

AN ECONOMIC ASSESSMENT OF TAX POLICY IN THE BUSH ADMINISTRATION, 2001–2004

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Abstract: This Article analyzes the economic effects of the George W. Bush administration's tax policies. It describes the 2001, 2002, and 2003 tax cuts and the proposals to make them permanent, and then explores the consequences of making the tax cuts permanent on the fiscal status of the government, the distribution of after-tax income, long-term economic growth, and the prospects for fundamental tax reform. This article also examines the role of the tax cuts as a short-term stimulus over the past few years.

INTRODUCTION

Tax policy has played a central role in the George W. Bush administration (the "Bush administration"). Three noteworthy pieces of tax legislation have been enacted during the Bush administration's tenure: The 2001 tax cut phased in significant reductions in income tax rates, reduced and provided for the eventual repeal of the estate tax, and provided additional tax breaks for saving, education, families with children, and married couples.¹ Legislation in 2002 significantly reduced the tax burden on new business investments. The 2003 tax cut substantially reduced the taxation of dividends and capital gains, and accelerated the phase-ins of the 2001 tax cuts.

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¹ In this Article, the terms "2001 tax cuts," "2001 cuts," "2001 Act," and "EGTRRA" refer to the Economic Growth and Tax Relief Reconciliation Act of 2001, Pub. L. No. 107-16, 115 Stat. 38 (2001). The terms "2003 tax cuts," "2003 cuts," "2003 Act," and "JGTRRA" refer to the Jobs and Growth Tax Relief Reconciliation Act of 2003, Pub. L. No. 108-27, 117 Stat. 252 (2003).

Under current law, all of these tax cuts are temporary, however, and the different provisions expire at various points before the end of 2010. The Bush administration has proposed making most of the 2001 and 2003 tax cuts permanent as well as substantially expanding tax-preferred saving accounts. Outside of the legislative arena, the Bush administration has promulgated regulations that make it easier for firms to deduct investment costs immediately. Taken together, these policies and proposals represent a major shift in the structure of American tax policy.

This Article summarizes and analyzes these policies and proposals. It focuses on how the tax cuts affect the fiscal status of the government, the distribution of income and taxes, the size of the economy, and the structure of the tax system. It also considers the role of the tax cuts in providing a short-term stimulus to the economy over the past few years.

Part I provides background information.² The Part describes the enacted tax cuts and addresses three issues that are germane to any discussion of their potential long-term effects. These issues include specifying which provisions of the tax acts might be made permanent, clarifying interactions between the tax cuts and the alternative minimum tax, and determining how the tax cuts will be financed.

Part II discusses tax policy in the context of overall fiscal policy.³ This Part shows that making the tax cuts permanent would require sizable reductions in spending or increases in other taxes. In the long term, the tax cuts would cost significantly more than fixing the entire Social Security shortfall. As a result, making the tax cuts permanent would represent significant deterioration in an already difficult long-term fiscal situation. One potential counter-argument is that the tax cuts will induce spending cuts. We find this claim to be theoretically fragile and empirically inconsistent with most of the evidence from the last twenty years.

Part III examines the distributional effects of the tax cuts.⁴ This Part shows that making the tax cuts permanent would be regressive and would increase the disparity in after-tax income between high- and low-income households. Our analysis also highlights the importance of considering the financing of tax cuts in the distributional analysis. We show that distributional analyses that ignore the budget

² See *infra* notes 8–22 and accompanying text.

³ See *infra* notes 23–78 and accompanying text.

⁴ See *infra* notes 79–91 and accompanying text.

constraint can give a variety of apparently contradictory implications about whether a tax cut is progressive or regressive. But when the budget constraint is explicitly included in the distributional analysis, all of the measures point in the same direction and show that the tax cuts are regressive.

Part IV explores the impact of the tax cuts on the long-term size of the economy.⁵ The tax cuts affect the economy through two broad channels. First, reductions in marginal tax rates can raise labor supply, saving, and investment. Second, the deficits created reduce national saving and hence reduce future capital income for Americans. The net effect of the tax cuts on growth is the sum of the generally positive impact of lower marginal tax rates and the negative effect of higher budget deficits. Most studies find that the net effect of the tax cuts on growth will be zero or negative in the long run, unless the tax cuts are financed entirely by spending cuts.

Part V examines the role of the tax cuts as a short-term stimulus.⁶ The tax cuts were well-timed to provide a short-term stimulus, but were poorly designed in other ways for this purpose. The tax cuts provided a positive stimulus, but in a sluggish economy, almost any fiscal boost would have done the same. The tax cuts were regressive; they phased in slowly over time. Many of the provisions aimed to raise saving rather than consumption, and the methods used to raise consumption were unduly inefficient and expensive. An alternative program that was focused on progressive tax cuts, aimed at boosting consumption, and phased in quickly could have been significantly more cost-effective in spurring the economy in the short term.

Part VI discusses the Bush administration's policies from the viewpoint of tax reform.⁷ Although the Bush administration's proposals share many features of consumption tax proposals, the recent proposals fall short of a systematic consumption tax in both their rules and their effects. A key element of tax reform, if capital income is to be exempted from tax, is to eliminate deductions for interest payments, which the Bush administration has not proposed. In addition, while a well-designed consumption tax holds out the promise of higher national saving and stronger economic growth, the tax cuts will have the opposite effect. Finally, the recent tax cuts may have made it more difficult to achieve fundamental tax reform politically.

⁵ See *infra* notes 92–154 and accompanying text.

⁶ See *infra* notes 155–198 and accompanying text.

⁷ See *infra* notes 199–221 and accompanying text.

I. BACKGROUND INFORMATION

A. *The Legislated Tax Cuts*

The 2001, 2002, and 2003 tax cuts contain a host of tax provisions that phase in at different rates and expire at different times. In Tables 1a through 1d, we divide the major enacted policies into four broad categories: general income and estate tax cuts, tax cuts for families and married couples, tax cuts for saving and investment, and tax cuts for education.⁸

Table 1a shows the general income and estate tax cuts. Under the 2001 tax cut, the highest income tax rates ultimately decline by different amounts. The top rate declines from 39.6% in 2000 to an eventual level of 35%. The 28%, 31%, and 36% rates ultimately fall by 3 percentage points. These reductions were scheduled to be gradual under the 2001 Act: all four rates were reduced by 0.5 percentage points on July 1, 2001, and January 1, 2002, and were scheduled to be reduced by an additional percentage point at the beginning of 2004. At the beginning of 2006, the top rate was scheduled to fall by 2.6 percentage points, while the next three rates were scheduled to fall by 1 percentage point. The 2003 tax cut accelerated the reductions scheduled for 2004 and 2006 to the beginning of 2003. The reduced rates are in effect through 2010.

The 2001 Act also created a new 10% tax bracket, carved out of the 15% bracket. The maximum taxable income level at which the 15% bracket ends did not change for singles, but was raised for joint filers as part of the marriage penalty relief provisions. Under the 2001 Act, the 10% bracket applied to the first \$12,000 of taxable income for married couples (\$6000 for singles and \$10,000 for heads of households) through 2007.⁹ The limit was scheduled to rise to

⁸ For more details, see generally JOINT COMM. ON TAXATION, ESTIMATED BUDGET EFFECTS OF THE CONFERENCE AGREEMENT FOR H.R. 2: THE "JOBS AND GROWTH TAX RELIEF RECONCILIATION ACT OF 2003": FISCAL YEARS 2003–2013 (JCX-55-03) (Comm. Print 2003) [hereinafter JOINT COMM. ON TAXATION, ESTIMATED BUDGET EFFECTS OF THE CONFERENCE AGREEMENT FOR H.R. 2], available at <http://www.house.gov/jct/x-55-03.pdf>; JOINT COMM. ON TAXATION, ESTIMATED REVENUE EFFECTS OF THE "JOB CREATION AND WORKER ASSISTANCE ACT OF 2002": FISCAL YEARS 2002–2012 (JCX-13-02) (Comm. Print 2002), available at <http://www.house.gov/jct/x-13-02.pdf>; JOINT COMM. ON TAXATION, 107TH CONG., ESTIMATED BUDGET EFFECTS OF THE CONFERENCE AGREEMENT FOR H.R. 1836: FISCAL YEARS 2001–2011 (JCX-51-01) (Comm. Print 2001), available at <http://www.house.gov/jct/x-51-01.pdf>.

⁹ In 2001, the 10% bracket was implemented by providing taxpayers with a one-time payment—the "rebate"—of the minimum of the taxpayer's year 2000 income tax liability

\$14,000 in 2008 and to be indexed for inflation starting in 2009. The 2003 Act raised the taxable income limit to \$14,000 in 2003 and \$14,300 in 2004, at which point it reverts to \$12,000 in 2005.

The 2003 tax cut reduced tax rates on dividends and capital gains. Tax rates on realized capital gains received by individual shareholders were reduced from 10% (in brackets in which the ordinary income tax rate was 15% or below) and 20% (in brackets in which the ordinary income tax was higher than 15%) to 5% and 15% through 2007 and to zero and 15% in 2008. Tax rates on dividends received by individual shareholders were reduced from the rates that apply to ordinary income to the rates that apply to capital gains.

The 2001 Act raised the alternative minimum tax (the "AMT") exemption by \$2000 for single taxpayers and \$4000 for married taxpayers through 2004. The 2003 Act raised the exemptions by another \$9000 for married couples and \$4500 for singles, but again only through 2004.¹⁰

The Economic Growth and Tax Relief Reconciliation Act of 2001 (the "EGTRRA") repealed the limitations on itemized deductions and phase-outs of personal exemptions. The repeal is phased in between 2005 and 2009.

EGTRRA gradually reduces and eventually repeals the estate tax and the generation-skipping transfer tax and modifies the gift tax. Under previous law, the effective exemption (that is, the amount of wealth excluded due to the unified credit) for estates and gifts would have been \$700,000 in 2002, rising gradually to \$1 million in 2006. Under EGTRRA, the effective exemption for estates rose to \$1 million in 2002, and will rise to \$2 million by 2006 and \$3.5 million in 2009.

or \$600 for married couples (\$300 for singles and \$500 for heads of households). Taxpayers who in 2000 had low income or other circumstances such that the payment they received was less than what they should have received based on 2001 income were eligible to claim the difference when they filed their income taxes for 2001. Taxpayers whose payment exceeded the amount to which they were entitled based on 2001 income were not required to pay back the difference. The payment thus acted as an advance credit for 2001 taxes for the first group and a combination of an advance credit for 2001 taxes and a rebate of 2000 taxes for the second group. *See generally* GREGG ESENWEIN & STEVEN MAGUIRE, CONG. RESEARCH SERV., LIBRARY OF CONG., *THE RATE REDUCTION TAX CREDIT (THE "TAX REBATE")* IN P.L. 107-16 (2001). Beginning in 2002, the new bracket was incorporated in withholding and tax tables.

¹⁰ Although not shown in Table 1a, EGTRRA also stipulated that the child credit and the earned income tax credit would not be reduced by the alternative minimum tax (the "AMT"). The 2002 tax cut allows an individual to offset the entire regular tax liability and AMT liability with nonrefundable credits. This provision only extended through the end of 2003, but it was expected to be extended in 2004.

The effective exemption for gifts remains at \$1 million. The top effective marginal tax rates on estates and gifts fell from 60% under previous law to 50% in 2002 and then gradually falls to 45% in 2009. In 2010, the estate and generation-skipping transfer taxes are to be repealed; the gift tax will have a \$1 million lifetime gift exclusion; the highest gift tax rate will be set equal to the top individual income tax rate; and the step-up in basis for capital gains on inherited assets will be repealed and replaced with a general basis carryover provision that has a \$1.3 million exemption per decedent and an additional \$3 million exemption on inter-spousal transfers.

Table 1b shows the tax cuts aimed at families and married couples. The 2001 Act gradually increases the child credit from its maximum value of \$500 in 2000 to \$600 in 2001 through 2004, \$700 in 2005 through 2008, \$800 in 2009, and \$1000 in 2010. The credit was made refundable to the extent of 10% of a taxpayer's earned income above \$10,000 for 2001 through 2004 and 15% subsequently. The earnings threshold (but not the credit amount) is indexed for inflation starting in 2002. The credit will no longer be limited by the AMT. The 2003 tax cut raised the credit to \$1000 in 2003 and 2004 only.

EGTRRA addressed marriage penalties in several ways. In 2000, the standard deduction for married couples was 167% of the standard deductions for singles. EGTRRA raises that ratio to 174% in 2005 and then gradually increases it to 200% by 2009. The Job Relief and Reconciliation Act of 2003 (the "JGTRRA") accelerated these changes, raising the ratio to 200% in 2003 and 2004 only.

EGTRRA also raised the ratio of the maximum taxable income level in the 15% bracket for married couples relative to singles. Under pre-EGTRRA law, the ratio was 167%. Under EGTRRA, the ratio would rise to 180% in 2005 and then rise gradually to 200% in 2008. JGTRRA raises the ratio to 200% in 2003 and 2004 only.

EGTRRA raised the beginning and ending income levels of the earned income tax credit phase-out. These levels increase in three steps, by a total of \$3000 by 2008, after which they are indexed for inflation.

The 2001 tax cut expanded the child and dependent care credit, raising the cap on expenses to \$3000 per child (from \$2400) and raising the credit rate to 35% (from 30%). The credit remains nonrefundable, though. The provision expires in 2010.

Table 1c reports tax cuts for saving and investment. EGTRRA included a series of important changes to the pension and Individual Retirement Account ("IRA") laws and made the tax treatment of retirement saving significantly more generous. Contribution limits for

IRAs and Roth IRAs will rise gradually to \$5000 by 2008 from \$2000 under previous law and will be indexed for inflation thereafter. Contribution limits to 401(k)s and related plans will rise gradually to \$15,000 by 2006 from \$10,500 under current law, and then they will be indexed for inflation. Additional so-called "catch-up" contributions of up to \$5000 per year for anyone over the age of fifty will be permitted. Roth 401(k) plans can be established starting in 2006. The "savers' credit," a non-refundable credit that provides matching contributions to IRAs and 401(k) plans for low- and moderate-income households, will be available between 2002 and 2006.

The 2002 tax cut provides for so-called "bonus depreciation"—a first-year deduction of 30% of the adjusted basis of qualified investments made after September 10, 2001, and before September 11, 2004. The 2003 tax cut increased the bonus depreciation deduction to 50% and extended the expiration date to January 1, 2005. Under the 2003 tax cut, the maximum dollar amount that may be expensed by small businesses increased to \$100,000 (from \$24,000) for investments placed in service in taxable years through 2005.

Table 1d shows education provisions. The 2001 Act expands the definition of qualified tuition plans to include prepaid tuition ("section 529") plans and allows an exclusion from gross income for distributions from such plans (regardless of whether they are prepaid tuition or savings account versions of a section 529 plan) to the extent that the distributions are used for higher education expenses. EG-TRRA allows taxpayers filing jointly with income below \$130,000 to take an above-the-line deduction for higher education expenses up to \$3000 in 2002 through 2003 and \$4000 in 2004 through 2005. Taxpayers filing jointly with income between \$130,000 and \$160,000 may take a deduction for up to \$2500 in 2004 and 2005. Effective in 2002, the contribution limit on education IRAs rose to \$2000 from \$500, the income phase-out range rose, and the definition of qualified expenses expanded to include elementary and secondary school. Deductions for student loans were made more generous.

B. Unfinished Business

A complete examination of the long-term effects of the Bush administration's tax policies requires specification of more than just the actual provisions of recent legislation. All of the legislated tax provisions expire before the end of 2010, so some treatment of the expiring provisions must be established. The tax cuts create significant interactions with the AMT that are widely regarded as unsustainable but

that influence the revenue, distributional, and other effects of the tax cut. And the enacted pieces of legislation contain no apparent means of paying for the tax cuts. Although these issues at first may seem like diversions, their resolution is absolutely central to any evaluation of tax policy over the last four years. For each of these issues, we provide background information and describe the assumptions that we employ in subsequent analysis.

1. Sunsets

The most novel aspect of the recent tax cuts is that they all expire or "sunset" by the end of 2010. At that point, under current law, all provisions of the tax cuts that have not already phased out are repealed, and the tax code reverts to what it would have been had the tax bills never been enacted.

The sunset provisions complicate analysis of the tax cuts. Virtually no one believes the tax cuts will sunset in their entirety as written. Other temporary tax provisions are typically extended at their scheduled expiration date, and the Bush administration has continually indicated the expectation and desire that the tax cuts be made "permanent."¹¹ But exactly when or which parts of the bill might be extended is unclear.

For most purposes, we analyze the tax cuts as if they were made permanent as proposed in the Bush administration's fiscal year 2005 budget.¹² As described in the last column of Tables 1a through 1d, the Bush administration has proposed making permanent almost all of the features of the 2001 and 2003 tax cuts, with a few notable exceptions, including the savers' credit, the AMT exemption, and the education deduction. The Bush administration's proposal does not extend or make permanent the bonus depreciation provisions enacted in 2002 and expanded in 2003.

¹¹ Even before the 2001 tax cut was signed by President Bush, Treasury Secretary Paul O'Neill indicated that "[a]ll these things are going to become permanent. They'll all be fixed." *Tax-Cut Gimmicks Portend Return to Deficit Spending*, USA TODAY, June 6, 2001, at 14A. Every Administration budget submitted after the 2001 tax cut has called for making the tax cuts permanent.

¹² OFFICE OF MGMT. & BUDGET, BUDGET OF THE UNITED STATES GOVERNMENT, FISCAL YEAR 2005 (2004), available at <http://www.whitehouse.gov/omb/budget/fy2005/budget.html>.

2. The Alternative Minimum Tax¹³

The individual AMT creates an additional set of complicating factors. Designed in the late 1960s and strengthened in 1986 to curb aggressive tax avoidance, the AMT operates parallel to the regular income tax system, imposing different income definitions, allowable deductions, and rates. Taxpayers pay the AMT when their AMT liability exceeds their regular income tax liability.¹⁴

The AMT is destined to grow rapidly under current law for two reasons. The first reason is that the AMT is not indexed for inflation, a problem that pre-dates EGTRRA. Under pre-EGTRRA law, the number of AMT taxpayers would have risen from 1.6 million in 2001 to 12.2 million in 2010 and 20.7 million in 2014 (Figure 1).

The recent tax cuts are the second source of AMT growth. By reducing regular income taxes but providing only temporary AMT adjustments, EGTRRA and JGTRRA (if they are made permanent) will increase the number of AMT taxpayers to 29.5 million by 2010 and 39.8 million in 2014 (Figure 1). Among taxpayers with adjusted gross income ("AGI") between \$75,000 and \$100,000, 73% will face the AMT in 2010 if the tax cuts are made permanent, as opposed to 27% under pre-EGTRRA law. For taxpayers with AGI between \$100,000 and \$200,000, the corresponding figures are 92% and 32%, respectively. Thus, the recent tax cuts not only failed to stem the growth of the AMT, but also significantly increased projected AMT growth.

The spread of the AMT will create significant problems for taxpayers and policymakers. The AMT is unduly complicated, raises marginal tax rates for many taxpayers, contains severe marriage and child penalties, and is poorly targeted. Most taxpayers who face the AMT do so because of personal exemptions and deductions for state and local taxes, not because of aggressive tax sheltering. For all of these reasons, the expansion of the AMT will raise complexity, and reduce efficiency, equity, and transparency in the tax system.

In addition, if ignored, the AMT will end up "taking back" a significant portion of the 2001 and 2003 tax cuts. As shown in Table 1, by 2014, the AMT will take back 36% of the tax cuts associated with mak-

¹³ For details on the AMT, see generally Leonard E. Burman, et al., *The AMT: Projections and Problems*, 100 TAX NOTES 105 (2003); Leonard Burman et al., *The Individual Alternative Minimum Tax: Problems and Potential Solutions*, 55 NAT'L. TAX J. 555 (2002); or Leonard E. Burman, et al., *The Expanding Reach of the Individual Alternative Minimum Tax*, 17 J. ECON. PERSP., Spring 2003, at 173.

¹⁴ In other cases, taxpayers pay regular income tax, but have their use of credits limited due to the AMT. We will refer to both groups as "on the AMT."

ing the tax cuts permanent, including about two-thirds of the benefits for households with income between \$100,000 and \$500,000 and almost 40% for households with income between \$75,000 and \$100,000.

For all of these reasons, no one seriously expects that Congress and the Bush administration will allow the AMT to expand as projected. But some assumption about the AMT is required for our analysis because the recent tax cuts are the cause of a significant part of the projected AMT growth and the associated problems.

Evolution of the AMT according to current law, together with the Bush administration's proposal to make (the rest of) the tax cuts permanent, would artificially reduce the reported budget cost of the tax cuts relative to the true costs. The budget costs would be held down because many taxpayers would get little or no tax cut because of the AMT. The true costs would be larger because part of the expanded AMT problem would be due to the tax cuts.

Instead, we typically assume that the AMT exemption will be increased above current-law levels in each future year by enough to keep the number of AMT taxpayers the same as it would have been under pre-EGTRRA law in that year (as shown in Figure 1).¹⁵ That is, we raise the AMT exemption to offset the increase in AMT taxpayers due to the 2001 and 2003 tax cuts, but we do not "fix" the underlying problem that the AMT is not indexed for inflation. We note the effects of alternative AMT assumptions at various points below.

3. Paying for the Tax Cuts

Tax cuts are not free. The government's budget constraint implies that tax cuts must eventually be financed with increases in other taxes or reductions in government programs. To date, the required payments for the tax cuts enacted in 2001 and 2003 have been deferred, and the tax cuts have been funded with increased borrowing. This postpones but does not eliminate the required payments.

Some tax cut supporters argue that the payments can be postponed indefinitely. It is true that in a stable long-term economy, gov-

¹⁵ Under current law, the AMT exemption is \$45,000 for married couples (\$33,750 for singles) starting in 2005 and is not indexed for inflation. Under our adjustment, the analogous exemption level is \$53,250 for married couples (\$37,825 for singles) in 2005, and rises gradually to \$54,000 for married couples (\$38,250 for singles) in 2010 and \$55,500 for married couples (\$39,000 for singles) in 2014. As noted below, in estimating the adjusted cost of the tax cuts, we assume the AMT had been reformed in the baseline. The result is very similar to maintaining the number of AMT taxpayers at the pre-2001 law projected levels.

ernment debt can safely grow as fast as the economy. Thus, if government debt were slated to grow more slowly than the economy, then raising the growth rate of debt (for example, by cutting taxes) so it were equal to the growth rate of the economy would be possible and sustainable. Under such a scenario, or under a scenario of expected permanent surpluses, no explicit increase in taxes or cut in spending would be required.

These scenarios outline an interesting theoretical case, but they are simply not relevant to the U.S. economy.¹⁶ As discussed in Part II, under current policies, every plausible scenario shows the ratio of federal debt to Gross Domestic Product ("GDP") exploding over time in the absence of other policy changes, even if the tax cuts were not made permanent.¹⁷ The Bush administration itself acknowledges that under its own policies, over the long-run "the budget is on an unsustainable path."¹⁸ Other evidence shows that the nation already faced an unsustainable fiscal position even before the tax cuts were enacted, due to the aging of the population and rising healthcare expenditures.¹⁹ As a result, postponement of payment for the tax cuts cannot go on forever.

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.²⁰ As discussed in Part IV, however, there is no credible evidence to support this view in the context of making recent tax cuts permanent.²¹ In

¹⁶ Furthermore, even in the empirically irrelevant case in which government debt was *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 otherwise could have been used for other purposes. There would still be a trade-off between tax cuts and other policy options.

¹⁷ See *infra* notes 23–78 and accompanying text.

