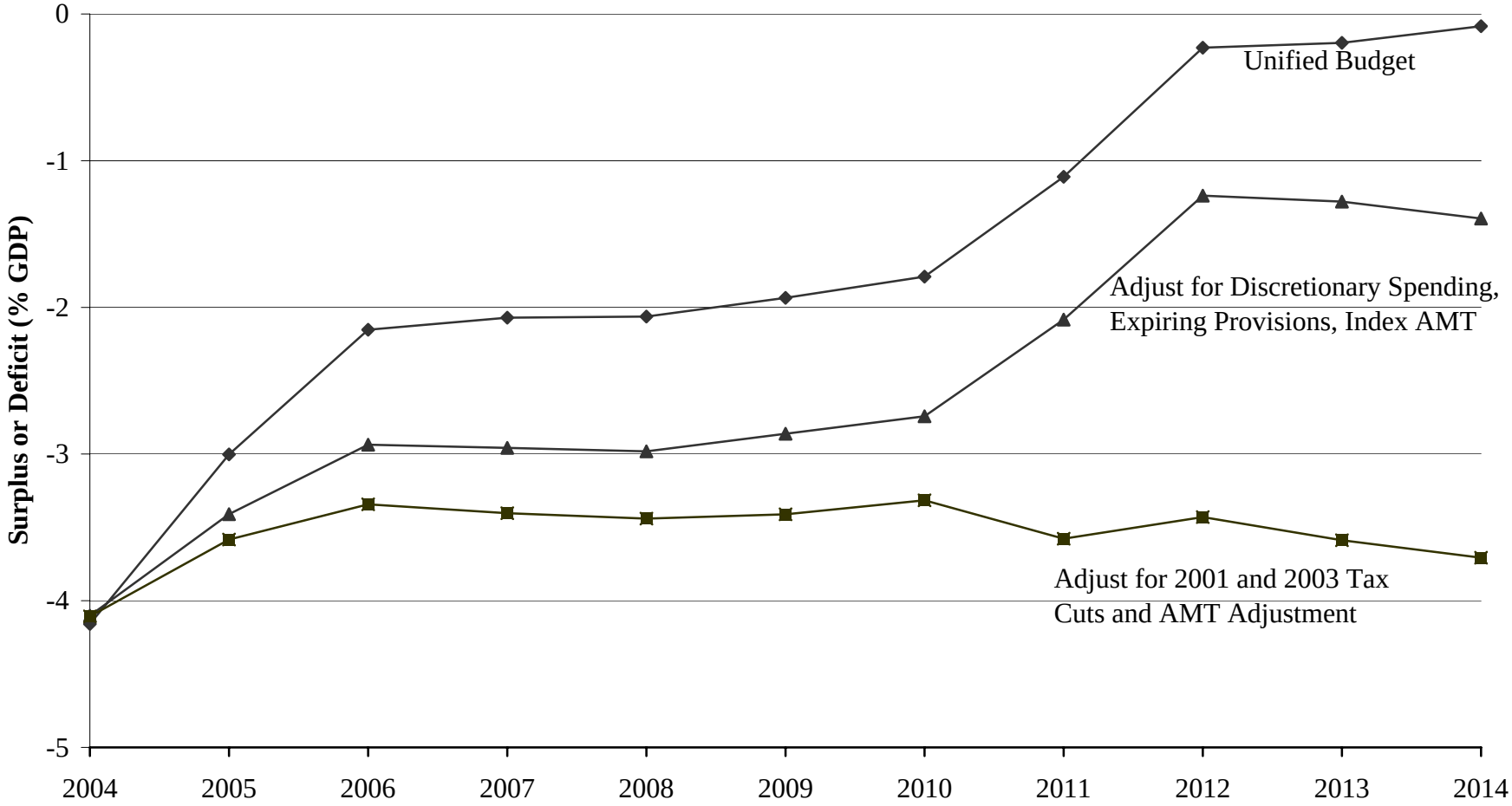
Source: Dennis et al (2004), Table A-2 and conversation with David Weiner.
* GNP and GDP are the same in these models.

