

By William G. Gale and Peter R. Orszag

Bush Administration Tax Policy: Short-Term Stimulus

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I. Introduction

This article examines the effects of recent tax cuts as a short-term economic stimulus and is the fifth in a series that summarizes and evaluates tax policy in the Bush administration.¹ A particular goal for each of the 2001, 2002, and 2003 tax cuts was to spur the economy in the short term.

According to the president'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: "If 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 textbook economics" (Catts 2004).

Mankiw's statement is narrowly and carefully framed. It does not address the real questions associated with the short-term effects of the tax cuts, and should not be interpreted as evidence that the tax cuts represent effective short-term stimulus for at least two reasons. 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, Mankiw's statement focuses on only whether any stimulus was provided. But in an economy with excess capacity, such as the U.S. economy 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.

One question in evaluating the tax cuts as a stimulus package is the minimal one that Mankiw's statement addresses: Whether *any* stimulus was provided. But even

¹The previous articles provide background information and examine distributional effects, budgetary issues, and effects on long-term growth (Gale and Orszag 2004a, b, c, and d).

if some stimulus was provided, an important 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 also discuss the extent to which the tax cuts, as opposed to other factors, have been responsible for recent economic trends. Our analysis highlights the following conclusions:

- 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 short-term stimulus. For example, the tax cuts were mostly backloaded and did not channel funds toward groups with the highest marginal propensity to consume additional resources. Also, many of the provisions were intended to stimulate saving, not consumption.
- As a result of those design flaws — from the perspective of providing stimulus — the tax cuts had at best a small positive bang for the buck relative to other options. The most comprehensive current studies by academic researchers imply that the tax cuts *reduced* GDP and employment in 2001, and had virtually no effect on those aggregates in 2002.
- An alternative package, such as one containing significant state fiscal relief and tax cuts for low-income households, could have provided more stimulus with lower short-term and long-term budgetary costs.
- The tax cuts played a relatively minor role in the economic recovery compared with other factors.

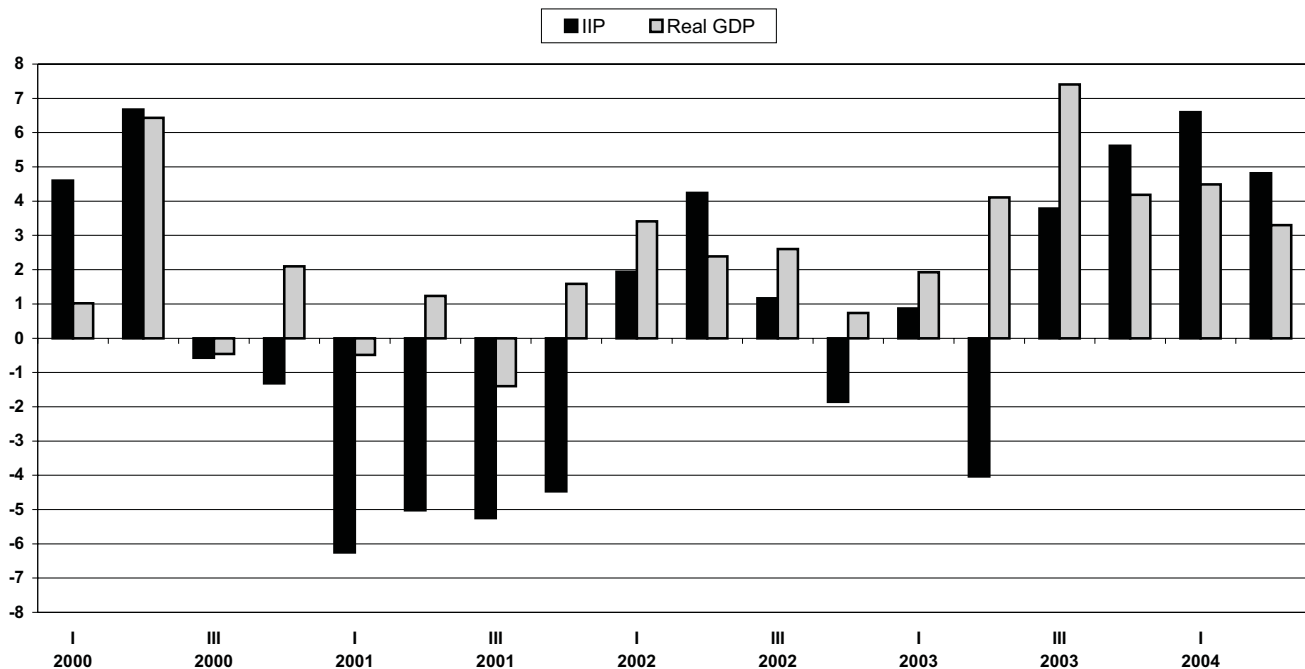
Before turning to those issues, we emphasize the important distinctions between the short-run stimulus effect of tax policies and the long-term growth effects. In a slack economy, tax policies can affect short-term GDP by changing aggregate demand. In the long run, however, tax policies change the size 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. Gale and Orszag (2004c) examine the long-term growth effects of recent tax policies.

Section II discusses the recent evolution of the economy and the timing of the tax cuts. Section III reviews estimates of the quantitative short-term effects of the tax cuts. Section IV discusses the "bang for the buck" for the tax cuts and alternative policies.