¹⁸ OFFICE OF MGMT. & BUDGET, ANALYTICAL PERSPECTIVES, BUDGET OF THE UNITED STATES GOVERNMENT, FISCAL YEAR 2004, at 40 (2003), available at <http://www.whitehouse.gov/omb/budget/fy2004/pdf/spec.pdf>.

¹⁹ See generally CONG. BUDGET OFFICE, THE LONG-TERM BUDGET OUTLOOK (2001); Alan J. Auerbach & William G. Gale, *Tax Cuts and the Budget*, 90 TAX NOTES 1869 (2001).

²⁰ House of Representatives Budget Committee Chairman Jim Nussle made this claim in March of 2004, echoing earlier statements by President Bush and Vice President Richard B. Cheney. Chairman Jim Nussle's quote was reported in the *Daily Tax Report*. See Bud Newman & Nancy Ognanovich, *Nussle's New Budget Enforcement Bill to Apply to Spending, Not to Tax Cuts*, 51 DAILY TAX REP. (BNA), at G-12 (Mar. 17, 2004) (quoting Rep. James A. "Jim" Nussle). For an examination of previous Administration statements, see generally RICHARD KOGAN, CTR. ON BUDGET & POLICY PRIORITIES, WILL THE TAX CUTS ULTIMATELY PAY FOR THEMSELVES? (Mar. 3, 2003), available at <http://www.cbpp.org/3-3-03tax.pdf>.

²¹ See *infra* notes 92–154 and accompanying text.

fact, evidence indicates that if the recent tax cuts are financed on a sustained basis with deficits, the net effect will be to *reduce* long-term growth as shown below.²²

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. That 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.

II. TAX CUTS AND FISCAL POLICY

Given the ubiquitous trade-offs between taxes and other uses of public funds, placing recent tax policies in the context of the overall federal budget outlook is an appropriate place to begin the analysis. In this Part, we provide alternative perspectives on the magnitude of the tax cuts and the financial status of the federal government, and use these findings to evaluate several potential justifications for the tax cuts. We also evaluate the so-called "starve the beast" theory, which suggests that the tax cuts will induce spending cuts of equal magnitude and so will, on net, impose no fiscal harm.

A. *Size of the Tax Cuts*

Because the tax cuts phase in slowly and then expire, a key issue in measuring and assessing the size of the tax cut is the time horizon employed. We use two horizons. First, many budget analyses, including the Congressional Budget Office's (the "CBO") annual projections, and revenue estimates by the Joint Committee on Taxation (the "JCT"), the CBO, and the Department of Treasury, employ a ten-year budget window. That window extended to 2011 at the time of the 2001 tax cuts and extended to 2014 as of January 2004. Second, for many issues, valuable perspectives can be obtained by looking at much longer horizons.

1. Within the Ten-Year Budget Window

Table 3 reports official estimates of the revenue loss from the tax cuts, as estimated by the JCT. The tax cuts will reduce revenue by \$1.75 trillion, or 1.2% of GDP, between fiscal years 2001 and 2011. The 2001

²² See *infra* notes 92–154 and accompanying text.

tax legislation accounts for slightly more than three-quarters of this revenue loss, the 2003 tax legislation accounts for about one-fifth, and the remainder is due to the 2002 tax legislation.²³

Relative to the official baseline, this revenue loss results in increased government debt. The overall impact on the budget is the sum of the revenue loss plus the additional debt service on the higher level of public debt. With debt service costs included, the budgetary cost of the tax cuts as legislated for fiscal years 2001 to 2011 is \$2.3 trillion, or 1.6% of GDP.²⁴

These estimates assume that the tax cuts expire as scheduled under current law and that no adjustment to the AMT is made. If instead the tax cuts are made permanent, as proposed by the Bush administration, and the AMT is reformed, the revenue losses through 2011 would rise by more than 25%. To develop these alternative estimates, we first construct a baseline in which the AMT has been reformed. Then we examine the cost of the tax cuts relative to this baseline and assume the tax cuts have been extended past their official sunsets. Consistent with the Bush administration's stance, however, we do not assume that the bonus depreciation provision is extended.²⁵ In particular, we use the Tax Policy Center (the "TPC") model to estimate the combined revenue effect of the 2001 and 2003 individual income and estate tax cuts relative to a baseline in which the AMT had been reformed.²⁶ We then

²³ Technically, making the tax cuts permanent would involve some relatively minor outlay expenses—for example, for the refundable portions of the earned income credit and the child credit—as well as revenue losses. Our discussion of "revenue losses" includes those direct outlay components.

²⁴ We estimate debt service costs using a matrix of projected interest rates generated by the Congressional Budget Office (the "CBO") for this purpose.

²⁵ Another approach, which we adopt in our discussion of distributional effects of the tax cuts, calculates the additional revenue cost of keeping the AMT on its pre-2001 trajectory, in terms of revenue and the number of taxpayers subject to it. The results from these two approaches are quite similar: the estimated individual income tax revenue loss in 2014 is \$300 billion under the approach adopted in this Part and \$286 billion under the alternative approach of keeping the AMT on its pre-2001 trajectory. The difference in 2014 is 0.08% of gross domestic product ("GDP").

²⁶ See TAX POLICY CTR., URBAN INST. & BROOKINGS INST., OVERVIEW OF THE TAX POLICY CENTER MICROSIMULATION MODEL, at <http://taxpolicycenter.org/TaxModel/tmdb/TMTemplate.cfm?DocID=299> (Jan. 14, 2004) (describing the Tax Policy Center (the "TPC") model). The AMT reform assumes a higher AMT exemption level, allows personal non-refundable credits against the AMT, and indexes the AMT to inflation. Under these assumptions, the number of tax-filing units on the AMT in 2014, assuming the 2001 and 2003 Acts are extended, is about 5.5 million. Note that the TPC model estimates do not incorporate microeconomic behavioral responses, as the official Joint Committee on Taxation (the "JCT") estimates do. We therefore scale the official JCT and CBO estimates by

add estimates from the JCT for the temporary bonus depreciation provision and the expansion of expensing in section 179 of the Internal Revenue Code (along with extension of the section 179 provision) to obtain our overall estimates.²⁷ The revenue loss would be \$2.2 trillion and the budget cost including debt service would be \$2.8 trillion. For the ten-year period from 2005 through 2014, the revenue loss amounts to \$2.7 trillion, or 1.8% of GDP and the budget costs with debt service amount to \$3.7 trillion, or 2.5% of GDP.

As shown in Figure 2, the adjusted revenue loss peaks at 2.4% of GDP in 2004, after which it declines somewhat as the bonus depreciation provision expires.²⁸ In subsequent years, the revenue loss begins to climb again, as the remaining backloaded provisions of EGTRRA (including the estate tax reductions and the elimination of the phase-out of itemized deductions and the personal exemption) take effect. By 2011, the revenue loss again exceeds 2.0% of GDP.²⁹ By 2014, the revenue loss associated with making the tax cuts permanent (assuming the AMT has been reformed) is \$400 billion and the budget cost with debt service is more than \$600 billion. These figures represent 2.2% and 3.4% of GDP in that year, respectively.

One way to gauge the magnitude of the tax cuts is to examine the policy changes that would be necessary to pay for the revenue losses from making the tax cuts permanent (assuming the AMT had already been reformed). As shown in Table 4, financing the tax cuts in 2014 would imply one of the following options or changes of a similar magnitude (relative to the CBO baseline):

- A 48% cut in Social Security benefits;
- A 57% cut in Medicare benefits;
- Complete elimination of the federal component of the Medicaid program;
- A 12% cut in all non-interest spending;

the ratio of the TPC estimates against the baseline in which the AMT is reformed to the TPC estimates against the official baseline in which the AMT is not reformed.

²⁷ The extension of the expansion of section 179 of the Internal Revenue Code is attributed to the 2003 legislation in Table 3.

²⁸ The jagged pattern of revenue losses around 2011 in Figure 2 likely reflects the fact that these figures combine estimates from different sources; some of the estimates are intended to measure the cost of the tax cuts as enacted and others to measure the cost of extending the tax cuts.

²⁹ The estimates in Table 3 and Figure 2 omit the effects of any changes in GDP and interest rates caused by the recent tax policies. These effects are discussed *infra* notes 155–198 and accompanying text.

- A 53% cut in all spending other than interest, defense, homeland security, Social Security, Medicare, and Medicaid;
- An 80% cut in all domestic discretionary spending;
- A 34% increase in payroll taxes; or
- A 124% increase in corporate tax revenues.

These figures represent spending cuts and revenue increases that are well beyond the range of those currently in any public discussion.

Another way to put the tax cuts in perspective is to compare them to the 1981 Ronald W. Reagan administration tax cut (the Economic Recovery Tax Act of 1981 or "ERTA"). Such comparisons are 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.³⁰ The revenue costs of ERTA, measured against an inflation-indexed baseline and net of the revenue increase in TEFRA, amounted to about 2.1% of GDP.³¹ Thus, under reasonable interpretations of the size of the Reagan tax cuts, the recent tax cuts are approximately the same size.

2. Long-Term Horizons

To examine the long-term budgetary effects of making the tax cuts permanent, we use the adjusted revenue estimates shown above and assume that the revenue loss remains constant as a share of GDP after 2014.³² Under these assumptions, Table 5 shows that the 2001 and 2003 tax cuts, if made permanent, would reduce revenues by 2.2% of GDP through 2080 and over an infinite horizon. In present

³⁰ The CBO 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." CONG. BUDGET OFFICE, *BASILINE BUDGET PROJECTIONS FOR FISCAL YEARS 1984–1988*, at 27 (1983), available at <http://www.cbo.gov/ftpdocs/50xx/doc5055/doc05a.pdf> (last modified Feb. 17, 2004).

³¹ PETER R. ORSZAG, CTR. ON BUDGET & POLICY PRIORITIES, *THE BUSH TAX CUT IS NOW ABOUT THE SAME SIZE AS THE REAGAN TAX CUTS* (Apr. 19, 2001), available at <http://www.cbpp.org/4-19-01tax.pdf>.

³² See *supra* notes 23–27 and accompanying text.

value, making the tax cuts permanent would reduce revenue by \$11 trillion through 2080 and \$18 trillion over an infinite horizon.³³

To put these figures in context, over the next seventy-five years, the actuarial deficit in the Social Security system is 0.7% of GDP under the Trustees' assumptions and about 0.4% of GDP under new projections issued by the CBO.³⁴ Thus, if the 2001 and 2003 tax cuts were made permanent, the revenue loss over the next seventy-five years 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 amounts to 1.2% of GDP, which is smaller than the 2.2% of GDP in revenue losses from the tax cuts over the same horizon.

B. *The Federal Budget Outlook*

The justification for and effects of the tax cut depend significantly on the federal budget outlook. Just as the tax cuts are usefully examined over a ten-year window and longer periods, we use both time horizons to examine the budget outlook.

1. Within the Ten-Year Budget Window

a. *The Official and Adjusted Baselines: 2001*

The January 2001 CBO budget baseline formed the basis of tax and fiscal policy discussions in the winter and spring of 2001. Under the baseline, the federal budget faced a projected surplus of \$5.6 trillion over the subsequent decade, with surpluses rising over time.³⁵ Using this information, supporters argued that the tax cuts were affordable and simply involved refunding to the American people an over-charge on their taxes.

³³ This is consistent with the results by Peter Orszag, Richard Kogan, and Robert Greenstein, who estimate that the 2001 and 2003 cuts, if made permanent, would reduce revenues by between \$9.5 trillion and \$11.6 trillion in present value over the seventy-five years between 2003 and 2077, depending on the specifics of the AMT reform. PETER R. ORSZAG ET AL., CTR. ON BUDGET & POLICY PRIORITIES, *THE ADMINISTRATION'S TAX CUTS AND THE LONG-TERM BUDGET OUTLOOK*, available at <http://www.cbpp.org/3-5-03bud.pdf> (last revised Mar. 19, 2003).

³⁴ CONG. BUDGET OFFICE, *THE OUTLOOK FOR SOCIAL SECURITY* (2004), available at <http://www.cbo.gov/ftpdocs/55xx/doc5530/06-14-SocialSecurity.pdf> (last modified June 17, 2004).

³⁵ *Infra* fig.3 (top line).

The baseline, however, is an extremely misleading indicator of the government's financial status under plausible policy trajectories.³⁶ 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. In 2001, the trust funds for Social Security, Medicare Part A, and government employee pensions accounted for \$3.3 trillion of the \$5.6 trillion surplus, but these Trust Funds then faced (and continue to face now) long-term financial shortfalls. Another concern is that the baseline holds real discretionary spending constant over time. In a growing economy with an expanding population, this assumption is neither credible nor consistent with historical evidence. The baseline also assumes that all tax provisions expire as scheduled, even though most have been extended routinely in the past, and it further assumes that no AMT fix is provided in the future.

Adjusting for these factors has an enormous impact on ten-year budget projections. For example, in January 2001, the ten-year surplus would have been just \$1.6 trillion if (1) the retirement trust funds were removed from the calculations, (2) discretionary spending were allowed to grow with inflation and the population, and (3) all expiring tax provisions were extended and the AMT was adjusted to hold the number of AMT taxpayers roughly constant over time.³⁷ Thus, even in the heady budget days of early 2001, a realistic and meaningful projection would have generated a ten-year budget surplus much lower than the official figures indicated and actually smaller than the budget cost of EGTRRA reported in Table 3.

b. Changes in the Ten-Year Fiscal Outlook

Between January 2001 and March 2004, the fiscal status of the government deteriorated markedly, as shown in Figure 3. By March 2004, the baseline budget for 2002 through 2011 projected a deficit of \$2.9 trillion. This represents a decline in fiscal status of \$8.5 trillion since January 2001, equivalent to 6.1% of projected GDP over the decade. The decline appears to be permanent, with a substantial decline in every year. Figure 3 also shows the sources of the deteriora-

³⁶ To be perfectly clear, the baseline is not intended to be a measure of the financial status of the government under plausible policy projections. Hence, our criticisms are not so much of the baseline per se, but of the common use of the baseline projections as a proxy for the fiscal status of the government.

³⁷ See generally Auerbach & Gale, *supra* note 19.

tion in the budget. The tax cuts, as legislated, explain 28% of the decline.³⁸ Changes in defense and homeland security and economic and technical changes account, respectively, for 19% and 39% of the change. Other non-interest spending accounts for about 14%.

c. *The Official and Adjusted Baselines: 2004*

Figure 4 shows the official and adjusted baselines as of March 2004, as shares of GDP. The CBO projects a ten-year baseline unified budget deficit of \$2.0 trillion, or 1.3% of GDP, for fiscal years 2005 through 2014. (The budget outside of Social Security faces a baseline deficit of \$4.3 trillion.) If the expiring tax provisions are extended, the AMT is held in check, and real discretionary spending grows with the population, the ten-year unified budget deficit will be \$5.6 trillion (3.8% of GDP), with deficits of 3.4% of GDP or more in every year. Outside of the trust funds for Social Security, Medicare Part A, and government employee pensions, the adjusted ten-year budget faces a deficit of \$8.6 trillion over the next decade (5.8% of GDP). The differences between the CBO baseline and the adjusted unified budget projections grow over time. In 2014 alone, the difference is more than \$1 trillion (6.1% of GDP). Thus, while the official baseline projections show shrinking deficits over time, the adjusted measures show deficits that rise persistently over time.

2. Longer-Term Horizons

As noted above, the retirement trust funds face short-term cash flow surpluses but long-term financial shortfalls.³⁹ Capturing these effects requires extending the time horizon of the analysis. To do this, we report estimates of the fiscal gap, which is the size of the immediate and permanent increase in taxes or reductions in non-interest expenditures that would be required to establish the same debt to GDP ratio in the long run as holds currently.⁴⁰

³⁸ This estimate assumes that the tax cuts expire as scheduled and that the AMT is not adjusted. If instead the tax cuts are made permanent and the AMT is reformed as described above, the share of the projected fiscal decline due to tax cuts will rise.

³⁹ See *supra* note 36 and accompanying text.

⁴⁰ See generally Alan Auerbach, *The U.S. Fiscal Problem: Where We Are, How We Got Here and Where We're Going*, in NBER MACROECONOMICS ANNUAL 1994, at 141 (Stanley Fischer & Julio Rotemberg eds., 1994). Over an infinite planning horizon, this requirement is equivalent to assuming that the debt to 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, in which the primary surplus is the difference between revenues and non-interest expendi-

Alan Auerbach and William Gale estimate that, despite running large cash-flow surpluses at the time, the federal government faced a fiscal gap in 2001 of 1.45% of GDP through 2070 and 4.14% of GDP on a permanent basis.⁴¹ A more recent study estimates a long-term fiscal gap in 2004 of 7.2% of GDP through 2080 and 10.5% of GDP on a permanent basis.⁴² The increase of roughly 6 percentage points of GDP in the long-term fiscal gap approximates the decline in the ten-year baseline budget projections noted in Figure 3. Because the tax cuts account for 2.2% of GDP over the long-term, they significantly exacerbate the fiscal gap.

3. Uncertainty in Budget Projections

Substantial uncertainty surrounds the short- and long-term budget projections described above.⁴³ Much of the problem stems from the fact that the surplus or deficit is the difference between two large quantities—taxes and spending. Small percentage errors in either one can cause large percentage changes in the difference between them. Furthermore, small differences in growth rates sustained for extended periods can have surprisingly large economic effects. Such uncertainty makes budget projections imprecise. Nonetheless, almost all studies that have examined the issue suggest that even if major sources of uncertainty are accounted for, serious long-term fiscal problems will remain.⁴⁴

tures. See generally Alan Auerbach et al., *Budget Blues: The Fiscal Outlook and Options for Reform*, in AGENDA FOR THE NATION 109 (Henry Aaron et al. eds., 2003) (discussing the relationship between the fiscal gap, generational accounting, accrual accounting, and other ways of accounting for government), available at <http://www.brook.edu/views/papers/gale/20030501.pdf>; Alan J. Auerbach, et al., *Sources of the Long-Term Fiscal Gap*, 103 TAX NOTES 1049 (2004) [hereinafter Auerbach et al., *Long-Term Fiscal Gap*] (providing recent estimates of the fiscal gap). available at <http://www.brookings.edu/views/articles/gale/20040524.pdf>.

⁴¹ Auerbach & Gale, *supra* note 19.

⁴² Auerbach et al., *Long-Term Fiscal Gap*, *supra* note 40. The figures in Auerbach & Gale, *supra* note 19 and Auerbach et al., *Long-Term Fiscal Gap*, *supra* note 40 are not strictly comparable because the two studies make slightly different assumptions with respect to the AMT, but the difference is a rounding error compared to an increase in the fiscal gap of 6% of GDP.

⁴³ See *supra* notes 23–27 and accompanying text.

⁴⁴ CONG. BUDGET OFFICE, THE BUDGET AND ECONOMIC OUTLOOK: AN UPDATE 45 (2001), available at <http://cbo.gov/ftpdocs/30xx/doc3019/EntireReport.pdf> (last modified Sept. 5, 2001). See generally RONALD LEE & RYAN EDWARDS, THE FISCAL IMPACT OF POPULATION AGING IN THE US: ASSESSING THE UNCERTAINTIES (Ctr. for the Econ. & Demography of Aging, Univ. of Cal., Berkeley, CEDA Paper No. 2002-0001CL, 2002), available at <http://repositories.cdlib.org/cgi/viewcontent.cgi?article=1000&context=iber/ceda>; John B. Shoven, *The Impact of Major Life Expectancy Improvements in the Financing of Social Security*,

C. Discussion

Several implications arise from the data presented above.⁴⁵ First, tax cuts are not simply a matter of returning unneeded or unused funds to taxpayers. Tax cuts represent a choice by current voters either (1) to require future taxpayers to pay for current spending, or (2) to cut spending. As shown above, the spending cuts or other tax increases required to pay for making the tax cuts permanent would be monumental.

Second, the presence of a long-term fiscal gap in 2001, despite current cash-flow surpluses, suggests that making the tax cuts permanent was not affordable at that time. The vast deterioration in both the ten-year and long-term budget outlook since then suggests that if making the tax cuts permanent was not affordable in 2001, it is far less so today.

Third, the results provide useful perspectives on the claim by Federal Reserve Chairman Alan Greenspan that tax cuts were needed in 2001 to avoid having the government pay off all available marketable Treasury debt by 2006.⁴⁶ When large budget surpluses were projected under the official estimates in January 2001, Alan 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 Alan 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.⁴⁷ The subsequent deterioration in the fiscal outlook (Figure 3) has eliminated any "risk" that the public debt will be paid off.

Medicare, and Medicaid, in COPING WITH METHUSELAH: THE IMPACT OF MOLECULAR BIOLOGY ON MEDICINE AND SOCIETY 166 (Henry J. Aaron & William B. Schwartz eds., 2002).

⁴⁵ See *supra* notes 23-44 and accompanying text.

⁴⁶ See generally *Outlook for the Federal Budget and Implications for Fiscal Policy: Hearing Before the Senate Comm. on the Budget, 107th Cong. (2001)* (testimony of Alan Greenspan, Chairman, Fed. Reserve Board), available at <http://www.federalreserve.gov/boarddocs/testimony/2001/20010125/default.htm> (last updated Jan. 25, 2001).

⁴⁷ See generally *The Budget and Long-Term Fiscal Policy: Hearing Before the Senate Comm. on the Budget, 107th Cong. (2001)* (testimony of Peter R. Orszag), available at <http://www.sbgco.com/Papers/Testimony%20to%20Senate%20Budget%20Committee%20-%20February%207,%202001.PDF>; William G. Gale & Samara R. Potter, *An Economic Evaluation of the*

Fourth, as noted above, against comparable baselines, the Bush administration's tax cuts are about the same share of the economy as those in the early 1980s.⁴⁸ The nation, however, 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 twenty 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, and public debt was a smaller share of GDP. Furthermore, the United States was an international creditor then, but it is a substantial international debtor today.⁴⁹ Assuming an increasing risk premium associated with government debt or with the nation's net indebtedness to foreigners, the facts 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 increase the marginal cost of a tax cut now relative to then.⁵⁰

The economic benefit, furthermore, was likely higher because marginal tax rates were substantially higher then, raising the economic benefit of marginal tax rate cuts relative to today.⁵¹ Finally, the nation was willing and able to respond to the 1981 tax cut by raising taxes in 1982, 1984, 1990, and 1993. Currently, however, the Bush administration shows no interest in considering corrective tax measures, President Bush has signed the "no new taxes" pledge, and it is doubtful that the spending cuts that would be needed to finance the

Economic Growth and Tax Relief Reconciliation Act, 55 NAT'L TAX J. 133 (2002); Alice Rivlin, *Why Fight the Surplus?*, N.Y. TIMES, Jan. 30, 2001, at A23.

⁴⁸ See *supra* notes 30–31 and accompanying text.

⁴⁹ See generally William G. Gale & Peter R. Orszag, *The Real Fiscal Danger*, 99 TAX NOTES 429 (2003).

⁵⁰ See generally Robert E. Rubin et al., *Sustained Budget Deficits: Longer-Run U.S. Economic Performance and the Risk of Financial and Fiscal Disarray* (2004) (paper presented at AEA-NAEFA Joint Session, Allied Social Science Associations Annual Meetings, The Andrew Brimmer Policy Forum, "National Economic and Financial Policies for Growth and Stability," Jan. 4, 2004), available at <http://www.brook.edu/views/papers/orszag/20040105.pdf> (last modified Dec. 31, 2003).