Figure 1
Number of AMT Taxpayers, 2005-2014



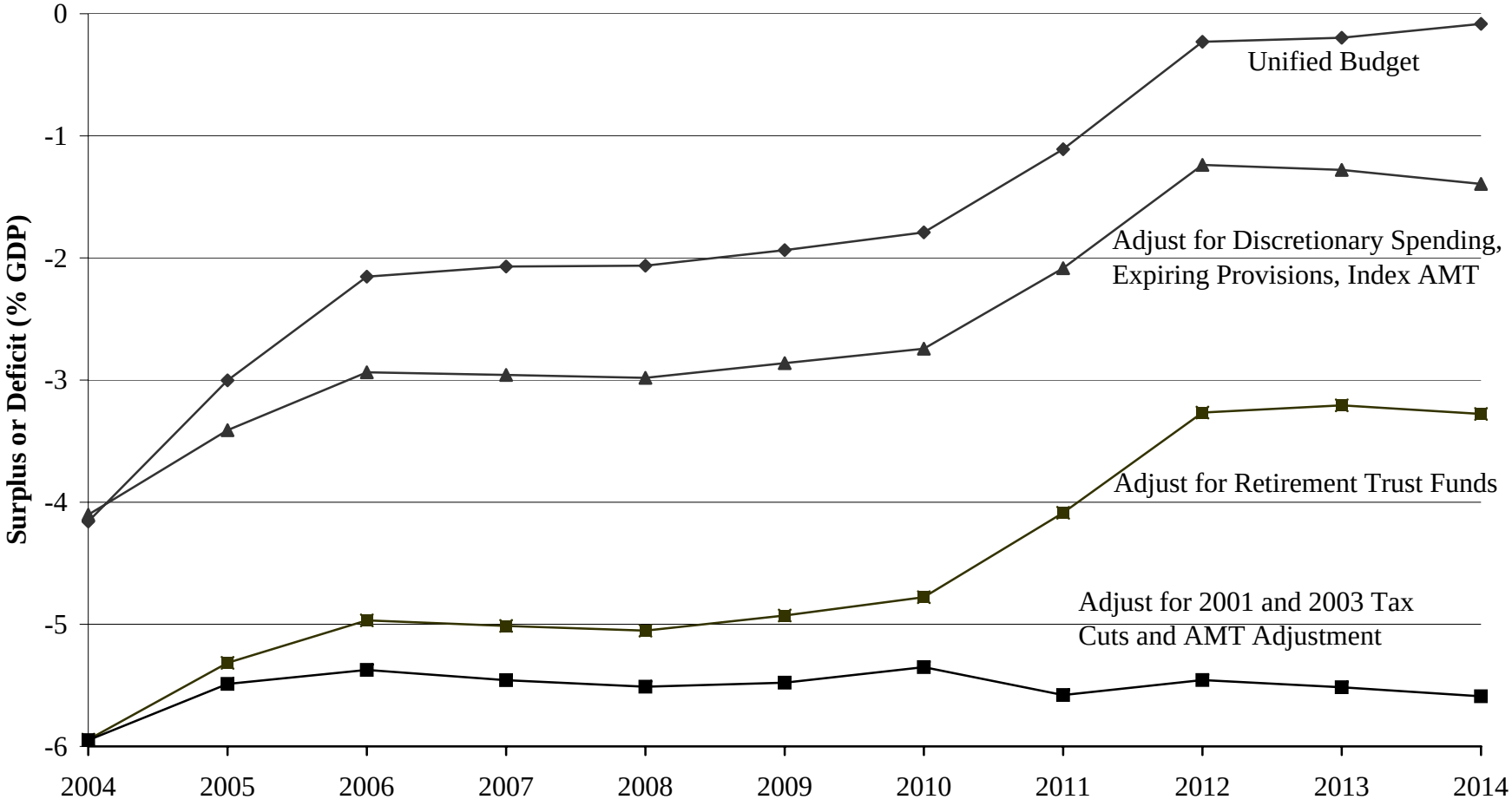
Source: Authors' calculations using TPC Microsimulation Model

Figure 2
Effect of Extending 2001 and 2003 Tax Cuts
On Unified Budget Projections, 2004-2014