⁵¹ A marginal tax cut of, for example, 5 percentage points has a more pronounced effect the higher the initial marginal tax rate is. A variety of economic activities are affected by the after-tax return, which depends on $(1 - t)$. Because $(1 - t)/(1 - t - 0.05)$ is larger the larger t is, the effect of a 5 percentage point tax cut is larger the higher the initial tax rate. For example, reducing tax rates from 70% to 65% raises the after-tax return from 30% to 35%, or by one-sixth; reducing tax rates from 40% to 35% raises the after-tax return from 60% to 65%, or about one-twelfth. Similarly, the distortions caused by a tax are proportional to the square of the tax rate. See generally HARVEY S. ROSEN, *PUBLIC FINANCE* (2d ed. 1988) (providing textbook exposition). The implication is that even if marginal tax cuts have the potential to stimulate growth and to improve economic performance, a given marginal reduction is less likely to do so now than in the 1980s when marginal rates were higher.

proposed tax cuts will emerge, especially because defense and mandatory spending are slated to increase as a percentage of GDP.⁵²

Fifth, the perspectives above on the size of the tax cut and the cost of financing it cast doubt on the claim, often put forward by proponents of extending the tax cuts, that such extensions are necessary to reduce uncertainty.⁵³ 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 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 eventually must be closed. Given the size of the fiscal shortfall, making the tax cuts permanent also may raise legitimate questions about whether implicit or explicit default is a non-trivial possibility, which could spark further uncertainty, most notably in financial markets.⁵⁴

It would be utterly nonsensical to claim that doubling the size of the seventy-five-year actuarial shortfall in Social Security and Medicare Part A would *reduce* uncertainty about future tax and spending policy. But making the tax cuts permanent would increase the fiscal gap to the same extent as doubling the actuarial shortfall. Likewise, the contentious fiscal policy debates of the 1980s and 1990s suggest strongly that cutting revenues by as much as the Reagan tax cuts should not be seen as a way to instill stability in the nation's tax and spending systems. Thus, the notion that making the tax cuts permanent would reduce uncertainty is misguided.

D. What About "Starve the Beast?"

The thrust of the analysis above is that tax cuts generally raise budget deficits and that large, permanent tax cuts are a threat to fiscal stability, especially when the country faces large fiscal shortfalls, even if the tax cuts are not made permanent.⁵⁵ An alternative theory is that

⁵² See generally William G. Gale & Brennan Kelly, *The "No New Taxes" Pledge*, 104 TAX NOTES 197 (2004).

⁵³ See, e.g., Harvey S. Rosen, Council of Econ. Advisers, *The Case for Making the Tax Cuts Permanent*, Remarks for the National Tax Association Spring Symposium (May 20, 2004), <http://www.whitehouse.gov/cea/nta-spring.html> (last visited Nov. 15, 2004).

⁵⁴ Rubin et al., *supra* note 50.

⁵⁵ See *supra* notes 23–54 and accompanying text.

one reason to favor a tax cut is precisely to create pressure to reduce government spending.⁵⁶

In the context of the Bush administration's tax cuts, this claim has at least three components, which include assertions that tax cuts in general are a good way to restrain spending; that the Bush administration's tax cuts in particular, and the effort to make them permanent, are justified by the "starve the beast" theory; and that spending reductions are desirable.

1. Are Tax Cuts an Effective, Safe Way to Reduce Spending?

The "starve the beast" approach simply may not work as a political equilibrium. We have in mind that policymakers jointly go through periods of fiscal restraint and fiscal largesse, and the restraint or largesse occurs simultaneously on both the tax and spending sides. That is, periods of fiscal largesse tend to generate declines in taxes and increases in spending (as shares of GDP). Periods of fiscal discipline tend to provide declines in spending and increases in taxes.

If this characterization is correct, then granting large tax cuts to some groups in an effort to "starve the beast" would make it *less* politically feasible to rein in the desires of other constituencies to obtain increases in spending programs. Although crises do tend to force action, a transparently self-imposed crisis is different from a crisis imposed by external forces. For example, forcing a fiscal crisis through tax cuts skewed to high-income households could stall rather than encourage entitlement reform, because those who would be adversely affected by changes under consideration in Social Security or Medicare may argue that reversing the recent tax cuts would obviate the need for many of the painful benefit and payroll tax changes.

In short, abandoning fiscal discipline on one side of the budget could induce a period of fiscal irresponsibility on both sides of the budget. As a result, it is not even clear whether tax cuts encourage spending increases or restraint, let alone whether they encourage sufficient restraint to offset the entire revenue loss from the tax cut itself.

This "coordinated fiscal discipline" view implies that "starve the beast" will not work, and it is supported by several suggestive pieces of evidence. First, 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% of

⁵⁶ See, e.g., Gary S. Becker, *The Real Reason We Need a Tax Cut*, BUSINESSWEEK, Mar. 19 2001, at 28.

GDP in 2000 to 7.6% in 2003 and a projected 7.8% in 2004, while a massive new entitlement program (the Medicare prescription drug benefit) was also created. All of these spending increases occurred during a period with several large tax cuts and downward revisions to the technical and economic components of the budget forecast.

Second, in practice, budget rules and legislative agreements have proven effective in reducing spending and balancing the budget when restrictions were placed on both tax cuts and spending increases at the same time. The rules imposed in 1990 and extended in 1993 and 1997 imposed restraints on both sides of the budget. Tax cuts and mandatory spending increases had to be paid for with other tax increases or mandatory spending cuts. Discretionary spending was subject to caps. Likewise, the budget deals that were enacted in 1990 and 1993 involved both spending cuts and revenue increases. There is no U.S. evidence of fiscal balance being obtained solely through spending reductions (with the possible exception of reductions in military expenses after a war ended).

Third, the voting records of signers of the "no new taxes" pledge are hard to reconcile with a "starve the beast" theory.⁵⁷ The pledge signers voted overwhelmingly in favor of the Bush administration's tax cuts. In light of those votes, the deteriorating budget outlook, and the fact that they have removed tax increases as a potential fiscal solution, the signers might be expected to be vigilant against spending increases. Yet 86% of signers favored the Medicare prescription drug bill, and almost three-quarters supported the 2004 pork-laden highway bill. These records are inconsistent with the "starve the beast" theory because the same people who voted for permanent tax cuts also voted for permanent spending increases, and they did so at a time of projections of falling long-term revenues.

Fourth, the "starve the beast" theory suggests that revenues and spending are positively correlated (for example, lower revenues generate lower spending), whereas the coordinated fiscal discipline view implies that revenues and spending are negatively correlated. Figure 5 shows that descriptive data since 1981 generally display the pattern suggested by coordinated discipline.⁵⁸ Even after controlling for the

⁵⁷ Gale & Kelly, *supra* note 52.

⁵⁸ Figure 5 reports spending and revenue data that have been "standardized"—that is, with business cycle effects removed. Business cycle considerations will induce a negative correlation between taxes and spending: in good times, taxes are higher as a share of GDP, because the tax system is progressive, and spending is lower as a share of GDP, because the burdens of welfare and unemployment insurance and related programs are smaller. We

business cycle, changes in spending and changes in taxes are negatively correlated over three major periods. Between 2000 and 2004, revenues fell relative to GDP, but spending rose.⁵⁹ Between 1992 and 2000, revenues rose and spending fell. Between 1981 and 1992, revenues fell and total outlays rose. All of these patterns above are inconsistent with the "starve the beast" view.⁶⁰ Thus, lower revenues have proven to be neither necessary (witness the 1990s) nor sufficient (witness the 1980s and the period since 2000) to reduce federal spending.

The formal econometric evidence on whether tax reductions are followed by subsequent spending reductions is mixed.⁶¹ Evidence does suggest that larger budget deficits constrain both spending increases and tax reductions.⁶² This evidence, however, does not distinguish between the two views noted above.⁶³ In particular, the evidence does not imply that revenue reductions will automatically induce spending reductions. The reason is that the evidence is based on historical experiences in which both spending reductions and tax increases were considered jointly as part of fiscal restraint packages. Therefore, the evidence may not apply to a scenario in which the entire adjustment is constrained to occur on the spending side, as the "starve the beast" approach would demand.

define standardized non-interest outlays as standardized aggregate outlays less actual net interest payments.

⁵⁹ Only half of the increase in non-interest spending was due to increased defense and homeland security in response to the 2001 terrorist attacks and the wars in Afghanistan and Iraq.

⁶⁰ See *supra* notes 58–59 and accompanying text. There is one data pattern that at least is not inconsistent with the theory. Between 1981 and 1992, as revenue fell, standardized non-interest spending also fell, but only by 0.4% of GDP. This can hardly be taken as evidence of effective fiscal discipline, though. The ratio of public debt to GDP almost doubled, from 26% in 1981 to 48% in 1992, the largest peacetime growth in the debt ever other than during the Great Depression.

⁶¹ See generally Neela Managè & Michael L. Marlow, *The Causal Relation Between Federal Expenditures and Receipts*, 52 S. ECON. J. 616 (1986) (finding that tax reductions trigger spending cuts). But see generally William Anderson et al., *Government Spending and Taxation: What Causes What?*, 52 S. ECON. J. 630 (1986); George M. von Furstenberg et al., *Tax and Spend or Spend and Tax?*, 68 REV. ECON. & STAT. 179 (1986) (finding no robust relationship between tax changes and subsequent spending changes).

⁶² Alan J. Auerbach, *American Fiscal Policy in the Post-War Era: An Interpretive History* (2004) (paper prepared for the Federal Reserve Bank of Boston's conference, "The Macroeconomics of Fiscal Policy," June 2004; forthcoming publication of conference by M.I.T. Press); Henning Bohn, *Budget Balance Through Revenue or Spending Adjustments? Some Historical Evidence for the United States* (Wharton Sch., Weiss Ctr. for Int'l Fin. Research, Working Paper No. 3-91, 1991) (revised version published as 27 J. MONETARY ECON. 333 (1991)).

⁶³ See *supra* note 56 and accompanying text.

At the very least, it should be clear that there is no compelling evidence that tax cuts constrain spending. The consequences, however, of cutting taxes and then not cutting spending could be severe. To the extent that the "starve the beast" strategy is employed but does not work, the eventual outcome could be a full-blown fiscal crisis.⁶⁴

Fortunately, there are other ways to impose fiscal discipline and reduce spending—if that is the goal—that are both more likely to be effective and less risky if they fail than the tax cuts advocated by "starve the beast" supporters. One approach would be to place more emphasis in the budget process on the long-term fiscal imbalance facing the nation or the adjusted ten-year budget measures discussed above.⁶⁵ Like tax cuts, this would reduce the reported surplus or increase the reported deficit. Unlike tax cuts, however, reforming budget procedures would provide a more accurate picture of the government's finances, would not encourage unaffordable tax cuts (or unaffordable spending increases), and would not create deeper fiscal problems if it failed to restrain spending. Thus, if the goal is to restrict spending, budget reform would likely be at least as effective as, and significantly less risky than, tax cuts.⁶⁶

2. Does "Starve the Beast" Justify the Bush Administration Tax Cuts?

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 Bush administration's tax cuts or an effort to make them permanent for three reasons.

First, many components of government spending predominantly benefit low- and middle-income households.⁶⁷ On fairness grounds, a tax cut whose goal 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 tilt benefits toward high-income households as discussed below.⁶⁸

Second, and perhaps more importantly, whatever resonance "starve the beast" had in 2001, when the government ran current cash-flow surpluses, the government by 2003 was running substantial

⁶⁴ See generally Rubin et al., *supra* note 50.

⁶⁵ See *supra* notes 35–38 and accompanying text.

⁶⁶ See generally Gale & Potter, *supra* note 47.

⁶⁷ See generally C. Eugene Steuerle, *The 2001 Tax Legislation from a Long-Term Perspective*, 54 NAT'L TAX J. 427 (2001).

⁶⁸ See *infra* notes 79–91 and accompanying text.

deficits, so the argument that the tax cuts were necessary to dissipate a surplus that otherwise would have been spent simply was not applicable. Likewise, and even more importantly, with the country facing systematic medium- and long-term deficits, a "starve the beast" motivation for making the tax cuts permanent ignores the budgetary context in which those tax cut extensions would be occurring.

3. Are Spending Cuts Desirable?

If tax cuts do reduce government spending or if spending is reduced some other way, an important question is what other effects that decline creates. Some scholars find cross-country evidence that higher government spending reduces economic growth,⁶⁹ but a number of caveats apply because the results differ across developing and developed countries, and across types of spending.⁷⁰ A number of econometric problems make disentangling the effects of government spending particularly difficult.⁷¹ Spending also may affect other aspects of economic well-being (for example, the environment) or the distribution of income. Hence, a full analysis of spending should account for all of these issues.

E. Sunsets

The analysis above is significantly complicated by the unusual role played by sunsets in the tax cuts.⁷² These sunsets represent a dramatic departure from previous practice in the use of expiring tax provisions. Such provisions have always existed, but have generally applied only to a few minor items or to explicitly temporary tax policies. For example, in January 1992, extending all of the expiring provisions (tax cuts and tax increases) actually would have raised revenue by \$9 billion by 1997. By January 2002, extending all temporary provisions would have reduced revenue by \$38 billion in 2007 and \$297 billion in 2012. The increase largely reflects the effects of the sunsets in the 2001 legislation.

⁶⁹ See generally Robert J. Barro, *Economic Growth in a Cross Section of Countries*, 106 Q.J. ECON. 407 (1991).

⁷⁰ See generally Kevin Grier & Gordon Tullock, *An Empirical Analysis of Cross-National Economic Growth, 1951-80*, 24 J. MONETARY ECON. 259 (1989).

⁷¹ See generally Joel Slemrod, *What Can Be Learned from Cross-Country Studies About Taxes, Prosperity, and Economic Growth?*, in 2 BROOKINGS PAPERS ON ECON. ACTIVITY 373 (William C. Brainard & George L. Perry eds., 1995).

⁷² See *supra* notes 23-71 and accompanying text.

By January 2004, the cost of extending all temporary provisions in 2014 would be \$431 billion, or 2.4% of GDP.⁷³

The extensive use of sunsets creates uncertainty with regard to expectations about future tax policy. It also creates significant complexity in tax planning and in simply understanding the law. Whether sunsets are a good idea depends in large part on why they were enacted. Two sets of arguments could justify sunsets in principle, but neither applies in practice to the 2001 and 2003 tax cuts.

First, in cases where tax incentives *should* be temporary, sunsets represent sound policy.⁷⁴ But it should be clear that the massive recent increase in sunsets is not motivated by an increased desire for truly temporary tax cuts.

Second, even sunsets on provisions that are otherwise intended to be permanent could be construed to have some value.⁷⁵ Controlling for the size of an annual tax cut, a sunset may provide more future policy flexibility than a permanent tax cut, because it is presumably easier politically to allow a sunset to take effect than to reverse a tax cut explicitly. Thus, the sunsets in principle might make it easier to renegotiate the structure and level of taxes, if for no other reason than that they will focus attention on the issue. They therefore could help policymakers address, in the near future, the long-term fiscal gap facing the nation. But a reality check is appropriate. To the extent that policymakers in the near future will be disproportionately the same people who rushed to embrace sunsets as a way of avoiding hard budget decisions, we suspect this view may prove optimistic.

In fact, sunsets over the past few years clearly have been used to hide the true budgetary costs of intended policies and to increase the underlying size of the annual tax cut by allowing a larger annual tax cut to fit within a given multi-year budget total. In essence, the Bush administration gambled in 2001 and again in 2003 that it could get

⁷³ See generally William G. Gale & Peter R. Orszag, *Bush's New Tax Code*, THE POLITIC (Yale), May 8, 2004, available at <http://www.thepolitic.org/>.

⁷⁴ For example, a temporary investment incentive is likely to prove more effective in the short term than a permanent incentive, because it encourages firms to substitute future investment for current investment. The longer the "temporary" incentive is in place, however, the less credible this motivation appears and the more the sunset seems like an accounting gimmick intended to hide the longer-term cost of the provision. Moreover, removing the sunset in this case would be counterproductive, given the purpose of the original policy, and removing or extending the sunset in advance of its termination date would be particularly damaging to the original goal.

⁷⁵ See generally John Maggs, *When Permanent Is Temporary*, 35 NAT'L J. 1477 (2003); Alan Murray, *Tax Break's "Sunset" May Set the Stage for Fiscal Reckoning*, WALL ST. J., May 20, 2003, at A4.

the larger annual tax cuts enacted and then made permanent at a future date, rather than adopting smaller tax cuts that very likely could have been made permanent in the first place (at least in 2001, although the situation in 2003 is more difficult to evaluate).⁷⁶ Policymakers supporting sunsets have every intention of trying to make the policies permanent.⁷⁷ For example, Speaker of the House of Representatives Dennis Hastert indicated just after the House passed the 2003 tax cut that "[t]he \$350 [billion] number takes us through the next two years, basically, . . . 'But also it could end up being a trillion-dollar bill, because this stuff is extendable. That's a fight we're going to have to have. It's not a bad fight to have.'"⁷⁸

Finally, it is worth noting that sunsets of tax provisions create a classic political economy asymmetry in which one (often relatively small) group has much to gain and each member of the general public has only a little to lose. Political economy theory predicts, and evidence confirms, that in such situations, the will of the active minority dominates that of the passive majority. Historically, the sunset provisions fit this model well. Even now, with the massive increase in sun-

⁷⁶ In contrast to the 2001 and 2003 Acts, the 2002 tax cut explicitly was intended to be temporary. In particular, the bonus depreciation provision was intended to be temporary and thereby to create an incentive to accelerate investment that had been planned for the future. To the Bush administration's credit, the budget notes explicitly that the provision was intended to be temporary and opposes making the provision permanent.

⁷⁷ Some policymakers argue that they were somehow forced into adopting the sunsets. After the vote on the conference agreement, for example, Senator Kay Bailey Hutchison was quoted as saying that "[t]he reason we have to sunset some of these taxes is because we had to fit within an artificial constraint of \$350 billion." David Firestone, *With Tax Cut Bill Passed, Republicans Call for More*, N.Y. TIMES, May 24, 2003, at A12 (quoting Sen. Kay Bailey Hutchison). Such claims are at least somewhat disingenuous. In recent years, President Bush and Republican congressional leaders have chosen to push through tax cuts under the protection of the reconciliation rules. Reconciliation legislation cannot be subject to filibuster in the Senate and therefore requires only fifty-one votes to enact. The cost of undertaking this expedited procedure is that policy actions that lose revenue outside the budget window require sixty votes, assuming a point of order is raised against the legislation under the Byrd rule. But the sunset in the conference agreement occurs much earlier than would be required to satisfy the Byrd rule. President Bush and his allies in Congress could have chosen instead to legislate tax changes outside the reconciliation process, in which case the \$350 billion cap would not have applied. Legislation outside the reconciliation process would be subject to filibuster, but only requires fifty-one votes even for a permanent tax cut. Put differently, tax cut advocates made a deliberate choice to use the reconciliation process to push through tax cuts with only a slim majority in support of them. See generally Michael W. Evans, *The Budget Process and the "Sunset" Provision of the 2001 Tax Law*, 99 TAX NOTES 405 (2003) (discussing the Byrd rule and reconciliation).

⁷⁸ Mark Wegner & Richard E. Cohen, *Hastert Salutes "Trillion-Dollar" Tax Bill, Looks To Medicare Debate*, CONGRESSDAILY, May 23, 2003 (a.m.), 2003 WL 19999065 (alteration in original) (quoting Speaker of the House of Representatives Dennis Hastert).

sets, the political model probably captures important future dynamics; after all, some of the provisions that would be most expensive to extend—repeal of the estate tax, the reductions in the top marginal income tax rates, and the bonus depreciation provisions—benefit relatively narrow slices of the population who happen to be both extremely affluent and politically connected.

III. DISTRIBUTIONAL EFFECTS

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. In this Part, we discuss alternative measures of the redistributive impact of tax changes and provide evidence on the impact of the 2001 and 2003 tax cuts, if they are made permanent. We show that the tax cuts will increase the disparity in after-tax income. When the financing of the tax cuts is taken into consideration, all of the measures point to the conclusion that the tax cuts will make high-income households better off at the expense of all other households.

Likewise, although advocates routinely describe the tax cuts as pro-family and pro-small business, we show that most families (that is, families with children) and most taxpayers with small business income will be worse off once the financing is included. Even if the tax cuts raise economic growth by a significant amount (relative to existing estimates of the growth effects), most households will end up worse off after the tax cuts, the growth effect, and the financing are considered than they would have been if the tax cuts had not taken place.

Incorporating the eventual financing of the tax cut into the distributional analysis is a key innovation in the analysis. It is consistent with the fact that the tax cuts must be paid for eventually with either spending cuts or other tax increases. It is consistent with the differential (revenue-neutral) incidence analysis that is the standard in academic treatments of tax incidence. And it makes moot the distracting and misleading debates regarding which of a variety of distributional measures are most appropriate: in analyses that ignore financing, the alternative measures give different results, but when plausible methods of financing are included, all of the measures yield the same qualitative results.

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 fed-

eral taxes and accounting for the financing of the tax cut.⁷⁹ 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, 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. 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.⁸⁰

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 Professor Harvey Rosen)⁸¹ and changes in the share of income tax payments (emphasized by the Office of Management and Budget)⁸² 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.⁸³ 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

⁷⁹ See generally JULIE-ANNE CRONIN, U.S. TREASURY DISTRIBUTIONAL ANALYSIS METHODOLOGY (Office of Tax Analysis, U.S. Dep't of the Treasury, OTA Paper No. 85, 1999), available at <http://www.treas.gov/ota/ota85.pdf>; Jane G. Gravelle, *Economic Issues Affecting Across-the-Board Tax Cuts*, 90 TAX NOTES 367 (2001).

⁸⁰ See *infra* Part III.B–C.

⁸¹ Rosen, *supra* note 53.

⁸² OFFICE OF MGMT. & BUDGET, *supra* note 12.

⁸³ For example, consider a two-person economy in which 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 in 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 or to any other finite number. Drawing these conclusions about the tax cut, however, would be nonsensical. It is also unclear how to deal with households that pay negative net taxes (because, for example, they receive refundable credits) using these approaches.

level or share of taxes paid could actually give the wrong sign for which 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, at least when financing is ignored.⁸⁴

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 in most recent public discussions of these issues.⁸⁵

B. *Distributional Effects Ignoring Financing*

To measure distributional effects, we use the TPC micro-simulation model. 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. 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. The worker bears the burden of both the employer and employee portions of the payroll tax. The estate tax is assigned to decedents.

Table 6 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% of tax filing units would receive a direct tax cut in 2010, with the share rising from only 16% of units in the bottom quintile to more than 99% in the top quintile.

The percentage change in after-tax income would rise as income rises, from 0.3% in the bottom quintile to 4.3% in the top quintile. It rises even further within the top quintile, with a 6.4% increase for the top 1% and a 7.5% increase for tax filing units in the top 0.1%. Thus,

⁸⁴ See *infra* Part III.B.

⁸⁵ See generally, e.g., CONG. BUDGET OFFICE, *supra* note 34.

the tax cuts would raise after-tax income by a greater percentage for high-income households than for all others.

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% in particular. The average tax rate fell more for the top 1% than for any other group. Their share of the tax cut (73%) exceeded their share of tax burdens under pre-EGTRRA (71.7%, not shown). As a result, their share of federal taxes paid fell. The share of post-tax income received would rise. The tax cut in dollars was far larger for high-income groups than low-income groups.

Yet 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% would receive an 11.1% reduction in their federal tax liabilities. This is more than the average reduction, 11%, but it is smaller than the 18.2% reduction in federal tax liabilities experienced by households in the second income quintile. Second, households in the top 1% quintile would actually pay a greater share of the *income* tax after the tax cuts than before.

Thus, at first glance, the distributional results in Table 6 present somewhat of a quandary. To be sure, the most insightful measure—the percentage change in after-tax income—shows that the tax cuts are regressive even without taking financing into account. Many of the other measures also indicate that the tax cuts are skewed toward high-income households, but some suggest the opposite.

As we show below, one way to remove the quandary is to incorporate the financing of the tax cuts in the analysis.⁸⁶ 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 Financing⁸⁷

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

⁸⁶ See *infra* notes 87–91 and accompanying text.

⁸⁷ This Section is based in part on William Gale et al., *Distribution of the 2001 and 2003 Tax Cuts and Their Financing*, 103 TAX NOTES 1539 (2004).

financing is set so that the annual costs of the tax cuts would be fully paid 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 Acts (and the AMT adjustment), but it also "pays" \$1869 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 "lump-sum" or "equal-dollar" financing, with results presented in Table 7. It is the equivalent of the hypothetical lump-sum tax that is used in differential incidence analysis in standard academic research.

The second scenario assumes 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 Acts, but also pays 2.6% of its 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 9.

Under equal-dollar financing, every measure of the distributional effects shows that high-income taxpayers would gain and all other taxpayer groups would lose if the tax cuts were made permanent. Overall, more than three-quarters of taxpayers are made worse off by the tax cuts plus equal-dollar financing, including almost every household in the bottom 40% of the income distribution, 94% in the middle quintile, and even 80% in the fourth quintile. In sharp contrast, 89% of taxpayers in the top quintile and 95% of households in the top 1% 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. Although 76% of households would face net tax increases (or spending cuts), households in the top 1% 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 6), households in the second quintile had substantial 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 of the distribution. In contrast households in the top quintile have net tax cuts.

The last column of Table 7 shows the change in the "income tax" where it is assumed that the financing occurs through the income tax. (This is the only way to incorporate financing into the measure that looks only at the income tax.) Again, the difference from Table 6 is stark. When the financing costs are ignored, high-income households pay a greater share of the income tax after the tax cuts have been enacted. But when financing is included, all of the other groups pay a higher share of the income tax and high-income groups pay a smaller share of the income tax (plus financing) than they would have paid in the absence of the tax cuts. The final column shows the aggregate transfers made across income groups. All groups in the lower 80% of the income distribution transfer resources to the top quintile.

Distributional effects that incorporate proportional financing yield similar results (Table 8). In particular, all of the measures indicate that high-income households benefit at the expense of other households, which lose in aggregate. About 80% 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% of the income distribution are worse off on average, while those in the top quintile are better off.

Distributional analyses also can 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. Controlling for income level, taxpayers with children received larger direct tax cuts than those without children.⁸⁸ About 61% of families with children would be worse off if the tax cuts were made permanent, including 96% of those families in the lowest 40% of the overall income distribution and between 60% and 80% of the families in the third and fourth quintiles. Only in the top quintile would a majority of families with children be better off. Under proportional

⁸⁸ See generally William G. Gale & Laurence Kotlikoff, *Effects of Recent Fiscal Policies on Today's Children and Future Generations*, 103 TAX NOTES 1281 (2004).

financing, 56% of families with children would be worse off if the tax cuts were made permanent.⁸⁹

A second group that has attracted significant attention in recent tax-cut debates includes small businesses, with the tax cuts being described as pro-entrepreneur. In its analyses of this issue, the Bush administration has defined any tax return with Schedule C, E, or F income as a small business. We adopt the same definition here, although we recognize its flaws.⁹⁰ 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.⁹¹ Under proportional financing, 72% of tax filers with business income would be worse off, including more than 60% in the top quintile, and even 37% in the top 1% of the income distribution. Under lump-sum financing, those figures are lower, but even so, a majority (58%) of all tax filers with business income would be worse off, including almost all of those filers in the bottom 40% of the income distribution.

IV. LONG-TERM ECONOMIC GROWTH

A central goal of the recent tax policies, embodied in the titles of the 2001 and 2003 Acts, was to raise economic growth.⁹² The net effect of the tax cuts on growth is theoretically uncertain. Although lower tax rates can encourage work and saving, lower tax levels encourage leisure and consumption, and budget deficits reduce national saving. Several studies have estimated the net effects in different ways with 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 are employed.

⁸⁹ For further discussion, see generally *id.*

⁹⁰ See generally Leonard Burman et al., *Thinking Through the Tax Options*, 99 TAX NOTES 1081 (2003).

⁹¹ A subsequent Part of this Article examines the effects on economic growth and discusses the effects of the tax cuts on incentives for entrepreneurial entry and investment. See *infra* notes 92–154 and accompanying text.

⁹² Tax policy can affect the economy's underlying growth rate, create a one-time shift in the level of economic activity, or both. Both effects change the size of the future economy and will be considered to imply an effect of taxes on economic growth.

A. Taxes and Growth: Channels of Influence

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 for 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. It is by no means the only effect, however, 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, and 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.

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 cannot 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 often are 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, although 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 there is 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 cut would involve (1) minimal increases in the budget deficit to avoid the long-term fiscal drag created by lower national saving and higher interest rates, and (2) a pattern of substitution and income effects to encourage an increased supply of labor and capital and reduced consumption, including the careful targeting of tax cuts on *new* economic activity, rather than the provision windfall gains for previous activities. The 2001 and 2003 tax cuts score poorly on both criteria.

1. Deficits

If the 2001 and 2003 tax cuts are made permanent (and the AMT is adjusted so that the number of people on the AMT in each year is the same under the extended tax cuts as it would have been in that year under pre-2001 law), the 2001 and 2003 tax cuts will increase the federal debt by \$4.4 trillion in 2014, or by 24% of GDP in that year. This will reduce income and raise interest rates significantly in that year and future years and hence will make the environment for long-term growth more difficult.

To calibrate the effect on national income, note that President Bush's Council of Economic Advisers ("CEA") reports that "one dollar of [public] debt reduces the [domestic] capital stock by about 60 cents."⁹³ 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

⁹³ COUNCIL OF ECON. ADVISORS, ECONOMIC REPORT OF THE PRESIDENT 58 box 1-4 (2003), available at http://www.gpoaccess.gov/usbudget/fy04/pdf/2003_erp.pdf.

without taking into account the greater foreign ownership of that capital. If the return to capital is 6%, then in 2015, GDP will be \$156 billion lower than it otherwise would have been, or about 0.8% of projected GDP, because of the effects of the tax cut on the deficit.⁹⁴ More importantly, because private saving plausibly would offset perhaps one-quarter of the increase in public debt,⁹⁵ the capital stock owned by Americans would decline by \$3.3 trillion (75% of the \$4.4 trillion in additional public debt), so that national income in 2015 would be almost \$200 billion lower (slightly more than 1% of projected GDP). This translates into a cost of more than \$1000 per household in that year alone and would continue indefinitely.

To calibrate the effect of the deficits on interest rates, note that recent estimates imply that an increase in the ratio of the public debt to GDP by 1 percentage point would raise real interest rates by 3 basis points.⁹⁶ If so, the deficits created by the 2001 and 2003 tax cuts, if they are made permanent (and the AMT is adjusted), would raise interest rates by 72 basis points in 2014 and reduce investment. Our own estimates find that real long-term interest rates would rise by between 44 and 67 basis points per percent of GDP in increased primary deficits.⁹⁷ Because making the tax cuts permanent would raise the primary deficit by about 2% of GDP, our findings suggest that the impact on interest rates would be 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 the 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 over-

⁹⁴ See generally CONG. BUDGET OFFICE, *supra* note 34.

⁹⁵ For example, the CBO concludes that private saving would rise by between 20% and 50% of an increase in the deficit. See generally CONG. BUDGET OFFICE, DESCRIPTION OF ECONOMIC MODELS (1998), available at <http://cbo.gov/ftpdocs/10xx/doc1046/econmdls.pdf> (last modified Nov. 20, 1998). Douglas Elmendorf and Jeffrey Liebman conclude that private saving would offset 25% of an increase in the deficit. See generally Douglas W. Elmendorf & Jeffrey B. Liebman, *Social Security Reform and National Saving in an Era of Budget Surpluses*, in 2 BROOKINGS PAPERS ON ECON. ACTIVITY 1 (William C. Brainard & George L. Perry eds., 2000). William Gale and Samara Potter estimate that private saving will offset 31% of the decline in public saving caused by the 2001 cut. See generally Gale & Potter, *supra* note 47.

⁹⁶ See generally ERIC M. ENGEN & R. GLENN HUBBARD, FEDERAL GOVERNMENT DEBT AND INTEREST RATES (Nat'l Bureau of Econ. Research, Working Paper No. 10681, 2004).

⁹⁷ See generally William G. Gale & Peter R. Orszag, *Budget Deficits, National Saving, and Interest Rates* (Sept. 2004) (forthcoming in BROOKINGS PAPERS ON ECON. ACTIVITY), available at http://www.brookings.edu/es/commentary/journals/bpea_macro/forum/090704_orszag.pdf (last modified Sept. 7, 2004).

come in order to raise economic growth. Unfortunately, the tax cuts are not well-designed to overcome these obstacles.

2. Income and Substitution Effects

The effects of the tax cuts on marginal tax rates are surprisingly small. Using the Treasury Department's tax model, the 2001 tax cut, when fully phased in, will provide no reduction in marginal tax rates for 76% of tax filing units (including non-filers) and 72% of filers, and 64% of those with positive tax liability would receive no reduction in marginal tax rates.⁹⁸ These taxpayers account for 38% of all taxable income. The marginal tax rate on *taxable* wages, interest, dividends, and sole proprietorship income fell by between 1.6 and 2.4 percentage points.⁹⁹ The *economy-wide* reduction in taxes on capital income, however, is likely to be significantly smaller, because a substantial share of such income flows to non-taxable entities, such as pension funds and non-profits. For example, the CBO found economy-wide declines of just 0.5 percentage points for capital income and 1.6 percentage points for wage income.¹⁰⁰ 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% of filers, who collectively represent more than 40% of taxpayers and report 30% of all taxable income, would not see a reduction in marginal tax rates, relative to pre-EGTRRA law.¹⁰¹ Households that do not receive reductions in marginal tax rates are typically either on the AMT or in the 15% bracket. This suggests that the positive incentives from the tax cuts on labor supply, saving, investment, and so on are likely to be limited.

In addition to modest incentive effects, the tax cuts also created positive income effects that will reduce labor supply, saving, and investment. First, the creation of the new 10% bracket, and the expansion of the child credit generate positive income effects for all income tax payers with children, and 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% (50 mil-

⁹⁸ See generally Donald Keifer et al., *The Economic Growth and Tax Relief Reconciliation Act of 2001: Overview and Assessment of Effects on Taxpayers*, 55 NAT'L TAX J. 89 (2002).

⁹⁹ See generally *id.*

¹⁰⁰ See generally CONG. BUDGET OFFICE, *supra* note 44.

¹⁰¹ See *supra* notes 25-26 and accompanying text.

lion) of all filers with an income tax cut, representing 34% 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 filers actually face increases in marginal tax rates. All of these households would receive positive income effects (higher after-tax income), but either no substitution effect or a negative substitution effect. For all of these households, the tax cuts would likely reduce labor supply.

Second, besides creating positive income effects, but not substitution effects, for many taxpayers and besides not reducing marginal tax rates substantially, the 2001 and 2003 tax cuts did not do a good job of targeting new investment. The key issue is that the reductions in dividend 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.¹⁰²

In summary, although the recent tax acts reduce marginal tax rates, they also 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.¹⁰³ Professor Auerbach uses an overlapping generations life-cycle model 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.¹⁰⁴ He

¹⁰² 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 generally*, e.g., David Altig et al., *Simulating Fundamental Tax Reform in the United States*, 91 AM. ECON. REV. 574 (2001).

¹⁰³ *See supra* notes 93–102 and accompanying text.

¹⁰⁴ *See generally* ALAN J. AUERBACH, THE BUSH TAX CUT AND NATIONAL SAVING (Nat'l Bureau of Econ. Research, Working Paper No. 9012, 2002). The model was developed in ALAN J. AUERBACH & LAURENCE J. KOTLIKOFF, DYNAMIC FISCAL POLICY (1987).

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 ten, fifteen, or twenty 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 twenty years, the economy is smaller under each of these scenarios by between 0.4% and 1.2%. In the long term (about 150 years), the decline in the size of the economy ranges between about 0.6% and more than 2%.

The tax cuts could also be financed with spending cuts. Professor Auerbach shows that 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—the tax cut does raise the long-term capital stock per capita, but the long-term increase is just 0.5%.¹⁰⁵ If only half of the tax cuts are financed *immediately* upon enactment with reductions in government consumption, and the remaining shortfall is made up beginning ten years after enactment with capital income taxes, however, the long-term capital stock per capita is lower than it would have been in the absence of the tax cuts.¹⁰⁶ Because it seems clear that reductions in government consumption over the last few years did not finance the tax cuts (because such reductions did not occur), Professor Auerbach's analysis implies strongly that the impact on long-term growth will be negative.¹⁰⁷

Two other studies use large macroeconomic models to examine the long-term effects of the tax cuts.¹⁰⁸ Douglas W. Elmendorf and David L. Reifschneider use a rational-expectations, open-economy model based on the Federal Reserve Board ("FRB") model of the economy.¹⁰⁹ 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

¹⁰⁵ See generally AUERBACH, *supra* note 104.

¹⁰⁶ See generally *id.*

¹⁰⁷ See generally *id.*

¹⁰⁸ Christopher L. House and Matthew D. Shapiro 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 it does not address the long-term effects of the deficits that would be created by making the tax cuts permanent. See generally CHRISTOPHER L. HOUSE & MATTHEW D. SHAPIRO, PHASED-IN TAX CUTS AND ECONOMIC ACTIVITY (Nat'l Bureau of Econ. Research, Working Paper No. 10415, 2004).

¹⁰⁹ See generally Douglas W. Elmendorf & David L. Reifschneider, *Short-Run Effects of Fiscal Policy with Forward-Looking Financial Markets*, 55 NAT'L TAX J. 357 (2002).

economy relative to the baseline. A recent analysis reaches similarly pessimistic conclusions about the long-term effects of making the tax cuts permanent.¹¹⁰

The most comprehensive aggregate analysis of the long-term effects of tax cuts was undertaken by twelve economists at the CBO.¹¹¹ This study examines the effects of a generic 10% statutory reduction in all income tax rates, including those applying to dividends, capital gains, and the AMT. 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 on 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 the tax cut they examine the following: (1) *every* taxpayer receives a reduction in marginal tax rates, so 100% of taxable income is affected, as opposed to 62%, for example, under EGTRRA, as discussed above; and (2) there are no positive income effects from provisions other than marginal tax rate cuts, again unlike EGTRRA and JGTRRA.¹¹² As the study states, "the reduction in marginal tax rates is large compared with the overall budget cost."¹¹³

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

¹¹⁰ See Mark M. Zandi, *Assessing President Bush's Fiscal Policies*, DISMAL SCIENTIST, July 2004, at 7, 9, available at http://www.economy.com/dismal/economycom_bushfiscalpolicy.pdf. Doctor Mark M. Zandi stated the following:

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.

Id.

¹¹¹ See generally ROBERT DENNIS ET AL., *MACROECONOMIC ANALYSIS OF A 10 PERCENT CUT IN INCOME TAX RATES* (Cong. Budget Office, Technical Paper No. 2004-07, 2004), available at <http://www.cbo.gov/ftpdocs/54xx/doc5485/2004-07.pdf> (last modified May 27, 2004).

¹¹² See *supra* notes 98–99 and accompanying text.

¹¹³ DENNIS ET AL., *supra* note 111, at 8.

assume that the tax cuts are financed either by reductions in government consumption or by increases in tax rates. In either case, the financing begins after ten years and increases gradually for another ten years and then is 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 9.¹¹⁴ In the three scenarios in which the tax cuts are financed by increases in income taxes, the long-term effects generally are negative. In the Ramsey model and the closed-economy OLG model, GDP and gross national product ("GNP") fall significantly. In the open-economy OLG model, GDP rises slightly (0.2%), but GNP falls by even more than in the other models. The open-economy results occur because tax cuts reduce national saving and hence increase capital inflows. The inflow, in conjunction with increased labor supply, is sufficient to raise the output produced on American soil slightly. The capital inflows, however, must eventually be repaid and doing so reduces GNP, even though GDP rises. Ultimately, of course, future living standards of Americans depend on GNP, not GDP.¹¹⁵

In the three scenarios in which 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% in the long-run, but GNP falls by 0.4%.¹¹⁶ The sole case that is uniformly positive for growth occurs when (1) the tax cuts are financed by reductions in government purchases, and (2) the policy is run through the Ramsey model, in which case long-term GDP would rise by about 0.8%. As the authors note, however, 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.¹¹⁷ Empirical evidence rejects

¹¹⁴ We thank David Weiner and Robert Dennis for providing the gross national product results, which are not provided in the report.

¹¹⁵ See generally Douglas W. Elmendorf & N. Gregory Mankiw, *Government Debt*, in 1C HANDBOOK OF MACROECONOMICS 1615 (John B. Taylor & Michael Woodford eds., 1999).

¹¹⁶ 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." Timothy Catts, *Congress Prepares for Looming Budget Season*, 102 TAX NOTES 559, 559 (2004) (quoting CBO Director Douglas Holtz-Eakin); see Edmund Andrews, *Budget Office Forecasts Record Deficit in '04 and Sketches a Pessimistic Future*, N.Y. TIMES, Jan. 27, 2004, at A21; Jonathon Weisman, *CBO Says '04 Deficit Will Rise to \$477 Billion; Extending Tax Cuts Could Double Debt*, WASH. POST, Jan. 27, 2004, at A01.

¹¹⁷ DENNIS ET AL., *supra* note 111, at 9.

this view.¹¹⁸ In addition, if this result did hold, it would imply that households did not spend any of their tax cuts in 2001, 2002, and 2003, a proposition that has been rejected in recent analysis.¹¹⁹

D. "Bottom up" or Sectoral Analyses

"Bottom up" analyses¹²⁰ 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.

1. Lower National Saving Versus Better Incentives

Our previous work in this area has concluded that the 2001 tax cuts would generate negative effects on long-term growth. Peter Orszag used estimates from Jonathan Gruber and Emmanuel Saez on the elasticity of "broad" income, a concept similar to national income, with respect to marginal tax rates.¹²¹ 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.

¹¹⁸ See Gale & Orszag, *supra* note 97. 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. The CBO has found the following:

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 to 2013

But the tax legislation will probably have a net negative effect on saving, investment, and capital accumulation over the next 10 years. . . .

The tax laws' net effect on potential output . . . will probably be negative in the second five years.

CONG. BUDGET OFFICE, *THE BUDGET AND ECONOMIC OUTLOOK: AN UPDATE 45* (2003), available at <http://www.cbo.gov/ftpdocs/44xx/doc4493/08-26-Report.pdf> (last modified Aug. 25, 2003). The JCT 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. See generally JOINT COMM. ON TAXATION, *ESTIMATED BUDGET EFFECTS OF THE CONFERENCE AGREEMENT FOR H.R. 2*, *supra* note 8. Although the JCT does not report results beyond the ten-year window, the language implies that the growth effect would continue to decline. See generally Burman et al., *supra* note 90.

¹¹⁹ DAVID S. JOHNSON ET AL., *HOUSEHOLD EXPENDITURE AND THE INCOME TAX REBATES OF 2001* (Nat'l Bureau of Econ. Research, Working Paper No. 10784, 2004).

¹²⁰ The terminology is from Slemrod, *supra* note 71.

¹²¹ See generally JON GRUBER & EMMANUEL SAEZ, *THE ELASTICITY OF TAXABLE INCOME: EVIDENCE AND IMPLICATIONS* (Nat'l Bureau of Econ. Research, Working Paper No. 7512, 2000); PETER R. ORSZAG, *CTR. ON BUDGET & POLICY PRIORITIES, MARGINAL TAX RATE REDUCTIONS AND THE ECONOMY: WHAT WOULD BE THE LONG-TERM EFFECTS OF THE BUSH TAX CUT?* (Mar. 16, 2001), available at <http://www.cbpp.org/3-15-01tax.pdf>.

Doctor Orszag then compared that positive effect to the negative effect on future national income from the reduced national saving associated with the 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.

William Gale and Samara Potter estimate the long-term effects of making the 2001 tax cut permanent.¹²² 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% by 2011. As noted above, however, the supply-side effects are not the only channel through which the tax cuts will operate.¹²³ William Gale and Samara 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% by 2011. After allowing for capital inflows, based on historical relationships, they estimate that the net effect would be to reduce GDP by about 0.3% by 2011 and reduce GNP by 0.7%.¹²⁴

An important earlier study estimates that a generic 5 percentage point reduction in marginal tax rates would raise annual growth rates by 0.2 to 0.3 percentage points for a decade.¹²⁵ This calculation is often invoked by supporters of the Bush administration's tax cuts,¹²⁶ but it is entirely inappropriate to apply these effects to EGTRRA and JGTRRA. First, the tax cut that Eric M. Engen and Jonathan Skinner examine is implicitly 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 several times the size of the cut in effective economy-wide marginal tax rates on wages and capital income induced by EGTRRA and JGTRRA, as noted above.¹²⁷ A tax cut that increases deficits substantially but cuts marginal rates by much less than the 5 percentage point reduction that Doctor Engen and Professor Skinner examine is,

¹²² See generally Gale & Potter, *supra* note 47.

¹²³ See *supra* Part IV.A.

¹²⁴ See generally Gale & Potter, *supra* note 47.

¹²⁵ See generally Eric Engen & Jonathan Skinner, *Taxation and Economic Growth*, 49 NAT'L TAX J. 617 (1996), available at [http://ntj.tax.org/wwtax/ntjrec.nsf/9365D2A1D719E93C85256863004B1F4F/\\$FILE/v49n4617.pdf](http://ntj.tax.org/wwtax/ntjrec.nsf/9365D2A1D719E93C85256863004B1F4F/$FILE/v49n4617.pdf).

¹²⁶ See generally, e.g., Charles W. Calomiris & Kevin A. Hassett, *Marginal Tax Rate Cuts and the Public Tax Debate*, 55 NAT'L TAX J. 119 (2002); Rosen, *supra* note 53.

¹²⁷ See *supra* notes 99–100 and accompanying text.

even under the Engen-Skinner behavioral assumptions, not likely to generate positive economic growth.¹²⁸

2. Investment and Entrepreneurship

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 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. 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.¹²⁹ By 2014, EGTRRA, if extended, would increase the public debt by just over \$3.4 trillion, or about 19% of GDP in 2014.¹³⁰ This implies an interest rate increase of 57 basis points using the Eric Engen and Glenn Hubbard estimates noted above and larger effects using the William Gale and Peter Orszag estimates.¹³¹ Thus, recent estimates of the impact of debt on interest rates imply that EGTRRA will raise the cost of capital for new investments and hence reduce investment.

In more recent work, we show that the net effect of making both EGTRRA and JGTRRA permanent would be to raise the cost of capital once the interest rate effects are taken into account.¹³² 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, would likely improve the long-term *allocation* of the capital stock between corporate and non-corporate uses, which would raise output even with the same or lower level of investment. In particular, the dividend and capital gains reductions could

¹²⁸ See generally Gale & Potter, *supra* note 47 (providing additional discussion of the Eric Engen and Jonathan Skinner results and differences between the tax cuts they analyze and the recent tax changes).

¹²⁹ See generally *id.*

¹³⁰ This calculation is based on JCT estimates of the effects of EGTRRA as legislated, The TPC microsimulation model estimates of the effects of extending the tax cuts, and debt services costs using the CBO interest rate matrix.

¹³¹ See generally ENGEN & HUBBARD, *supra* note 96; Gale & Orszag, *supra* note 97.