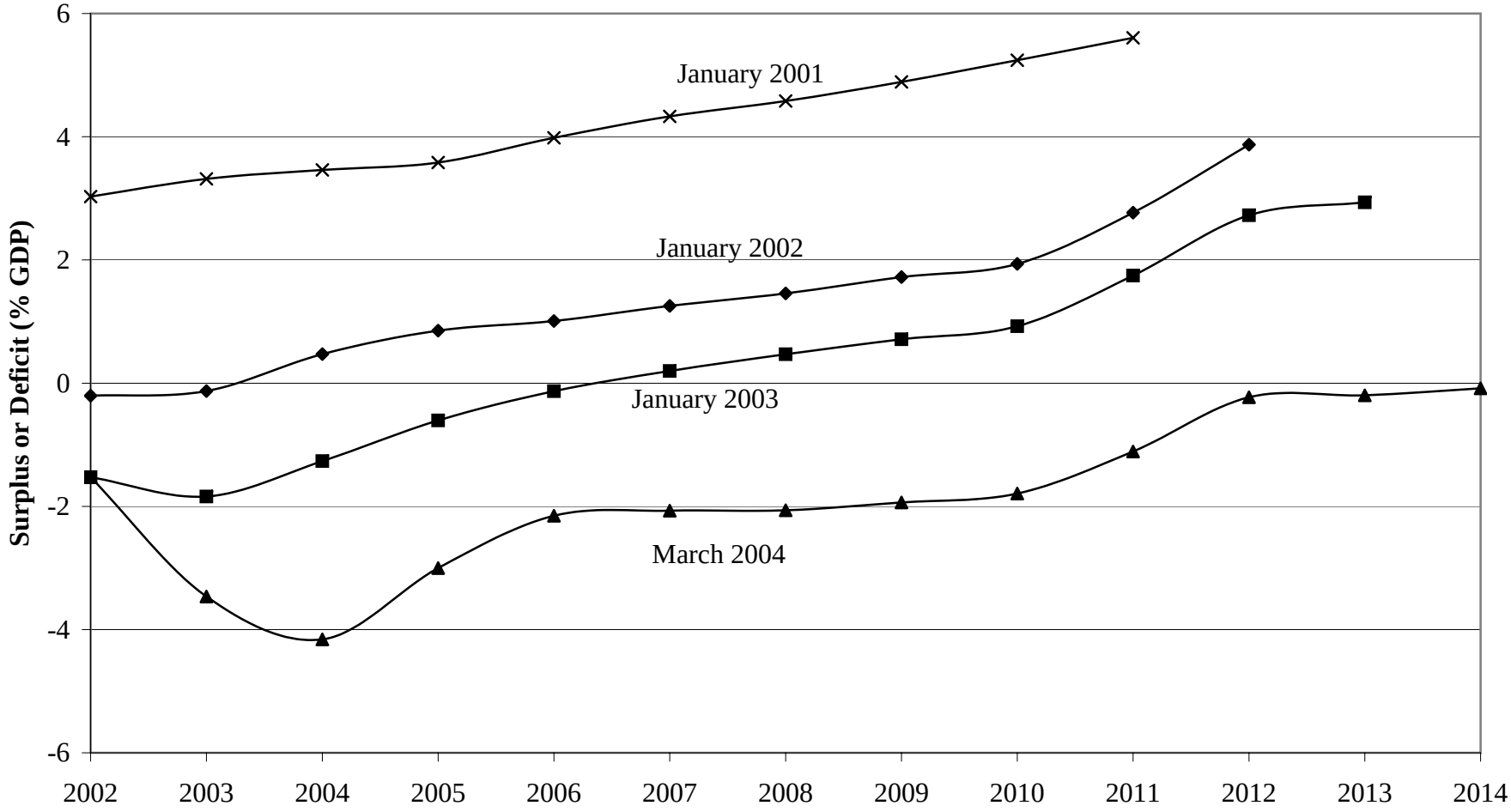
Source: Authors' calculations using CBO (2004), imputed debt service using the CBO interest matrix, and the TPC Microsimulation Model.

Figure 3
Effect of Extending 2001 and 2003 Tax Cuts
On Non-Retirement-Trust-Fund Budget Projections, 2004-2014



Source: Authors' calculations using CBO (2004), imputed debt service using the CBO interest matrix, and the TPC Microsimulation Model.

Figure 4
Changing Unified Budget Projections
as a share of projected GDP



Source: CBO (2004).