¹³² See generally William G. Gale & Peter R. Orszag, Tax Cuts, Interest Rates, and the User Cost of Capital (n.d.) (work in progress).

help to reduce biases in the allocation of capital by reducing the generally higher tax imposed on capital invested in the corporate sector.¹³³ Although precise estimates are not available, even supporters of the 2003 tax cut acknowledge that the benefits from improved allocation of capital are likely to be small.¹³⁴ For example, former CEA Chairman R. Glenn Hubbard suggested in a speech at the American Economic Association in January 2004 that the allocative improvements induced by the Bush administration's original proposal would raise the long-term level of GDP by 0.2 percentage points.¹³⁵ The dividend and capital gains tax proposal that was actually enacted, however, is inferior to the original proposal because the enacted proposal does not ensure that corporate income is taxed at least once. The allocative efficiency gains therefore are likely to be smaller under the enacted tax cut than under the Bush administration's proposal.¹³⁶ Jane Gravelle and Mark M. Zandi conclude that the net benefits of the dividend and capital gains tax cuts are likely to be quite small, if positive at all.¹³⁷

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 doubly hurt. First, their cost of

¹³³ But see generally Leonard E. Burman et al., *The Administration's Savings Proposals: Preliminary Analysis*, 98 TAX NOTES 1423 (2003) (discussing concerns about the ability of the enacted dividend cuts to resolve the double taxation problem); William G. Gale & Peter R. Orszag, *The Administration's Proposal to Cut Dividend and Capital Gains Taxes*, 20 TAX NOTES 415 (2003). For further discussion, see generally DINO FALASCHETTI & MICHAEL J. ORLANDO, CUTTING THE DIVIDENDS TAX . . . AND CORPORATE GOVERNANCE TOO? (Dept. of Econ., Wash. U. St. Louis, Fin. Working Paper No. 0311008, 2003), available at <http://econwpa.wustl.edu:8089/eps/fin/papers/0311/0311008.pdf> (providing analysis of how the new treatment of dividends could affect corporate governance adversely) and Jeffrey L. Rubinger, *Converting Low-Taxed Income into "Qualified Dividend Income,"* 103 TAX NOTES 858 (2004) (offering analysis of how the new treatment of dividends could create new tax shelters).

¹³⁴ The Council of Economic Advisors (the "CEA") suggested that under the Bush administration's original dividend proposal, the improved efficiency would generate gains equal to between 0.08% and 0.5% of GDP. COUNCIL OF ECON. ADVISORS, *supra* note 93, at 204 (calculations from dollar amounts given by the CEA).

¹³⁵ R. Glenn Hubbard, Presentation at the American Economic Association Meeting (Jan. 4, 2004).

¹³⁶ In any case, even if the 0.2% 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 made by William Gale and Samara Potter or by Peter Orszag, the net effects would be roughly a zero effect on long-term growth. See generally Gale & Potter, *supra* note 47; ORSZAG, *supra* note 121.

¹³⁷ See generally Jane Gravelle, *Effects of Dividend Relief on Economic Growth, the Stock Market, and Corporate Tax Preferences*, 56 NAT'L TAX J. 653 (2003); Zandi, *supra* note 110.

capital for new investments would rise because of the increase in interest rates, so that their overall investment would likely decline, as discussed above.¹³⁸ Second, these effects would be accentuated by the dividend tax cut, which could shift investment funds away from non-corporate businesses, where entrepreneurs are disproportionately located, and toward C corporations.

Other effects on self-employment and risk-taking are not as clear. 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 have found 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.¹³⁹ William M. Gentry and R. Glenn Hubbard estimate that increased convexity (progressivity) in the tax structure will reduce entrepreneurial activity.¹⁴⁰

The Tax Reform Act of 1986 ("TRA 86") has been estimated to have raised the investment, hiring, and income growth of small businesses.¹⁴¹ 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, and so did not raise deficits, interest rates, or the cost of capital.

Julie Berry Cullen and Roger H. Gordon note several interactions between entrepreneurial activity and tax rates, including the option that small business owners have to incorporate in order to shelter funds.¹⁴² They find that the direct tax effects of the 2001 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 ef-

¹³⁸ See *supra* notes 129–132 and accompanying text.

¹³⁹ See generally WILLIAM M. GENTRY & R. GLENN HUBBARD, "SUCCESS TAXES," ENTREPRENEURIAL ENTRY, AND INNOVATION (Nat'l Bureau Econ. Research, Working Paper No. 10551, 2004) (reviewing the literature).

¹⁴⁰ See generally William M. Gentry & R. Glenn Hubbard, Tax Policy and Entry into Entrepreneurship (Nov. 13, 2002) (unpublished manuscript), <http://www.nber.org/~confer/2003/entf03/lerner.pdf>.

¹⁴¹ See generally ROBERT CARROLL ET AL., ENTREPRENEURS, INCOME TAXES, AND INVESTMENT (Nat'l Bureau Econ. Research, Working Paper No. 6374, 2002); ROBERT CARROLL ET AL., INCOME TAXES AND ENTREPRENEURS' USE OF LABOR (Nat'l Bureau Econ. Research, Working Paper No. 6578, 1998); ROBERT CARROLL ET AL., PERSONAL INCOME TAXES AND THE GROWTH OF SMALL FIRMS (Nat'l Bureau Econ. Research, Working Paper No. 7980, 2000).

¹⁴² See generally JULIE BERRY CULLEN & ROGER H. GORDON, TAXES AND ENTREPRENEURIAL ACTIVITY: THEORY AND EVIDENCE FOR THE U.S. (Nat'l Bureau Econ. Research, Working Paper No. 9015, 2002).

fects 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.¹⁴³ 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 United States had no income tax, and tax revenues were just 3% of GDP. From 1947 to 1999, the highest income tax rate averaged 66%, and federal revenues were about 18% 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.¹⁴⁴ In formal tests, Nancy L. Stokey and Sergio Rebelo find no evidence of a break in growth patterns around World War II.¹⁴⁵ 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 United States had only one major tax cut between 1965 and 2000. Some scholars find that the 1981 tax cuts had virtually no net impact on economic growth.¹⁴⁶ This may be

¹⁴³ See *supra* notes 53–142 and accompanying text.

¹⁴⁴ See generally William G. Gale, *Notes on Taxes, Growth, and Dynamic Analysis of New Legislation*, in *THE FUTURE OF AMERICAN TAXATION: ESSAYS COMMEMORATING THE 30TH ANNIVERSARY OF TAX NOTES 29* (Joseph J. Thorndike ed., 2002), available at http://www.aei.org/docLib/20021222_conf021210d.pdf.

¹⁴⁵ See generally Nancy L. Stokey & Sergio Rebelo, *Growth Effects of Flat-Rate Taxes*, 103 J. POL. ECON. 519 (1995).

¹⁴⁶ See generally MARTIN FELDSTEIN, *BUDGET DEFICITS, TAX RULES, AND REAL INTEREST RATES* (Nat'l Bureau of Econ. Research, Working Paper No. 1970, 1986); Martin Feldstein & Douglas W. Elmendorf, *Budget Deficits, Tax Incentives, and Inflation: A Surprising Lesson from the 1983–1984 Recovery*, in 3 *TAX POLICY AND THE ECONOMY 1* (Lawrence H. Summers ed., 1989).

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 1981 Act also 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.¹⁴⁷ Other studies find no tax effects on growth in developed countries.¹⁴⁸ Fabio Padovano and Emma Galli find that a 10 percentage point reduction in marginal tax rates raises the growth rate by 0.11 percentage points in Organisation for Economic Co-Operation and Development ("OECD") countries.¹⁴⁹ Eric Engen and Jonathan Skinner 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.¹⁵⁰

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% of GDP will raise GDP by 0.1% after ten years if the Federal Reserve follows a Taylor rule for monetary policy.¹⁵¹

¹⁴⁷ For a critique of the literature, see generally Oliver Blanchard & Roberto Perotti, *An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output*, 117 Q.J. ECON. 1329 (1999) (providing additional evidence, but focusing on short-term effects) and Slemrod, *supra* note 71.

¹⁴⁸ See generally Charles B. Garrison & Feng-Yao Lee, *Taxation, Aggregate Activity and Economic Growth: Further Cross-Country Evidence on Some Supply-Side Hypotheses*, 30 ECON. INQUIRY 172 (1992); Enrique G. Mendoza et al., *On the Ineffectiveness of Tax Policy in Altering Long-Run Growth: Harberger's Superneutrality Conjecture*, 66 J. PUBLIC ECON. 99 (1997).

¹⁴⁹ See generally Fabio Padovano & Emma Galli, *Tax Rates and Economic Growth in the OECD Countries*, 39 ECON. INQUIRY 44 (2001). Stefan Fölster and Magnus Henrekson find no tax effects on growth in Organisation for Economic Co-Operation and Development ("OECD") countries. See generally Stefan Fölster & Magnus Henrekson, *Growth Effects of Government Expenditure and Taxation in Rich Countries*, 45 EUR. ECON. REV. 1501 (2001). 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.

¹⁵⁰ ERIC ENGEN & JONATHAN SKINNER, *FISCAL POLICY AND ECONOMIC GROWTH* 43 tbl.4 col. 4 (Nat'l Bureau of Econ. Research, Working Paper No. 4223, 1992). Statistical insignificance might be attributed to the fact that there are only twenty-one 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.

¹⁵¹ See generally David Reifschneider et al., *Aggregate Disturbances, Monetary Policy, and the Macroeconomy: The FRB/US Perspective*, 85 FED. RESERVE BULL. 1 (1999); John B. Taylor, *Discretion Versus Policy Rules in Practice*, 39 CARNEGIE-ROCHESTER CONF. SERIES ON PUB. POL'Y 195 (1993).

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 TRA 86 on the long-term size of the economy was 1%.¹⁵² 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. The most complete model of tax reform finds that a flat tax with transition relief would raise national income by 0.5% after fifteen years.¹⁵³ Without transition relief, the flat tax would impose a one-time wealth tax, and the economy would grow by 2.2% over fifteen 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.¹⁵⁴ This has two implications for interpreting the recent tax cuts. First, the effects of the much smaller effective marginal tax rate reductions involved in the 2001 and 2003 Acts would be much less significant. Second, the dividend and capital gains tax cuts in the 2003 Act subsidize old investment rather than imposing a one-time tax on it. The subsidy to old investment will reduce any positive effects on growth.

V. SHORT-TERM STIMULUS

A particular goal of each of the 2001, 2002, and 2003 tax cuts was to spur the economy in the short term. According to the National Bureau of Economic Research Business Cycle Dating Committee, a recession began in March 2001 and ended in November 2001. Figure 6

¹⁵² See generally Victor R. Fuchs et al., *Economists' Views About Parameters, Values, and Policies: Survey Results in Labor and Public Economies*, 36 J. ECON. LIT. 1387 (1998).

¹⁵³ See generally Altig et al., *supra* note 102.

¹⁵⁴ See generally STAFF OF JOINT COMM. ON TAXATION, JOINT COMMITTEE ON TAXATION TAX MODELING PROJECT AND 1997 TAX SYMPOSIUM PAPERS (JCS-21-97) (Comm. Print 1997), available at <http://www.house.gov/jct/s-21-97.pdf>; Altig et al., *supra* note 102; Alan J. Auerbach, *Tax Reform, Capital Allocation, Efficiency, and Growth*, in ECONOMIC EFFECTS OF FUNDAMENTAL TAX REFORM 29 (Henry J. Aaron & William G. Gale eds., 1996); Kenneth L. Judd, *The Impact of Tax Reform in Modern Dynamic Economies*, in TRANSITION COSTS OF FUNDAMENTAL TAX REFORM 5 (Kevin A. Hassett & R. Glenn Hubbard eds., 2001).

shows, however, that economic activity remained sluggish for an extended period of time after the official end of the recession. Real GDP growth remained weak until the latter part of 2003, and employment growth was even more sluggish, with non-farm employment remaining below its November 2001 level well into 2004.

According to President Bush's chief economic adviser, N. Gregory Mankiw, the economy has done better in the short term with the recent tax cuts than it would have without: "[i]f we had left taxes exactly as they were when the president took office, many, many more people would be unemployed today. What I'm saying is sort of standard economy textbook economics."¹⁵⁵

Professor Mankiw's statement is narrowly and carefully framed, but it does not address the real questions associated with the short-term effects of the tax cuts, and it should not be interpreted as evidence that the tax cuts represent an effective short-term stimulus for at least two reasons.¹⁵⁶ First, the statement compares the tax cuts to doing nothing, whereas other policy changes—including differently structured tax cuts and spending programs—were and are relevant options. Second, Professor Mankiw's statement focuses only on whether any stimulus was provided. But in an economy with excess capacity, such as the United States between 2001 and 2004, many forms of fiscal loosening—whether a tax cut or spending increase—can spur aggregate demand and therefore provide a short-term boost to the economy.

A key issue is whether the stimulus was provided in the most effective way. In particular, we focus on the "bang for the buck"—the effective stimulus per dollar spent—and we examine the tax cuts compared to other alternatives, not just compared to doing nothing.

We show that the passage of the tax cuts was well-timed to offset economic downturns, but several elements of the structure of the tax cuts were poorly designed to provide a short-term stimulus. For example, the tax cuts were predominantly back-loaded and did not channel funds toward groups with the highest marginal propensity to consume additional resources. In addition, many of the provisions were intended to stimulate saving, not consumption. As a result of these design flaws—from the perspective of providing stimulus—the tax cuts had at best a small positive "bang for the buck" relative to

¹⁵⁵ Timothy Catts, *White House Economists Laud Tax Cuts as Source of Economic Recovery*, 102 TAX NOTES 826 (2004) (quoting N. Gregory Mankiw).

¹⁵⁶ See *infra* notes 158–160 and accompanying text.

other options. The most comprehensive studies to date by academic researchers imply that the tax cuts *reduced* GDP and employment in 2001, and had virtually no effect on these aggregates in 2002. An alternative package, such as one containing significant state fiscal relief and tax cuts targeted at low-income households, could have provided more stimulus with lower short-term and long-term budgetary costs.

Before turning to these issues, we emphasize the important distinctions between the short-run stimulus effect of tax policies and the long-term growth effects emphasized in the previous Part.¹⁵⁷ In a slack economy, tax policies can affect short-term GDP by changing aggregate demand. In the long run, however, tax policies change the size of the economy by altering aggregate supply—the level and allocation of labor supply, saving, investment, and risk-taking. Thus, although both patterns are commonly referred to as “economic growth,” they are conceptually distinct.

A. *Estimates of the Short-Term Effects of Recent Tax Cuts*

1. Overall Effects

A number of studies provide evidence on the effects of the tax cuts on short-term economic activity. Christopher L. House and Matthew D. Shapiro use a general equilibrium model to examine the effects of stylized tax cuts that are very similar in structure, timing, and magnitude to the 2001 and 2003 tax cuts.¹⁵⁸ They find that the 2001 tax cut substantially *reduced* employment, output, and investment during 2001 and had no effect during 2002. They are not alone in this assessment. *The Wall Street Journal*, a strong supporter of the tax cuts, asserts that “delayed tax cuts are likely to depress the economy.”¹⁵⁹ Professors House and Shapiro estimate that in the first six months following the enactment of the policy, GDP falls below trend by 0.9%, and employment falls by 0.1%. Investment falls sharply initially and remains below trend for two and one-half years, with very big declines (0.6% of trend) in the first quarter. Consumption rises and stays high. In the second year (2002), GDP is just barely above trend by 0.02%. This pattern and the general magnitude of the effects holds regardless of whether the tax cuts are perceived as temporary or permanent.¹⁶⁰

¹⁵⁷ See *supra* notes 92–154 and accompanying text.

¹⁵⁸ See generally HOUSE & SHAPIRO, *supra* note 108.

¹⁵⁹ *Waco Call*, WALL ST. J., Aug. 13, 2002, at A20.

¹⁶⁰ See generally HOUSE & SHAPIRO, *supra* note 108.

The reasoning is straightforward. Phased-in, or deferred, tax cuts on labor income currently give workers incentives to work less (because after-tax wages are low currently relative to future values), but to consume more now (because of the income effect associated with future tax cuts). Deferred tax cuts on capital income help spur investment now because the investment returns, which occur largely in the future, will be taxed at lower rates. The 2001 tax cut was a combination of deferred tax cuts on labor and capital income, but the overall effects of the cut mirror those of labor income tax cuts because labor income constitutes the large majority of overall income and because tax rates were cut more on labor income than on capital income in 2001. Professors House and Shapiro have examined the bonus depreciation provisions enacted in 2002.¹⁶¹ They have shown that these policies raised output by about 0.1% in 2003 and 2004.

Professors House and Shapiro have also examined the effects of the 2003 tax cut, which accelerated the implementation of the provisions of the 2001 Act and reduced the taxation of dividends and capital gains.¹⁶² Thus, the 2003 Act provides incentives to raise labor supply and production immediately. Overall, the results suggest that GDP was lower in 2001 than it would have been without the tax cuts, was about the same in 2002 as it would have been otherwise, and was about 2.4% higher in 2004 than it would have been in the absence of the tax cuts.¹⁶³ Such effects are significant, but need to be compared to the costs: the tax cuts reduced revenue in 2004 alone by about \$270 billion, or 2.4% of GDP.

The 8% annualized growth rate in the third quarter of 2003, shown in Figure 1, led some advocates to claim that the tax cuts had proven to be an effective stimulus. Formal analysis, however, suggests that tax cuts were only a very small part of the one-quarter spurt in activity. An estimate based on Professors House and Shapiro, for example, would find that the recent tax cuts raised GDP by just 0.6% in the third quarter of 2003.¹⁶⁴ Economy.com attributed about 1.0 percentage point of the growth spurt to the tax cuts.¹⁶⁵ Many additional

¹⁶¹ See generally Christopher L. House & Matthew D. Shapiro, *Temporary Investment Tax Incentives: Theory with Evidence from Bonus Depreciation* (Sept. 28, 2004), available at <http://www.econ.yale.edu/seminars/macro/mac04/house041026.pdf> (paper presented at Yale Dep't Econ., Macroeconomics Workshop, Oct. 26, 2004).

¹⁶² See generally HOUSE & SHAPIRO, *supra* note 108.

¹⁶³ See generally *id.*; House & Shapiro, *supra* note 161.

¹⁶⁴ See generally HOUSE & SHAPIRO, *supra* note 108; House & Shapiro, *supra* note 161.

¹⁶⁵ *Contributions to Real GDP Growth*, ECONOMY.COM (2003).

factors contributed, including an expansive monetary policy, which reduced short- and long-term interest rates to historic lows and spurred huge amounts of mortgage refinancing. Other factors may have contributed, too, such as a reduction in uncertainty following the major military campaign in Iraq, the technology cycle, government spending, and so on.

Other studies also yield results indicating small effects of the tax cuts on the economy. Doctors Elmendorf and Reifschneider, using the FRB-US model, conclude that an income tax cut of 1.0% of GDP increases real GDP by between 0.5% and 1.0% after one year, depending on the responsiveness of financial markets and the share of households that base their consumption on current income rather than permanent income.¹⁶⁶

The CBO used two macroeconometric models to analyze the short-term impact of the budget proposals included in the Bush administration's Fiscal Year 2004 budget, which included the basic framework of the 2003 tax cut.¹⁶⁷ It found that the effect on real GDP in 2004 would be between 1.0% and 1.3%, about the same magnitude as the increase in the budget deficit as a share of GDP under the Bush administration's policies relative to the CBO baseline.

2. Effects on Consumption

Several studies have examined the effects of the 2001 and 2003 "rebates" on consumer spending. These studies generally suggest small aggregate impacts on consumption.

a. *The Marginal Propensity to Consume*

Matthew D. Shapiro and Joel B. Slemrod report that 22% of households receiving the 2001 rebate reported that they expected to "mostly spend" it, as opposed to saving it or using it to pay down debt.¹⁶⁸ They report a plausible set of assumptions that implies that the aggregate marginal propensity to consume out of the rebate was

¹⁶⁶ See generally Elmendorf & Reifschneider, *supra* note 109.

¹⁶⁷ See generally CONG. BUDGET OFFICE, AN ANALYSIS OF THE PRESIDENT'S BUDGETARY PROPOSALS FOR FISCAL YEAR 2004 (2003), available at <http://cbo.gov/ftpdocs/40xx/doc4080/Report.pdf> (last modified Mar. 28, 2003).

¹⁶⁸ Matthew D. Shapiro & Joel Slemrod, *Consumer Response to Tax Rebates*, 93 AM. ECON. REV. 381, 381 (2001).

about 35%.¹⁶⁹ They also claim, based on answers to follow-up questions and the wording of the original question, that the results are best interpreted as describing what households intended to do with the rebate during the first year after receipt. Finally, they show that personal saving rates spiked in the months when the rebate was received, and that the increase in personal saving can be accounted for fully by the tax rebates.

David S. Johnson, Jonathan A. Parker, and Nicholas S. Souleles find somewhat stronger effects on consumption.¹⁷⁰ Using a special module of the Consumer Expenditure Survey designed to elicit survey responses about how households used the rebate, and exploiting the fact that the timing of the rebates was essentially random, the authors find that households spent between 20% and 40% of the rebates on non-durable goods during the three-month period in which the rebates were received and spent perhaps another third of the rebate in the second three-month period.

Two studies have also examined the effects of the changes in the child credit and withholding allowances in 2003. Professors Shapiro and Slemrod find that among those who qualified for the child credit expansion, 26% said they would "mostly spend" the funds, 26% would save the funds, and the remainder would pay down debt.¹⁷¹ The change in withholding rules generated even smaller propensities to spend. Julia Coronado, Joseph Lupton, and Louise Sheiner estimate the determinants of the usage of funds reported by households.¹⁷² They obtain an estimated aggregate marginal propensity to consume of 24% for income due to the changes in the child credit and 16% for income due to the changes in withholding.

b. *Effect on Aggregate Consumption*

The studies of the 2001 rebate suggest marginal propensities to consume out of the rebate ranging from 35% over the first year to two-thirds in the first six months. Because the rebates totaled \$38 billion in 2001, or 0.38% of GDP, the effect on consumption would be between \$13 billion and \$26 billion, or between 0.13% and 0.26% of GDP in 2001. For the 2003 tax cut, both the size of the rebates and

¹⁶⁹ See generally Matthew D. Shapiro & Joel Slemrod, *Did the 2001 Tax Rebate Stimulate Spending? Evidence from Taxpayer Surveys*, 17 TAX POL'Y & ECON. 83 (2003).

¹⁷⁰ See generally JOHNSON ET AL., *supra* note 119.

¹⁷¹ See generally Shapiro & Slemrod, *supra* note 169.

¹⁷² See generally Julia Coronado et al., Bd. of Governors, Fed. Reserve Sys., *Priming the Pump? Household Spending Responses to the 2003 Tax Cuts* (2004) (work in progress).

the estimated marginal propensity to consume out of them appear to be somewhat smaller. In short, the aggregate effects of the rebates on consumption and GDP were quite small.

3. Effects on Investment

A number of studies examine the effects of the accelerated depreciation provisions of the 2002 tax cut. The effect of the bonus depreciation provision is smaller when the inflation and nominal interest rates are lower, because the difference between expensing and depreciation is attenuated at low inflation.¹⁷³ Goldman Sachs suggests that given the relatively low levels of nominal interest rates and inflation, the value of the bonus depreciation provision is "relatively modest." The Goldman Sachs calculations suggest that the bonus depreciation provision reduces the after-tax cost of computer purchases, for example, by only 2%.¹⁷⁴ Darrel S. Cohen, Dorthé-Pernille Hansen, and Kevin A. Hassett estimate that bonus depreciation reduced the cost of capital on new equipment investment by between 1.2% and 4%, depending on the tax life of the asset and assumptions about whether the provision would be made permanent.¹⁷⁵ Applying an investment elasticity of about 0.7 suggests that investment would rise by between 0.8% and 2.8%.¹⁷⁶ Because equipment investment is less than 10% of GDP, investment would rise by roughly 0.1% to 0.3% of GDP. Mihir A. Desai and Austan D. Goolsbee find that the bonus depreciation provisions may have raised investment by 2%.¹⁷⁷ As noted above, Professors House and Shapiro find almost no impact of the bonus depreciation provisions on GDP.¹⁷⁸

The effect of the reduction in dividend and capital gains taxes in 2003 on investment depends on whether the old or new view holds, on the identity of the marginal investor, and on other factors. Robert Car-

¹⁷³ See generally Darrel S. Cohen et al., *The Effects of Temporary Partial Expensing on Investment Incentives in the United States*, 55 NAT'L TAX J. 457 (2003).

¹⁷⁴ *Depreciation Bonus to Have Minor Impact on Investment*, US ECON. DAILY FIN. MARKET COMMENT' (Goldman, Sachs & Co. Inv. Research, New York, N.Y.), Jan. 21, 2004.

¹⁷⁵ See generally Cohen et al., *supra* note 173.

¹⁷⁶ See generally Jason G. Cummins et al., *A Reconsideration of Investment Behavior Using Tax Reforms as Natural Experiments*, in 2 BROOKINGS PAPERS ON ECON. ACTIVITY 1 (William C. Brainard & George L. Perry eds., 1994) (deriving the 0.7 value from empirical data), available at http://www.aei.org/docLib/20030213_rahass94b.pdf (date posted Jan. 1, 2000).

¹⁷⁷ See generally Mihir A. Desai & Austan D. Goolsbee, *Investment, Capital Overhang and Fiscal Policy* (Sept. 2004), available at http://www.brookings.edu/dybdocroot/es/commentary/journals/bpea_macro/forum/090704desai.pdf.

¹⁷⁸ See *supra* note 161 and accompanying text.

roll, Kevin A. Hassett, and James B. Mackie III estimate that President Bush's plan would reduce the economy-wide marginal effective tax rate on capital to 17.3% from 19.1% under the old view and to 16.6% from 17.4% under the new view.¹⁷⁹ Those estimates translate into reductions in the user cost of capital of about 1%. (Doctors Carroll, Hassett, and Mackie provide a crosswalk from the effective tax rate to the user cost of capital.)¹⁸⁰ In short, the likely investment responses from the dividend and capital gains rate reductions and the bonus depreciation provisions should be expected to be small.

C. *Bang for the Buck*

William Gale, Peter Orszag, and Gene Sperling discuss the concept of the "bang for the buck," the ratio of the stimulative effect of a tax cut (or spending program) divided by the revenue loss (or budget costs).¹⁸¹

1. Tax Structure

A recovery package with a significant "bang for the buck" needs to be both well-timed and well-structured. The recent tax cuts were well-timed, but poorly structured for short-term stimulus. It should not be surprising that the tax cuts were poorly structured to provide stimulus. The 2001 Act was designed in 1999 in a booming economy in which recession was not a central concern. Rather, the motivating issues were how to offset a political attack from Steve Forbes and how to fashion a long-term tax cut. The original legislation proposed by President Bush after he was inaugurated contained no tax cuts until 2002. The 2001 "rebates" were added by the Congress.

Historically, discretionary tax policy has had a weak record in stimulating short-term economic activity in a timely and effective

¹⁷⁹ See generally Robert Carroll et al., *The Effect of Dividend Tax Relief on Investment Incentives*, 56 NAT'L TAX J. 629 (2003).

¹⁸⁰ See generally *id.*

¹⁸¹ See generally William Gale et al., *Tax Stimulus Options in the Aftermath of the Terrorist Attack*, 93 TAX NOTES 255 (2001), available at <http://www.brook.edu/dybdocroot/views/articles/gale/20011008.pdf>. The importance of focusing on the "bang for the buck" was highlighted in October 2001 in an unusual bipartisan statement from the Republican and Democratic leaders of the budget committees in the House of Representatives and the Senate supporting a stimulus package and putting forward several key principles, including that the measures should "achieve the greatest possible stimulus effect per dollar spent." See SENATE BUDGET COMM. & HOUSE BUDGET COMM., 107TH CONG., REVISED BUDGETARY OUTLOOK AND PRINCIPLES FOR ECONOMIC STIMULUS 5 (2001), available at http://budget.senate.gov/democratic/press/2001/rev_bdgoutlook100401.pdf.

manner.¹⁸² Timing, in particular, has been a major problem in the past. It was not uncommon for the economy to have already entered a recovery stage by the time Congress enacted countercyclical legislation. In sharp contrast, the recent tax cuts have been extremely well-timed to address the economic slowdown. The 2001 tax cut was enacted while the economy was in recession. The 2002 and 2003 tax cuts were enacted while economic activity remained sluggish.

Despite the fortuitous timing, however, the tax cuts were designed poorly for stimulus purposes. First, the 2001 tax cut was heavily back-loaded, with phased-in reductions in marginal tax rates. Such back-loading reduces the ability of the tax cut to stimulate the economy for several reasons. The projected out-year costs raise long-term interest rates immediately, which dampens demand for durable goods and investments.¹⁸³ The phase-in of lower tax rates can reduce labor supply¹⁸⁴ and may delay the potential increase in spending.¹⁸⁵

Second, the tax cuts were regressive; in particular, they provided larger percentage increases in after-tax income for higher-income households than for lower-income households. Although the evidence is not determinative, it appears that low-income households have higher marginal and average propensities to spend out of current income than higher-income households.¹⁸⁶ Evidence from the 2001 tax

¹⁸² See generally LAWRENCE B. LINDSEY, *THE GROWTH EXPERIMENT: HOW THE NEW TAX POLICY IS TRANSFORMING THE U.S. ECONOMY* (1990); Franco Modigliani & Charles Stein, *Is a Tax Rebate an Effective Tool for Stabilization Policy?*, in 1977 BROOKINGS PAPERS ON ECON. ACTIVITY 175 (Arthur M. Okun & George L. Perry eds., 1977); John B. Taylor, *Reassessing Discretionary Fiscal Policy*, J. ECON. PERSPECTIVES, Summer 2000, at 21.

¹⁸³ See generally Elmendorf & Reifschneider, *supra* note 109; William G. Gale & Peter R. Orszag, *The Economic Effects of Sustained Budget Deficits*, 56 NAT'L TAX J. 463 (2003).

¹⁸⁴ See generally HOUSE & SHAPIRO, *supra* note 108.

¹⁸⁵ See generally NICHOLAS S. SOULELES, *CONSUMER SENTIMENT: ITS RATIONALITY AND USEFULNESS IN FORECASTING EXPENDITURE—EVIDENCE FROM THE MICHIGAN MICRO DATA* (Nat'l Bureau Econ. Research, Working Paper No. 8410, 2001) (revised version published as Nicholas S. Souleles, *Expectations, Heterogeneous Forecast Errors, and Consumption: Micro Evidence from the Michigan Consumer Sentiment Surveys*, 36 J. MONEY, CREDIT & BANKING 39 (2004), available at http://finance.wharton.upenn.edu/~souleles/research/papers/Conf_JMCB55.pdf); Nicholas S. Souleles, *The Response of Household Consumption to Income Tax Refunds*, 89 AM. ECON. REV. 947 (1999) [hereinafter Souleles, *Income Tax Refunds*]; Jonathan Parker, *The Consumption Function Re-Estimated* (Aug. 1999) (unpublished manuscript), <http://www.princeton.edu/~jparker/research/cfunc1199.pdf>.

¹⁸⁶ See generally KAREN E. DYNAN ET AL., *DO THE RICH SAVE MORE?* (Fed. Reserve Bd., Fin. & Econ. Discussion Series No. 2000-52, 2000), available at <http://www.federalreserve.gov/pubs/feds/2000/200052/200052pap.pdf>; JOHNSON ET AL., *supra* note 119; Parker, *supra* note 185. The CBO notes that "[a]s a general proposition, higher-income households save more of their income than do lower-income households. Although occasionally some data emerge to indicate otherwise, a large accumulation of evidence continues to show that as a house-

cuts bears out this tendency. David S. Johnson, Jonathan A. Parker, and Nicholas S. Souleles show that the marginal propensity to consume the 2001 rebate was 0.75 for households in their low-income category, substantially higher than their overall average of 0.20 to 0.40.¹⁸⁷

Third, many of the provisions from the 2001 and 2003 tax cuts—including estate tax repeal, and increases in tax-free savings allowances—ostensibly were designed to raise saving, regardless of their actual effect. Raising saving is precisely the opposite of what is required to provide short-term demand stimulus.

Fourth, even those provisions that ostensibly were designed to raise consumption, such as reductions in dividend taxes, were inefficient ways of doing so.¹⁸⁸ One claim was that dividend tax cuts would boost the stock market, raising wealth and therefore raising consumption. This effect is likely to be small relative to other options. Under simplifying assumptions, a reduction in the present value of dividend taxes by one dollar should raise the stock market by one dollar and raise current consumption spending by just three to five cents.

Fifth, generally temporary investment incentives should encourage more demand in the near term than permanent incentives (because a temporary incentive has a more substantial effect on the after-tax cost of investment today relative to the future). The bonus depreciation provisions were explicitly temporary at least partially for this reason. Even with this provision, however, policymakers may have undercut the stimulus effect. First, contrary to theory and evidence, the Bush administration's economists argued that making the tax cuts

hold's income rises, the proportion of that income that is consumed falls." CONG. BUDGET OFFICE, ECONOMIC STIMULUS: EVALUATING PROPOSED CHANGES IN TAX POLICY 7 (2002), available at <http://www.cbo.gov/ftpdocs/32xx/doc3251/FiscalStimulus.pdf> (last modified Jan. 4, 2002).

¹⁸⁷ See generally JOHNSON ET AL., *supra* note 119, Matthew D. Shapiro and Joel B. Slemrod report that there is no difference by income group in households answers to questions about whether they "mostly spent" the data. But as they note, the relation between respondent's answers to the question and their actual Marginal Propensity to Consume ("MPC") is more subtle. Thus, their findings do not necessarily imply that the MPC is the same across income groups. See generally Shapiro & Slemrod, *supra* note 169. In addition, none of the consumption studies mentioned above take into account the fact that high-income households received a larger permanent (or decade-long) tax cut than did low-income households in 2001 and 2003. To the extent that households adjust their consumption based on expected future income, those adjustments imply that the studies could be overestimating the MPC among high-income households and therefore underestimating the extent to which the MPC for low-income households exceeds the MPC for high-income households.

¹⁸⁸ See generally Burman et al., *supra* note 90; Gravelle, *supra* note 137.

permanent would provide a bigger stimulus.¹⁸⁹ Second, although the 2002 tax cut set the first-year write-off at 30% of investment value for investments made before September 11, 2004, in 2003 Congress and the Bush administration extended the expiration date to the end of 2004 and expanded the write-off to 50%. These legislative actions and encouragement by senior Bush administration officials may have given businesses the indication that policymakers were willing to consider extending this provision or making it permanent. Indeed, a survey by the National Association of Business Economists, released on January 20, 2004, found that 62% of respondents expected the provisions to be extended.¹⁹⁰ (Interestingly, an even larger share, 73%, reported that bonus depreciation had no effect on their firm's investment.)¹⁹¹

¹⁸⁹ On the October 7, 2001, edition of *This Week*, George Stephanopoulos asked then CEA Chairman Glenn Hubbard whether temporary investment incentives would have a larger "bang for the buck" than permanent incentives. Glenn Hubbard claimed that was not the case:

STEPHANOPOULOS: And [the President] says the answer is tax cuts, but the bipartisan leadership of the House and Senate Budget Committee says that any tax cuts have to be temporary. The president's business tax cuts are permanent.

Mr. HUBBARD: Well, I wouldn't put it quite that way. I think what the leadership is saying is that we want a tax package that doesn't have very long-term adverse consequences for the budget. That could include some things that look like permanent changes. For example, accelerating the rate cuts is just simply moving forward something that was to have happened anyway. The expensing plan the president mentioned with also a very small out year cost.

STEPHANOPOULOS: Well, but-but once you get more bang for the buck on that business expensing, if the businesses know they have one shot at it, they have to do it now.

Mr. HUBBARD: Wrong. The one thing we know in economics about very temporary investment incentives is that in Washington, we have very poor ability to fine tune and micromanage the economy. A permanent investment incentive would be the best way to go or at least one that's of several year's duration.

This Week (ABC television broadcast, Oct. 7, 2001).

¹⁹⁰ *Employment Finally Improves as the Economy Roars Ahead: NABE Panel, ART AND AIM* (Rhodes Econometrics, Inc., Lake Oswego, Or.), Jan. 19, 2004 (presenting information from the National Association for Business Economics, Washington, D.C.).

¹⁹¹ *Id.* Another issue in designing a stimulus package is whether temporary income tax cuts or one-time rebates focused on low-income households may have a higher "bang for the buck" than permanent tax cuts aimed at higher income households. Both theory and evidence suggest that the propensity to spend out of permanent tax cuts is higher than for temporary tax cuts. See generally MILTON FRIEDMAN, *A THEORY OF THE CONSUMPTION FUNCTION* (1957); SOULELES, *supra* note 185. Nevertheless, temporary tax cuts focused on liquidity-constrained households might nonetheless have a higher "bang for the buck" than permanent tax cuts aimed at high-income (non-constrained) households. First, the evidence suggests some positive responses to temporary tax cuts and further suggests that households do not respond to scheduled tax changes until they take effect. See generally Alan S. Blinder, *The Time Series Consumption Function Revisited*, in 1985 BROOKINGS PAPERS

2. Estimates

Given the concerns listed above, it is perhaps not surprising that estimates of the “bang for the buck” of the enacted tax cuts are relatively low, and estimates for other policies are significantly higher.¹⁹² For example, as noted above, evidence indicates that the tax cuts raised GDP by 0.6% in 2004.¹⁹³ Yet the tax cuts in 2004 alone reduced revenues by \$286 billion, or about 2.5% of GDP. Using these estimates, the “bang for the buck” is extremely low, just 0.24 (0.6/2.5).

A number of studies and statements bear out the conclusion that a tax cut or spending increase that was more progressive and more focused on consumption rather than saving would have provided a much larger “bang for the buck” than the tax cuts did.

First, data in Economy.com imply a “bang for the buck” of about 0.70 for the President Bush’s tax proposals in 2003.¹⁹⁴ But the programs with the largest “bang for the buck” are those that target low- and moderate-income households, including the child tax credit rebate (1.04) and the acceleration of the 10% bracket (1.34). In contrast, the dividend tax cut scored remarkably poorly in this regard, with a “bang for the buck” less than 0.10.¹⁹⁵ Likewise, several policies emphasized by

ON ECON. ACTIVITY 465 (William C. Brainard & George L. Perry eds., 1985); Arthur M. Okun, *The Mirage of Steady Inflation*, in 1971 BROOKINGS PAPERS ON ECON. ACTIVITY 485 (Arthur M. Okun & George L. Perry eds., 1971); Jonathan Parker, *The Reaction of Household Consumption to Predictable Changes in Social Security Taxes*, 89 AM. ECON. REV. 959 (1999); James M. Poterba, *Are Consumers Forward Looking? Evidence from Fiscal Experiments*, 78 AM. ECON. REV. 413 (1988) (showing positive responses to temporary tax cuts); Nicholas S. Souleles, *Consumer Response to the Reagan Tax Cuts*, 85 J. PUB. ECON. 99 (2002); Souleles, *Income Tax Refunds*, *supra* note 185. In particular, evidence suggests that a significant portion of the population bases consumption decisions on current income rather than permanent income, perhaps because they are liquidity constrained. See generally John Campbell & N. Gregory Mankiw, *Permanent Income, Current Income, and Current Consumption*, 8 J. BUS. & ECON. STAT. 265 (1990). For such households, the propensity to spend out of temporary tax breaks may be roughly the same as the propensity to spend out of permanent tax breaks. Indeed, David S. Johnson, Jonathan A. Parker, and Nicholas S. Souleles found that low-income households consumed most of the rebates they received from the 2001 tax legislation. See generally JOHNSON ET AL., *supra* note 119. But see generally Shapiro & Slemrod, *supra* note 169 (finding no such income-related responses). Second, permanent tax cuts impose substantially larger fiscal costs than temporary tax cuts. Thus, the “bang for the buck” may be lower for permanent tax cuts than for temporary cuts even if the marginal propensity to consume is higher.

¹⁹² See *supra* notes 182–191 and accompanying text.

¹⁹³ See *supra* note 161 and accompanying text.

¹⁹⁴ *The Economic Impact of the Bush and Congressional Democratic Economic Stimulus Plans*, ECONOMY.COM (Feb. 2003); *Regional Financial Review*, ECONOMY.COM (May 2003).

¹⁹⁵ This is consistent with a statement signed by ten winners of the Nobel Prize in Economics, which noted that “[t]he permanent dividend tax cut, in particular, is not credible

others receive high scores. Extension of federal unemployment insurance benefits had the single highest bang-for-the-buck ratio, 1.74. Aid to state governments also would prove to be a very helpful stimulus, with a ratio of 1.24. Economy.com offers an alternative set of proposals that would emphasize increasing aggregate demand among low- and moderate-income households and estimates a "bang for the buck" of several times that of President Bush's tax proposals.¹⁹⁶

The CBO reports similar rankings of President Bush's policies and other policies.¹⁹⁷ The CBO concludes that "bang[s] for the buck" are "small" for accelerating the EGTRRA tax-rate cuts, which JGTRRA did, and for cutting taxes on capital gains, and they are "medium" for temporary investment incentives.¹⁹⁸ The largest ratios were found for tax cuts aimed at low- and moderate-income households.

All of these items imply that the tax cuts were poorly designed to stimulate the economy, and that better options could have provided a bigger short-term boost with a smaller long-term cost.

VI. TAX REFORM

In think tank circles and academic conferences, former top Bush administration officials and other tax-cut supporters sometimes defend the tax cuts as a piecemeal approach to fundamental tax reform and a way to move the nation toward a consumption tax. These defenses are clever, because reform seems a nobler goal than merely slashing taxes. Consistent with fundamental reform, the recent tax cuts and Bush administration proposals have reduced marginal tax rates on capital income and flattened the rate structure. But the similarities end there.

First, a well-designed consumption tax can modestly raise national saving and economic growth. To obtain this result, though, the consumption needs to (1) be revenue-neutral, (2) broaden the base, (3) tax existing capital—that is, not provide transition relief, and (4) treat interest income and expense in a consistent manner. But the recent tax cuts (1) lose substantial amounts of revenue, (2) do not broaden the base, (3) reduce taxes on existing capital, and (4) increase the difference in the tax treatment of interest income and expense.

as a short-term stimulus." ECONOMISTS' STATEMENT OPPOSING THE BUSH TAX CUTS (Feb. 10, 2003), available at http://www.epinet.org/stmt/2003/statement_signed.pdf.

¹⁹⁶ See generally Zandi, *supra* note 110.

¹⁹⁷ See generally CONG. BUDGET OFFICE, *supra* note 186.

¹⁹⁸ *Id.* at 27 tbl.1.

Second, some tax-cut supporters downplay such concerns, arguing that the criticisms represent the perfect as being the enemy of the good. But the underlying point is that the system that emerges from President Bush's tax cuts has many of the worst features of *both* the previously existing tax system and a fundamentally reformed system. The tax cuts will generate none of the potential growth effects of fundamental reform, and in fact will reduce long-term economic growth. There will be no efficiency gains from broadening the base, because no base broadening has occurred. There will be efficiency losses from increasing taxpayers' ability to shelter income, due to the enlarged difference between the taxation of capital income and capital expense. One feature that the current tax system now shares with fundamental reform, compared to the tax system before 2001, is increased regressivity.

Third, recent tax cuts and current proposals do not move the system toward a well-designed consumption tax or a well-designed wage tax. Instead, tax policy and proposals in the Bush administration move the tax system toward a wage tax that is imposed only on low- and middle-income households, because upper-income households would be able to take disproportionate advantage of the fact that capital income would be increasingly exempt from taxation, but interest payments would still be tax-deductible. And by cutting revenue and rates without implementing any of the necessarily painful steps that real reform would necessarily entail, the tax cuts probably have diminished the political possibilities of enacting a well-designed tax reform.

The bottom line is that the recent tax cuts, and the proposed additional policies, would reduce national saving, reward owners of existing capital, and create new shelters by substantially reducing the taxation of capital income while retaining deductions for borrowing costs. These features are not consistent with *any* sensible tax system—whether based on income, consumption, or wages. Moreover, the changes will prove regressive and will make the changes associated with serious tax reform more difficult to establish in the future. This hardly amounts to an agenda for fundamental tax reform.

A. Fundamental Tax Reform

The U.S. "income" tax features graduated tax rates and a tax base that is a complex hybrid between consumption and income, with some features that are inconsistent with income or consumption taxa-

tion.¹⁹⁹ Proposals for so-called fundamental tax reform—such as the flat tax or a national retail sales tax—aim to replace the current income tax, and sometimes other taxes as well, with a broad-based, flat-rate tax on consumption.²⁰⁰

1. Consumption Taxes

The theoretical case for a consumption tax is easy to understand: the goal is to raise national saving. Higher national saving would boost long-term economic growth and living standards, because it would provide more machines, computers, and other productivity-increasing equipment over time. Workers would enjoy higher earnings because, with the extra equipment, they would be able to produce more per hour.

All studies find that shifting to a *well-designed* consumption tax would generate at least modest increases in national saving and economic growth.²⁰¹ To be “well-designed”—that is, to generate an increase in national saving—a consumption tax needs to contain at least the following four features: (1) it should raise (at least) the same amount of revenue as the taxes it replaces, (2) it should broaden the tax base, (3) it should not provide transition relief to existing capital, and (4) it should treat capital income and expense consistently. Although the literature is unanimous in showing that a well-designed consumption tax raises national saving and long-term economic growth, the four features above are essential to obtaining that result. It is by no means clear that a consumption tax change that omits these features has positive economic effects.

It is clear why each of these design features matters. First, a consumption tax that raises the same amount of revenue as the taxes it replaces does not increase the federal deficit and thus does not reduce federal saving.²⁰² This makes it easier to raise national saving, the

¹⁹⁹ See generally COUNCIL OF ECON. ADVISORS, *supra* note 93.

²⁰⁰ See generally ROBERT HALL & ALVIN RABUSHKA, *THE FLAT TAX* (1995) (proposing a flat tax).

²⁰¹ See generally, e.g., JOINT COMM. ON TAXATION, *supra* note 154; ECONOMIC EFFECTS OF FUNDAMENTAL TAX REFORM, *supra* note 154; Altig et al., *supra* note 102; Judd, *supra* note 154.

²⁰² To be clear, to obtain this result, the tax has to be budget neutral as well as revenue neutral. That is, the tax has to raise sufficient revenue to maintain the existing level of government programs. See generally William G. Gale, *The Required Tax Rate in a National Retail Sales Tax*, 52 NAT'L TAX J. 443 (1999) (discussing further budget neutrality in the context of a national retail sales tax).

sum of private and public saving. The more public saving falls, the greater the increase in private saving needed to raise national saving.

Second, a broader tax base allows for lower tax rates, holding revenue constant. Even though consumption is smaller than income, a consumption tax could in principle have a broader base than the current "income" tax if the former taxes major consumption items like housing and health care that are subsidized in the current system. But that cannot happen if a move to a consumption tax is achieved simply by eliminating the taxation of saving.

Third, a well-designed consumption tax reduces the taxation on new saving but not on the return to, or principal on, existing capital. In fact, it imposes an extra tax on existing capital. To see why, think of someone with \$100 in the bank at the time a consumption tax is adopted. Under an income tax, the owner of the bank account could withdraw the money and spend it without being taxed. Under a consumption tax, though, the \$100 would be taxed when it is withdrawn and spent. Because the \$100 bank account does not buy as much, after tax, its value is reduced under a consumption tax.²⁰³

As a result, the shift to a well-designed consumption tax would actually *reduce* the value of existing assets to their owners. A key finding in academic analysis is that almost all of the economic benefit from moving to a consumption tax derives from this one-time tax it places on existing assets.²⁰⁴ In contrast, consumption taxes that provide transition relief to existing capital—even if they are well designed in the other ways described above—generate little or no positive effect on long-term growth.²⁰⁵

Fourth, a well-designed consumption tax would eliminate the ability of taxpayers to deduct interest costs if they are not required to pay

²⁰³ If the pre-tax price level falls after transition to a consumption tax, the issue is somewhat more complex, but the basic result holds. See generally David F. Bradford, *Consumption Taxes: Some Fundamental Transition Issues*, in *FRONTIERS OF TAX REFORM* 123 (Michael I. Boskin ed., 1996).

²⁰⁴ For example, a standard flat tax with a personal exemption of \$9500 would raise the size of the economy by 2.2% after fourteen years if assets held at the time of transition were subject to the tax, as they would be under a consumption tax. But if at least partial transition relief were granted for assets held at the time of transition (by continuing to allow depreciation allowances on such assets), the economy would only be 0.5% larger after fourteen years. See generally Altig et al., *supra* note 102; Auerbach, *supra* note 154; Eric M. Engen & William G. Gale, *The Effects of Fundamental Tax Reform on Saving*, in *ECONOMIC EFFECTS OF FUNDAMENTAL TAX REFORM*, *supra* note 154, at 83.

²⁰⁵ See *supra* notes 201–204 and accompanying text.

tax on interest or other capital income.²⁰⁶ Without such a restriction, large tax sheltering opportunities could be created. Imagine, for example, someone who borrows \$100 and deposits the money in a tax-free savings account. If the individual borrows the money in a tax-deductible form (for example, through a home equity loan), the net effect is to create a tax shelter. The investment returns on the account would be free from taxation, so no tax would be owed on the income, but the individual would still enjoy a deduction for the borrowing costs.

The principal downside to even a well-designed flat-rate consumption tax is that it is likely to be regressive relative to the current system. Moving from a pure income tax base to a pure consumption tax base, holding the rate structure constant, is regressive because lower-income families tend to consume a larger share of their income than higher-income families. Moving from a graduated rate structure to flat rates, holding the tax base constant, is also regressive, because it reduces the taxation of more affluent families relative to the less affluent. As a result, the combined shift in base and rates involved in moving from a progressive income tax to a flat-rate consumption tax is regressive.²⁰⁷

2. Wage Taxes

The fundamental difference between wage and consumption taxes involves the treatment of people who own assets at the time the new tax system is enacted. Intuitively, this result stems from the fact that, under some simplifying assumptions, future consumption can be financed from either existing assets or future wages. Both items are taxed under a consumption tax. But if existing assets are exempted, the result is a tax on wages.

Thus, a consumption tax imposes a tax on assets held at the time of the transition; future consumption that is financed out of existing assets is fully taxable. As a result, a consumption tax actually *reduces*

²⁰⁶ More generally, it would treat capital income and capital expenses consistently. If interest income were taxed, interest expenses should be fully deductible.

²⁰⁷ As a theoretical matter, the claim that moving from an income to a consumption base is regressive is not as simple to maintain if base broadening occurs at the same time, but studies confirm that a shift to a flat-rate consumption tax would be regressive compared to the current system. See generally Daniel R. Feenberg et al., *Distributional Effects of Adopting a National Retail Sales Tax*, 11 TAX POL'Y & ECON. 49 (1997); William G. Gale et al., *Distributional Effects of Fundamental Tax Reform*, in ECONOMIC EFFECTS OF FUNDAMENTAL TAX REFORM, *supra* note 154, at 281; William M. Gentry & R. Glenn Hubbard, *Distributional Implications of Introducing a Broad-Based Consumption Tax*, 11 TAX POL'Y & ECON. 1 (1997).

the value of existing assets to their owners, as discussed above.²⁰⁸ In contrast, a wage tax does not impose any tax on existing capital. In short, the key difference between the two systems is whether "transition relief" is provided.

As noted above, the absence of transition relief is what generates most of the economic growth effects of consumption taxes.²⁰⁹ Accordingly, a wage tax has a smaller effect on economic growth than does a consumption tax. Moreover, it requires higher marginal tax rates, because wages are substantially smaller than consumption. Finally, a wage tax is significantly more regressive than a consumption tax, because ownership of assets is highly skewed toward high-income households.

B. Comparing Fundamental Reform and Recent Tax Cuts

This Section describes how the recent tax cuts differ in rules and effects from well-designed consumption taxes and concludes that the recent tax cuts move the system in the direction of what would effectively be a wage tax imposed only on low- and moderate-income households.

1. Features of Recent and Proposed Tax Changes

The recent tax cuts share several features with fundamental reform plans. They reduce the top marginal individual income tax rates, reduce tax rates of capital income (dividends and capital gains) even further, and eliminate the estate tax. The bonus depreciation rules move toward a system in which investments are expensed in the first year, albeit on a temporary basis.

Recent regulatory changes also push in the same direction. For example, in January 2002, the Internal Revenue Service (the "IRS") published a notice of proposed rulemaking to clarify its interpretation of the 1992 Supreme Court decision in *INDOPCO, Inc. v. Commissioner*.²¹⁰ In *INDOPCO*, the Court ruled that expenses incurred by firms preparing for a friendly takeover had to be capitalized rather than expensed. The IRS rules put forward categories of safe harbors under which intangible assets could be expensed rather than capitalized. Many practitioners are concerned that under the IRS rules,

²⁰⁸ See *supra* note 204 and accompanying text.

²⁰⁹ See *supra* note 204 and accompanying text.

²¹⁰ See generally 503 U.S. 79 (1992).

firms are given too much leeway to expense investments rather than to depreciate them over time.²¹¹

Moreover, proposals for greatly expanded tax-free saving accounts would push even further toward elimination of tax on capital income. The Bush administration has proposed two new types of individual accounts—called Lifetime Saving Accounts (“LSA”) and Retirement Saving Accounts (“RSA”). LSAs would allow annual contributions of \$5000 per person per year. Although contributions would not be deductible, account earnings and withdrawals would be tax-free. Individuals could make contributions to their own accounts or to anyone else’s account with no income, age, or other restrictions. Withdrawals could be made at any time for any purpose. RSAs are basically Roth IRAs, but with no income limit for contributions. They would have similar features to LSAs, except that contributions could not exceed earnings and withdrawals made before age fifty-eight (or the death and disability of the owner) would be subject to a small penalty. Over time, these proposals would allow an increasing share of the returns to wealth to be sheltered from taxation.²¹²

2. Do the Recent Tax Cuts Look Like Fundamental Reform?

As noted above, well-designed consumption taxes should have at least four features.²¹³ They should be revenue-neutral. They should broaden the base. They should not subsidize old capital. They should eliminate disparities between the treatment of capital income and capital expense. The recent tax cuts fail all four of these tests.

First, the tax cuts are clearly not revenue-neutral. Over the 2001 through 2014 period, the enacted tax cuts, plus the costs of making the 2001 and 2003 cuts permanent, would represent a revenue decline of \$3.3 trillion, and an increase in the budget deficit of \$4.5 trillion.²¹⁴ The revenue cost of the Bush administration’s tax cuts should provide a telling warning that they do not even move in the right direction relative to the underlying goal of a well-designed consumption tax. The key objective of such a tax is to raise national saving. It is completely implausible, however, that any increase in private saving in response to the tax breaks would offset their revenue loss. The Bush

²¹¹ See generally, e.g., JACK H. TAYLOR, CONG. RESEARCH SERV., LIBRARY OF CONG., TAX DEDUCTIBILITY OF BUSINESS EXPENSES (2002).

²¹² See generally Burman et al., *supra* note 133.

²¹³ See *supra* notes 201–206 and accompanying text.

²¹⁴ See generally William G. Gale & Peter R. Orszag, *Bush Administration Tax Policy: Revenue and Budget Effects*, 105 TAX NOTES 105 (2004).

administration's deficit-financed tax cuts thus *reduce* national saving and economic growth rather than increase it—exactly the opposite of the fundamental goal of a consumption tax. Rather than potentially trading off some increase in growth against more inequality in after-tax income, as under academic versions of a consumption tax, the tax cuts give us both lower growth and more inequality.

Second, although a well-designed consumption tax would broaden the base, the Bush administration's proposals contain no significant movement in that direction. Third, the recent tax cuts *subsidize* old capital, exactly the opposite of what a consumption tax would do. The 2001 and 2003 cuts not only do not impose a new tax on existing capital, but reduce taxes on such capital. The reductions in capital gains and dividends taxes, for example, provide large benefits to owners of existing stocks and hence are not well targeted toward exempting just new saving. In effect, from the standpoint of economic growth, a major attraction of a consumption tax is the ability to place an additional tax on existing assets at the time of the transition. Yet the 2001 and 2003 cuts do exactly the opposite, reducing such taxes, and hence omitting much of the potential economic gains from a consumption tax.

Fourth, a key difference in rules between the recent tax cuts and fundamental reform involves the tax treatment of interest payments. A well-designed income tax would tax interest income and allow deductions for interest payments. A well-designed consumption tax could treat interest the same way, or it could allow for nontaxation of interest income *coupled with nondeductibility of interest payments*. The key point is that *any* well-designed tax system would treat capital income and capital expenses in a consistent manner. Yet although it is embracing proposals that reduce or eliminate the tax on interest and other capital income, the Bush administration has neither endorsed nor proposed any such restrictions on deductions for interest payments. As a result, the recent tax cuts increase the disparity in the treatment of capital income and expense. Proposals for RSAs and LSAs would move the system substantially farther in that direction. As explained above, without such restrictions, cuts in the taxation of capital income expand the opportunities for tax sheltering, as long as interest payments are deductible.²¹⁵ Roger Gordon, Laura Kalam-bokidis, Jeffrey Rohaly, and Joel Slemrod argue that if "the ultimate destination of this [the Bush administration's] set of tax reforms is a

²¹⁵ See *supra* note 206 and accompanying text.

consumption tax base, then the most glaring omission from the discussion to date concerns interest deductibility."²¹⁶

3. A Wage Tax on Low- and Moderate-Income Households?

Households can always borrow and invest the funds. In a well-designed tax system, this set of transactions would generate no net gain, and of course it never generates net investment. Under the reforms advocated by the Bush administration, this set of transactions would generate no taxable capital income (if the funds were invested, say, in RSAs and LSAs), but it would generate deductions for interest payments that could be used to reduce taxes on wage income. Because it seems likely that high-income households are either more financially sophisticated or can better afford financial advice, it also seems likely that the proposals advocated by the Bush administration would lead not just toward a wage tax, but toward a wage tax that was only paid by low- and moderate-income households. These changes would imply that capital is subsidized and labor income bears both the full weight of supporting government services and of paying for the subsidies to capital income. This would be both extremely regressive and detrimental to economic growth.

C. *Five Easy Pieces*

Policymakers generally have been reluctant to embrace the notion of replacing the current system with a broad-based, flat-rate consumption tax. Some advocates of moving to a consumption tax believe that this is just a political economy problem. They have therefore shifted to trying to achieve fundamental tax reform in several steps, rather than in one fell swoop, and they defend the President Bush's tax cuts as effecting such a piece-meal move toward a consumption tax. The strategy is embodied in the "five easy pieces" delineated by Ernest Christian, a former tax official in the Reagan administration.²¹⁷ According to one formulation of these five easy pieces, they include the following:

- Reduced marginal income-tax rates, especially at the top;

²¹⁶ See generally ROGER GORDON ET AL., TOWARD A CONSUMPTION TAX AND BEYOND (Office of Tax Policy Research, Working Paper No. 2004-5, 2004), available at <http://www.bus.umich.edu/otpr/WP2004-5.pdf>.

²¹⁷ See Ernest S. Christian & Gary A. Robbins, *Stealth Approach to Tax Reform*, WASH. TIMES, Nov. 1, 2002, at A21.

- Increased contribution limits for tax-preferred savings accounts;
- Expensing (immediate write-offs) of business investment, rather than depreciation over time;
- Repeal of the estate tax; and
- Reduction in dividends and capital gains taxes.

These “five easy pieces” are reflected, presumably not by coincidence, in the Bush administration’s recent tax cuts. The 2001 Act reduced marginal tax rates and eventually repealed the estate tax. It also expanded contribution limits to IRAs and 401(k)s. The 2002 and 2003 Acts included “bonus depreciation” provisions for expensing business investment, albeit only for part of capital outlays. The 2003 Act reduced capital gains and dividends taxes. The Bush administration has also promoted vastly expanded tax-free savings accounts.

The claim, according to Ernest Christian and others, is that this package of steps would move the nation very close to a consumption tax with a flat rate of taxation. At first, this claim seems plausible. The expansion in tax-free savings accounts, reduction in dividends and capital gains taxes, and repeal of the estate tax, for example, would reduce or eliminate any tax on saving, as also would occur under a consumption tax. Indeed, Bruce Bartlett, a leading conservative commentator, noted the following in early 2003:

[W]e can now see that Bush has had a strategy all along that conforms exactly to the five easy pieces. . . .

. . . .

By Bush’s second term, it is possible that we will have made enough incremental progress toward a flat rate consumption tax that we may finally see fundamental tax reform fully enacted into law.²¹⁸

First impressions, however, can be quite misleading. The five easy pieces fail all four tests of a well-designed consumption tax noted above.²¹⁹ They are not revenue-neutral; instead, they reduce revenues substantially. There is no base-broadening. They do not impose any new burden on the owners of existing assets, as would occur under a consumption tax; indeed, they subsidize the return to old capital. And they increase the disparity between the tax treatment of interest in-

²¹⁸ Bruce Bartlett, *Bush’s High Five*, NAT’L. REV. ONLINE (Feb. 10, 2003), at http://www.nationalreview.com/nrof_bartlett/bartlett021003.asp.

²¹⁹ See *supra* notes 201–206 and accompanying text.

come and interest deductions. The bottom line is that the five easy pieces are really just five large, regressive tax cuts.

D. *Prospects for Fundamental Reform*

From a political economy perspective, tax reform always combines gain and pain. The 2001 and 2003 tax cuts do the easy part of tax reform, but they ignore the difficult part, and in so doing, will make reform harder, not easier, to achieve.

For example, a well-enshrined principle of tax reform is to broaden the base and lower the rates. Broadening the base involves painful adjustments, because it removes a variety of subsidies or special exemptions. Normally, such adjustments are made possible politically by a reduction in tax rates. But the 2001 and 2003 tax cuts reduced regular income tax rates without any effort to broaden the base. Thus, a chance at reform was squandered, and the ability to use those rate reductions as fodder to induce a well-defined reform has been lost.

The 2003 dividend tax cut provides a second example. Even before the dividend tax reduction, most corporate income in the United States was not taxed twice. A substantial share was not taxed at the corporate level due to shelters, corporate tax subsidies, and other factors. And half or more of dividends were effectively untaxed at the individual level because they flow to pension funds, 401(k) plans, and non-profits.²²⁰ The problem is that the dividend tax cut undermines the political viability of true corporate tax reform. Any such reform would have to combine the carrot of addressing the "double taxation" of dividends with the stick of closing corporate loopholes and preferential tax provisions, to ensure that corporate income is taxed once and only once—but at least once. The dividend tax cut instead just gave the carrot away.

The same problem has occurred in the taxation of capital income generally. Enacting meaningful reform will require conforming the treatment of capital income and interest deductions. Yet by reducing the taxation of capital income without also restricting the ability to deduct interest payments, legislators gave away the easy part of reform and now have substantially less to bargain with to make the treatment of interest income and expense compatible.

²²⁰ See generally William G. Gale, *About Half of Dividend Payments Do Not Face Double Taxation*, 97 TAX NOTES 839 (2002).

Broadening the base is always a difficult sell politically, because it creates losers. It is especially difficult, perhaps impossible, as a stand-alone policy because President Bush and almost all Republicans in Congress have signed the "no new taxes" pledge.²²¹ The signers of the pledge agree not to vote for base-broadening changes unless they are coupled explicitly with rate reductions.

CONCLUSION

This Article shows that the 2001 and 2003 tax cuts are regressive, unaffordable, and poorly designed to boost economic growth in either the short run or the long run. Potential justifications for the tax cuts—including the feared possibility of paying off the public debt (the "peril of zero debt" that apparently worried Federal Reserve Chairman Alan Greenspan in 2001), the potential restraint imposed on government spending by the tax cuts (the "starve the beast" hypothesis), and the notion that the tax cuts represent a piece-meal approach to tax reform—have all been shown to be unwarranted or misleading.

Over the next few years, policymakers will have the opportunity to revisit the existence and structure of the tax cuts in the debate over removing their sunsets. The current focal point of that debate is whether extending the tax cuts must be offset, within the congressional budget rules, by other spending or revenue changes. As this Article emphasizes, in the long run, there is no alternative to doing so. And the spending and tax changes required to finance the tax cuts, as this Article presents, appear to be well beyond the realm of political feasibility, underscoring just how unaffordable the tax cuts are.

²²¹ See generally Gale & Kelly, *supra* note 52.

Table 1a: Features of the 2001 and 2003 Tax Cuts and the FY 2005 Budget Proposals: General Income and Estate Tax Cuts

Enacted Policy	Information Reported	Pre-EGTRRA	EGTRRA	JGTRRA	FY 2005 Budget Proposal
Reduce top four income tax rates	Tax rate	28, 31, 36, 39.6	2001-03 27, 30, 35, 38.6 2004-05 26, 29, 34, 37.6 2006-10 25, 28, 33, 35	2003-10 25, 28, 33, 35	2011 and on 25, 28, 33, 35
Create 10% bracket	Income taxed at 10% for married couples	NA	2001-07 \$12,000 2008 \$14,000 2009-10 Indexed	2003 \$14,000 2004 \$14,300	2005 and on \$14,300
Reduce dividend tax rates	Tax rate	Taxed as ordinary income		2003-07 5, 15 2007 0, 15	2009 and on 0, 15
Reduce capital gains tax rates	Tax rate	10, 20 (with exceptions)		2003-07 5, 15 2008 0, 15	2009 and on 0, 15
Increase AMT exemption	Exemption level (unindexed)	Single \$33,750 Married \$45,000	2001-04 \$35,750 Single \$49,000 Married	2003-04 \$40,250 Single \$58,000 Married	2005 only \$40,250 Single \$58,000 Married
Repeal PEP and PEASE	Percent reduction relative to pre-EGTRRA law	NA	2006-07 33% 2010 66% 2008-09 Repealed		2011 and on Repeal
Repeal estate tax	Exemption level, highest effective tax rate	\$675,000, 60%	2002 \$1 million, 50% gradually changing to 2009 \$3.5 million, 45% 2010 Repeal		2011 and on Repeal

Source: JOINT COMM. ON TAXATION, ESTIMATED BUDGET EFFECTS OF THE CONFERENCE AGREEMENT FOR H.R. 2: THE "JOBS AND GROWTH TAX RELIEF RECONCILIATION ACT OF 2003": FISCAL YEARS 2003-2013 (JCX-55-03) (Comm. Print 2003), available at <http://www.house.gov/jct/x-55-03.pdf>; JOINT COMM. ON TAXATION, ESTIMATED REVENUE EFFECTS OF THE "JOB CREATION AND WORKER ASSISTANCE ACT OF 2002": FISCAL YEARS 2002-2012 (JCX-13-02) (Comm. Print 2002), available at <http://www.house.gov/jct/x-13-02.pdf>; JOINT COMM. ON TAXATION, 107TH CONG., ESTIMATED BUDGET EFFECTS OF THE CONFERENCE AGREEMENT FOR H.R. 1836: FISCAL YEARS 2001-2011 (JCX-51-01) (Comm. Print 2001), available at <http://www.house.gov/jct/x-51-01.pdf>; OFFICE OF MGMT. & BUDGET, BUDGET OF THE UNITED STATES GOVERNMENT, FISCAL YEAR 2005 (2004), available at <http://www.whitehouse.gov/omb/budget/fy2005/budget.html>.

Table 1b: Features of the 2001 and 2003 Tax Cuts and the FY 2005 Budget Proposals: Children and Marital Status

Enacted Policy	Information Reported	Pre-EGTRRA	EGTRRA	JGTRRA	FY 2005 Budget Proposal
Expand child credit	Maximum credit amount (unindexed)	\$500	2001-04 \$600 2005-08 \$700 2009 \$800 2010 \$1000	2003-04 \$1000	2005 and on \$1000
Expand standard deduction for married couples	Deduction for couples as percent of deduction for singles	167%	2005 174% 2006 184% 2007 187% 2008 190% 2009-10 200%	2003-04 200%	2005 and on 200%
Expand 15% bracket for married couples	Maximum income as percent of maximum for singles	167%	2005 180% 2006 187% 2007 193% 2008-10 200%	2003-04 200%	2005 and on 200%
Expand EITC for married couples	Increase beginning and end of phase-out	NA	2002-04 \$1000 2005-07 \$2000 2008 \$3000 2009-10 Indexed		2011 and on Indexed
Dependent Care Credit	Cap on expenses and maximum credit rate	\$2400 30%	2002-10 \$3000 2002-10 35%		Make permanent. Establish uniform definition of qualifying dependent.

Table 1c: Features of the 2001 and 2003 Tax Cuts and the FY 2005 Budget Proposals: Saving and Investment

Enacted Policy	Information Reported	Pre-EGTRRA	EGTRRA	JGTRRA	FY 2005 Budget Proposal
Raise traditional and Roth IRA contribution limits	Contribution limit	\$2000	2002-04 \$3000 2005-07 \$4000 2008 \$5000 2009-10 Indexed		2011 and on Indexed
Increase 401(k) contribution limits	Contribution limit	\$10,000	2002-06 Raise \$1000/yr 2006 \$15,000 2007-10 Indexed		2011 and on Indexed
Increase IRA and 401(k) contribution limits for people over 50	Additional allowable contributions	NA	2002-05 \$500 2006-10 \$1000		2011 and on \$1000
Create Roth 401(k)	Contribution limit	NA	2006-07 \$4000 2008 \$5000 2009-10 Indexed	2005 \$4000 2008 \$5000 2009-10 Indexed	2011 and on Indexed
Create Saver's Credit	Eligible income range for married couple, credit rate	NA	2002-06 \$0-30,000 50% \$30,000-32,500 20% \$32,500-50,000 10%		Allow expiration
Bonus depreciation allowance for business property	Additional first-year deduction as percent of adjusted basis of qualified property	NA	9/01-9/04 30%* 5/03-11/05 50%		Allow expiration

* Provision of the Job Creation and Worker Assistance Act of 2002, Pub. L. No. 107-147, 116 Stat. 21 (2002).

Table 1d: Features of the 2001 and 2003 Tax Cuts and the FY 2005 Budget Proposals: Education

Enacted Policy	Information Reported	Pre-EGTRRA	EGTRRA	JGTRRA	FY 2005 Budget Proposal
Expand tax preference for prepaid tuition ("section 529") programs	Summary of change	NA	2002-10 Withdrawals are excluded from gross income if used for qualified higher education.		Make permanent.
Create Deduction for Education Expenses	Eligible income cap for married couple, deduction limit	NA	2002-03 \$130,000, \$3000 2004-05 \$130,000, \$4000 2006 Expires		Allow expiration
Raise Education IRA contribution limits	Contribution limit	\$500	2002-10 \$2000		2011 and on \$2000
Increase eligibility for education IRA contributions	Income phase-out range	\$180k-210k	2002-10 \$190k-220k		2011 and on \$190k-220k
Expand deductible student loan interest payments	Income phase-out range	\$45k-60k Single \$90k-120k Married	2002 \$50k-65k Single \$100k-130k Married 2003-10 Indexed		2011 and on Indexed

Table 2: Effect of the AMT on the Bush Administration's Tax Cuts¹

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
500-1000	1.1	1.1	1.5	14.2	16.9	20.7
More than 1000	0.6	1.2	1.1	4.9	5.8	7.0

Source: Tax Policy Center Microsimulation Model

¹ Baseline pre-EGTRRA law. Tax cuts include those currently in place and those the Bush administration has proposed extending.

Table 3: Revenue and Budget Costs

		2001-2011		2005-2014		2010		2014	
		\$ Billion	% of GDP	\$ Billion	% of GDP	\$ Billion	% of GDP	\$ Billion	% of GDP
Official baseline									
<i>EGTRRA</i>									
Revenue loss		1349	1.0%	1039	0.7%	187	1.2%	0	0.0%
Debt service		383	0.3%	653	0.4%	73	0.5%	104	0.6%
Total		1731	1.2%	1691	1.1%	260	1.7%	104	0.6%
<i>/CWA</i>									
Revenue loss		47	0.0%	-82	-0.1%	-10	-0.1%	0	0.0%
Debt service		44	0.0%	53	0.0%	5	0.0%	5	0.0%
Total		91	0.1%	-29	0.0%	-5	0.0%	5	0.0%
<i>/GTRRA</i>									
Revenue loss		354	0.3%	144	0.1%	4	0.0%	0	0.0%
Debt service		126	0.1%	203	0.1%	23	0.2%	28	0.2%
Total		480	0.3%	347	0.2%	27	0.2%	28	0.2%
Total									
Revenue loss		1749	1.2%	1101	0.7%	181	1.2%	0	0.0%
Debt service		553	0.4%	908	0.6%	101	0.7%	137	0.8%
Total		2302	1.6%	2009	1.3%	282	1.9%	137	0.8%
With extensions, assuming AMT is indexed in baseline									
<i>EGTRRA</i>									
Revenue loss		1668	1.2%	2337	1.6%	218	1.4%	351	1.9%
Debt service		358	0.3%	742	0.5%	73	0.5%	158	0.9%
Total		2026	1.4%	3079	2.1%	291	1.9%	509	2.8%

Table 4: Paying for Permanent Tax Cuts and AMT Reform

	Extend Tax Cuts in FY2005 Proposal ¹	Memo: 2014 Baseline Revenue/Spending (\$ Billions) ²
Revenue Loss in 2014 (in \$ Billions)	400	
Required Percentage Change in All Non-Interest Outlays³	-12	3278
Discretionary Spending	-35	1149
Defense, HS, International	-61	651
Other	-80	498
Mandatory Spending	-19	2129
Social Security	-48	827
Medicare	-57	698
Medicaid	-114	348
All Three	-21	1873
Other	-155	256
All Spending Except:	-53	754
Interest, Social Security, Medicare, Medicaid, Defense, and Homeland Security		
Revenue		
Payroll Tax	-34	1173
Corporate Tax	-124	320

¹ Authors' calculations. See Table 3.

² CONG. BUDGET OFFICE, THE BUDGET AND ECONOMIC OUTLOOK: FISCAL YEARS 2005 TO 2014, at 3 tbl.1-2 (2004), available at <http://www.cbo.gov/ftpdocs/49xx/doc4985/01-26-BudgetOutlook-EntireReport.pdf> (last modified Apr. 6, 2004).

³ Percent cuts which exceed 100 are arithmetic artifacts. No program can be cut more than 100%.

Table 5: Long-Term Cost of the Tax Cuts

	Through 2080	Infinite Horizon
Tax cuts		
As % of GDP	2.2	2.2
In present-value dollars	\$11	\$18
Social Security		
As % of GDP	0.7	1.2
In present-value dollars	\$3.7	\$10.4

Source: Authors' calculations and Bd. of Trs., FED. OLD-AGE & SURVIVORS INS. & DISABILITY INS. TRUST FUNDS, THE 2003 ANNUAL REPORT OF THE BOARD OF TRUSTEES OF THE FEDERAL OLD-AGE AND SURVIVORS INSURANCE AND DISABILITY INSURANCE TRUST FUNDS 59 tbl.IV.B7 (2003), available at <http://www.ssa.gov/OACT/TR/TR04/tr04.pdf> (updated Mar. 17, 2003).

Table 6: Distributional Effects of Permanent Tax Cuts and AMT Adjustment Ignoring Financing¹ (by Cash Income Percentile, 2010)

Cash Income Percentile	Percent with Tax Cut	Percent Change in After-Tax Income	Share of Total Tax Cut	Average Tax Change in Dollars	Change in Average Tax Rate	Percent Change in Federal Tax Payments	Change in Share of Federal Taxes	Change in Share of Post-Tax Income	Change in Share of Income Tax Paid
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	-1392	-2.0	-9.4	0.3	-0.2	-0.5
Top Quintile	99.2	4.3	73.1	-6826	-3.1	-11.1	-0.1	0.5	2.7
All	72.8	3.4	100.0	-1869	-2.6	-11.0	0.0	0.0	0.0
Addendum									
80-90 Percentile	99.2	3.8	17.5	-3266	-2.8	-11.7	-0.1	0.1	3.4
90-95 Percentile	99.3	3.6	11.6	-4344	-2.6	-10.1	0.1	0.0	3.1
95-99 Percentile	99.4	3.2	14.0	-6523	-2.3	-8.4	0.5	0.0	1.0
Top 10%	99.2	4.5	55.6	-10,386	-3.2	-11.0	0.0	0.5	0.6
Top 5%	99.2	4.9	44.0	-16,429	-3.4	-11.2	-0.1	0.4	0.3
Top 1%	98.7	6.4	30.0	-56,051	-4.3	-13.3	-0.7	0.5	0.0
Top 0.5%	98.7	6.8	24.7	-92,154	-4.6	-13.8	-0.6	0.4	0.0
Top 0.1%	98.8	7.5	14.7	-275,507	-4.9	-13.9	-0.4	0.3	0.0

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 to keep the number of AMT taxpayers roughly equal to those who would be on the AMT under pre-EGTRRA law.

Table 7: Distributional Effects of Permanent Tax Cuts and AMT Adjustment with Lump Sum Financing¹ (by Cash Income Percentile, 2010)

Cash Income Percentile	Percent with Tax Increase	Percent with Tax Cut	Percent Change in After-Tax Income	Share of Total Tax Cut	Average Tax Change in Dollars	Change in Average Tax Rate	Percent Change in Federal Tax Payments	Change in Share of Federal Taxes	Change in Share of Post Tax Income	Change in Share of Income Paid
Lowest Quintile	100.0	0.0	-21.7	-	1843	21.0	626.0	2.2	-0.7	3.9
Second Quintile	98.7	1.3	-7.5	-	1482	6.7	69.9	1.8	-0.5	3.2
Middle Quintile	93.8	6.2	-3.5	-	1170	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	-	-4958	-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										
80-90 Percentile	15.5	84.5	1.6	-	-1398	-1.2	-5.0	-0.8	0.3	-1.6
90-95 Percentile	5.6	94.4	2.0	-	-2475	-1.5	-5.8	-0.7	0.2	-1.3
95-99 Percentile	5.2	94.8	2.3	-	-4654	-1.7	-6.0	-1.1	0.3	-1.8
Top 10%	5.4	94.6	3.7	-	-8518	-2.6	-9.0	-5.1	1.6	-8.6
Top 5%	5.1	94.9	4.3	-	-14,560	-3.0	-9.9	-4.3	1.3	-7.4
Top 1%	4.7	95.3	6.2	-	-54,182	-4.2	-12.9	-3.2	1.0	-5.5
Top 0.5%	3.4	96.6	6.7	-	-90,285	-4.5	-13.5	-2.7	0.8	-4.7
Top 0.1%	2.2	97.8	7.4	-	-273,639	-4.8	-13.8	-1.6	0.5	-2.9

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 to keep the number of AMT taxpayers roughly equal to those who would be on the AMT under pre-EGTRRA law. Financing equals \$1869.

Table 8: Distributional Effects of Permanent Tax Cuts and AMT Adjustment with Proportional Financing¹ (by Cash Income Percentile, 2010)

Cash Income Percentile	Percent with Tax Increase	Percent with Tax Cut	Percent Change in After-Tax Income	Share of Total Tax Cut	Average Tax Change in Dollars	Change in Average Tax Rate	Percent Change in Federal Tax Payments	Change in Share of Federal Taxes	Change in Share of Post Tax Income	Change in Share of Income Paid
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	-	-1128	-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										
80-90 Percentile	53.3	46.7	0.3	-	-281	-0.2	-1.0	-0.3	0.1	-0.4
90-95 Percentile	74.9	25.1	0.0	-	-58	0.0	-0.1	0.0	0.0	0.0
95-99 Percentile	83.4	16.6	-0.4	-	718	0.3	0.9	0.3	-0.1	0.5
Top 10%	74.7	25.3	0.9	-	-1975	-0.6	-2.1	-0.7	0.4	-1.7
Top 5%	74.5	25.5	1.2	-	-3893	-0.8	-2.7	-0.7	0.4	-1.7
Top 1%	39.1	60.9	2.5	-	-22,335	-1.7	-5.3	-1.0	0.4	-2.2
Top 0.5%	27.7	72.3	3.0	-	-39,854	-2.0	-6.0	-1.0	0.4	-2.0
Top 0.1%	17.7	82.3	3.5	-	-128,343	-2.3	-6.5	-0.6	0.2	-1.3

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 to keep the number of AMT taxpayers roughly equal to those who would be on the AMT under pre-EGTRRA law. Financing equals about 2.6% of cash income.

Table 9: 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: ROBERT DENNIS ET AL., MACROECONOMIC ANALYSIS OF A 10 PERCENT CUT IN INCOME TAX RATES 17 tbl.A-2 (Cong. Budget Office, Technical Paper No. 2004-07, 2004), available at <http://www.cbo.gov/ftpdocs/54xx/doc5485/2004-07.pdf> (last modified May 27, 2004) and conversation with David Weiner.

* GNP and GDP are the same in these models.

Figure 1
AMT Taxpayers, 2005-2014

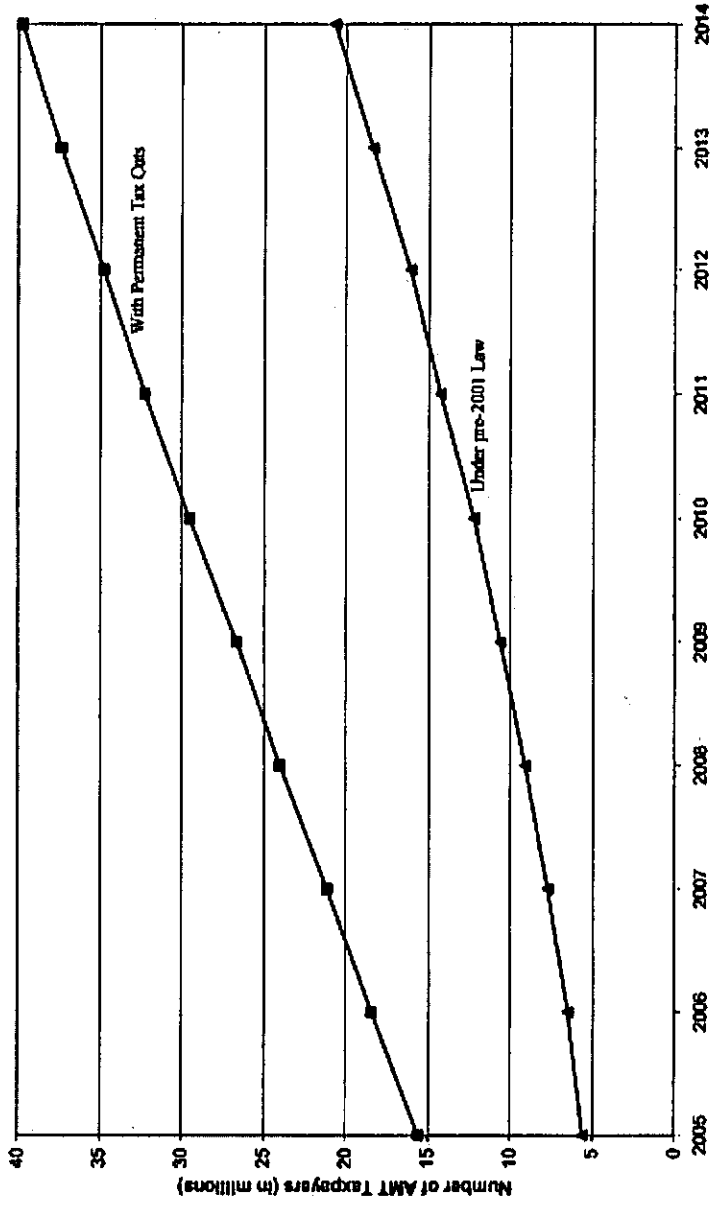


Figure 2: Revenue and budget cost of tax cuts

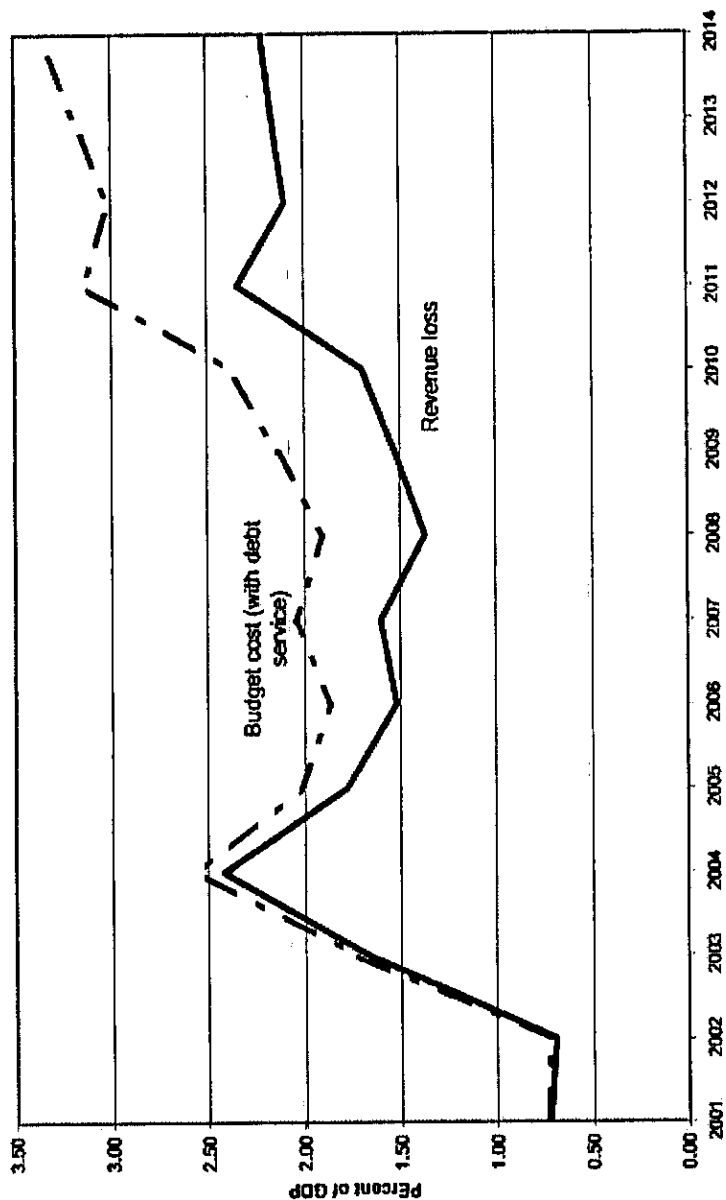


Figure 3
Sources of Change to Budget Surplus: January 2001 to March 2004

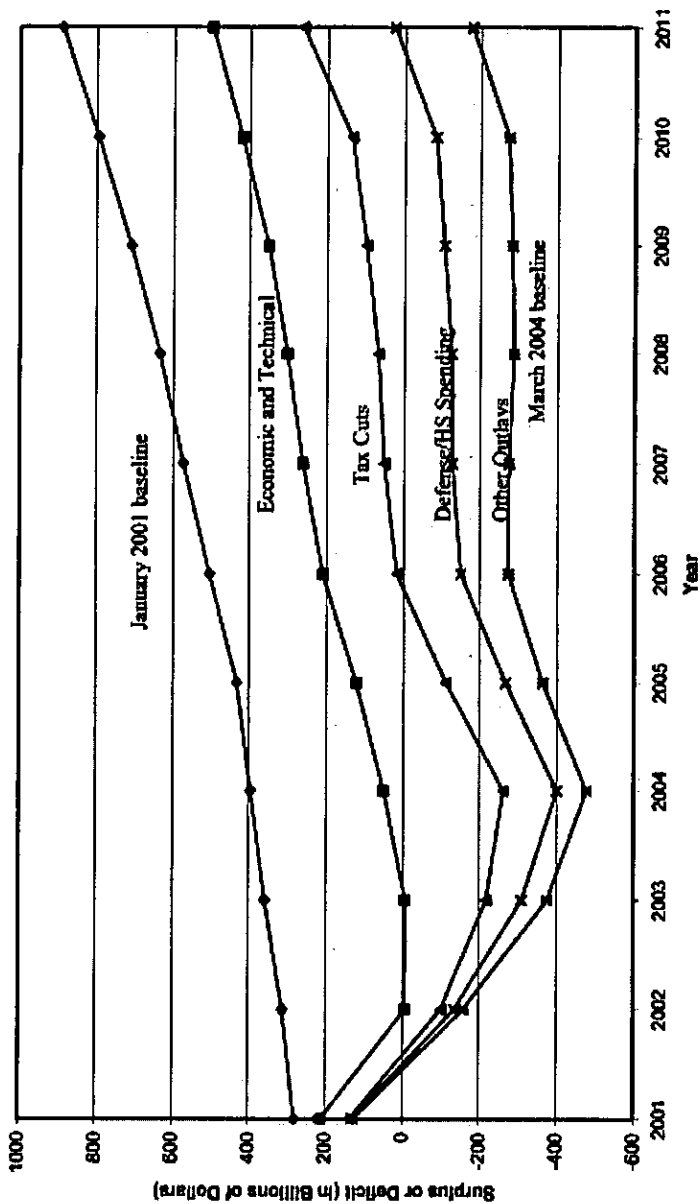


Figure 4: Baseline and Adjusted Budget Outcomes as Share of GDP, 2003-2014

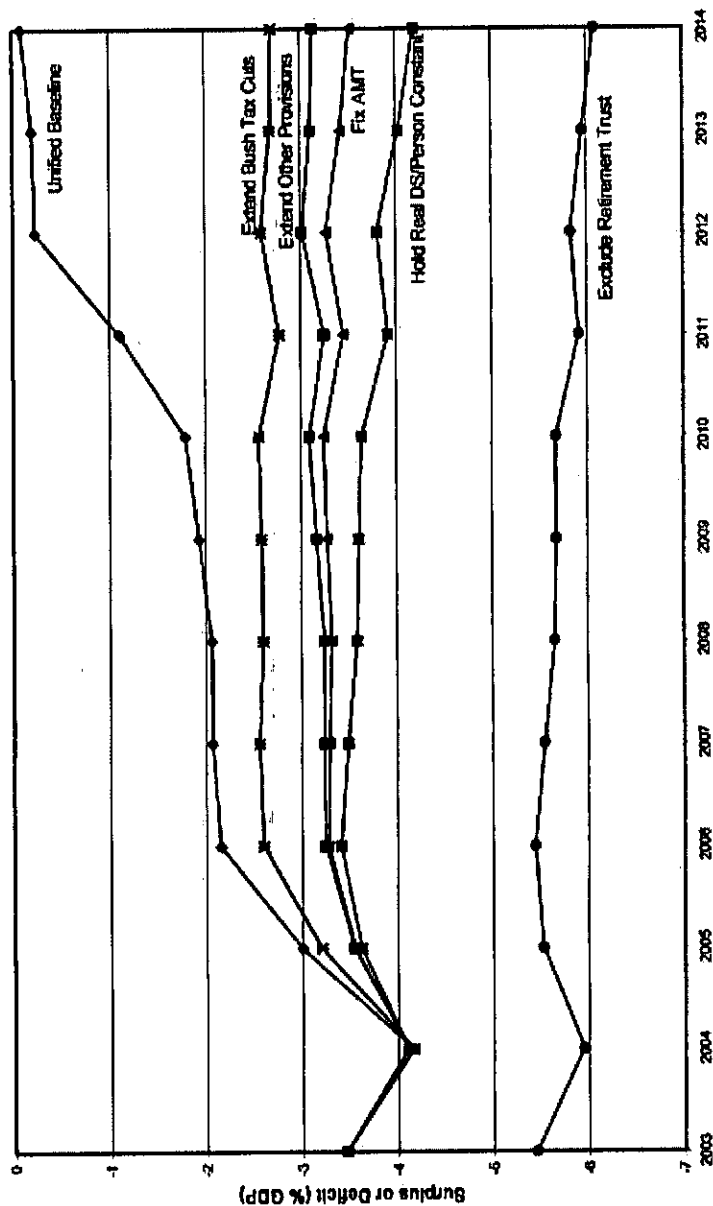
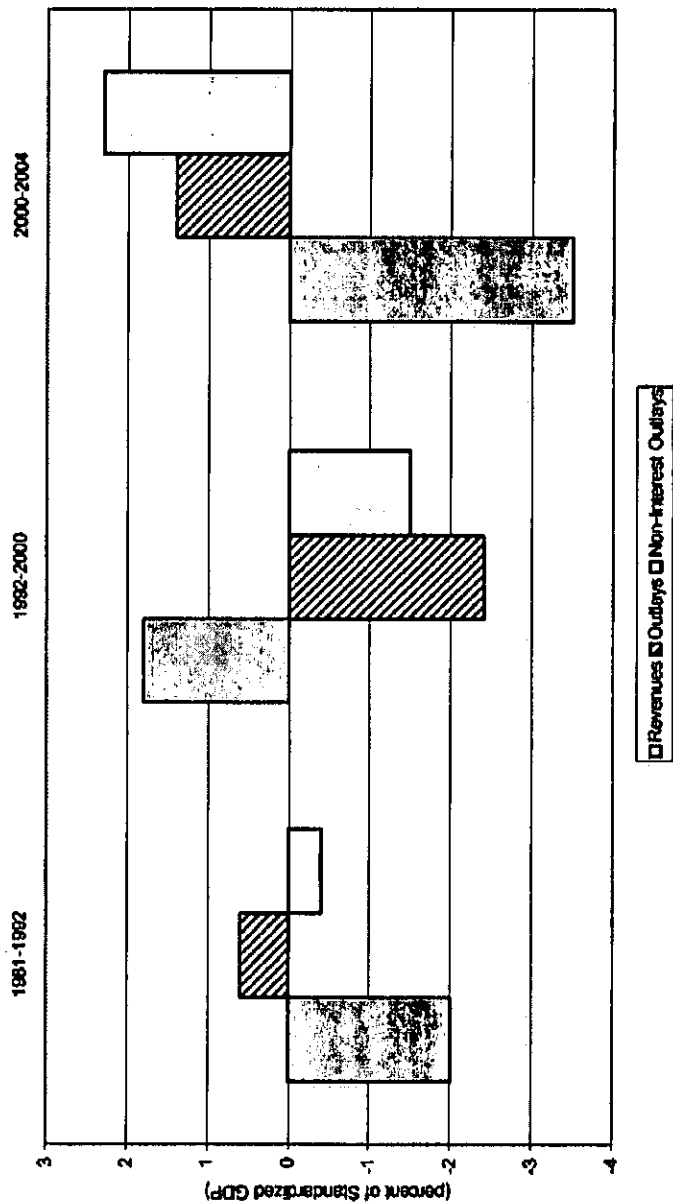


Figure 5:
Change in Standardized Federal Revenue and Outlays as a Percent of Standardized GDP,
1981-2004



Source: CBO (2004a, b)

Figure 6: Real GDP and Investment growth