II. Recent Economic Patterns

According to the National Bureau of Economic Research Business Cycle Dating Committee, a recession

Figure 1
Real GDP and Index of Industrial Production (IIP),
Percent Change From Preceding Period, Seasonally Adjusted at Annual Rates



Sources: Bureau of Labor Statistics, NIPA Table I.1.1, last revised September 29, 2004; Federal Reserve Statistical Release G. 17: Industrial Production and Capacity Utilization.
 Note: Quarterly IIP values calculated by averaging monthly values for respective quarter.

began in March 2001 and ended in November 2001. Economic activity remained sluggish for an extended period of time after the official end of the recession, however. Real GDP growth remained weak until the latter part of 2003 (Figure 1).

Figure 2 shows the growth rate of nonresidential fixed investment by quarter. Investment plummeted during 2001. It did not begin growing rapidly again until the middle of 2003, at about the same time that GDP growth picked up again. The timing at least raises questions about whether the bonus depreciation provision, enacted in 2002 and expanded in 2003, was an important determinant of the turnaround in business investment. Figures 3 and 4 show that employment levels and especially employment rates have been anemic for the last several years. Gould (2003) discusses the relative merits and strengths of the different surveys and shows that the establishment (payroll) surveys is the more reliable.

III. Estimated Short-Term Effects of Recent Cuts

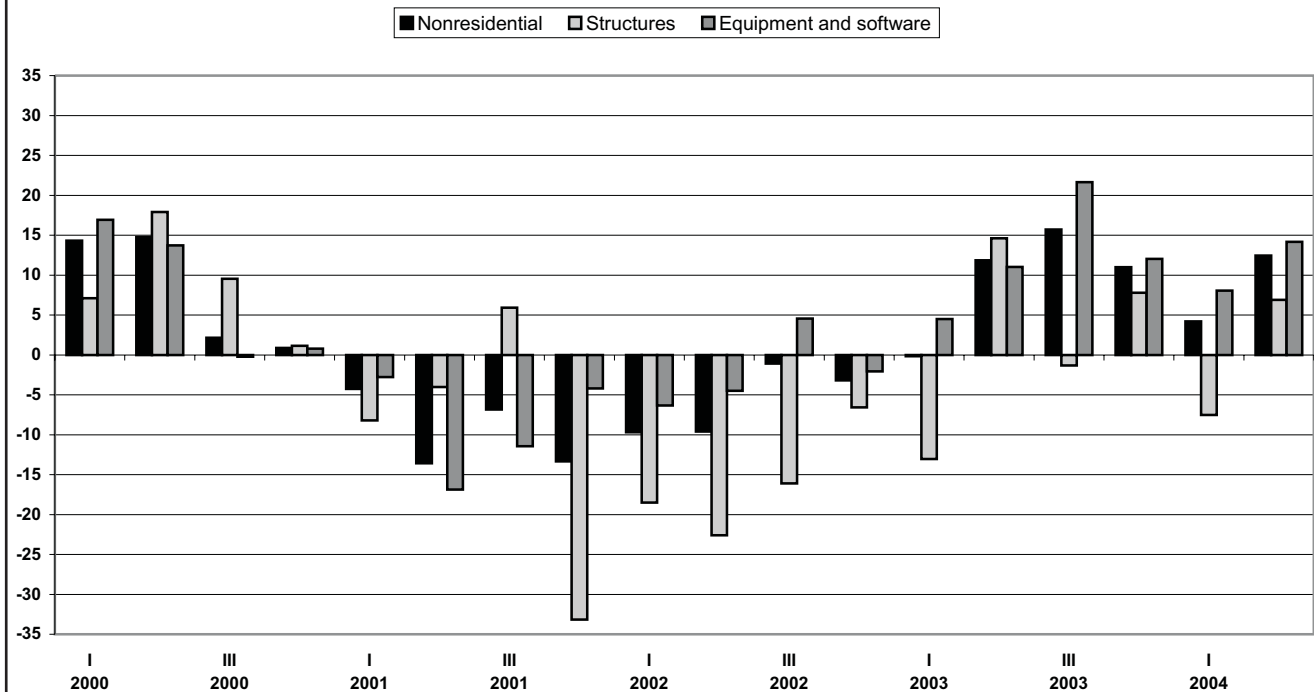
A. Overall Effects

Several studies provide evidence on the effects of the tax cuts on short-term economic activity. House and Shapiro (2004a) 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. 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* (2002), a strong supporter of the tax cuts, asserts that "delayed tax cuts are likely to depress the economy." House and Shapiro estimate that in the first six months following the enactment of the policy, GDP falls below trend by 0.9 percent, employment by 0.1 percent. Investment falls sharply initially and remains below trend for 2½ years, with very big declines (0.6 percent 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 percent). Those patterns and the general magnitude of the effects holds regardless of whether the tax cuts are perceived as temporary or permanent.

The reasoning is straightforward. Phased-in, or deferred, tax cuts on labor income give workers incentives to work less currently (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). In contrast, deferred tax cuts on capital income help spur investment now, because the investment returns, occurring 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

Figure 2
Real Private Fixed Investment by Type, 2000-2004
Percent Change From Preceding Period, Seasonally Adjusted at Annual Rates



Source: Bureau of Labor Statistics, NIPA Table 5.3.1, last revised September 29, 2004.

labor income than on capital income in 2001. House and Shapiro (2004b) examine the bonus depreciation provisions enacted in 2002. They show that those policies have raised output by about 0.1 percent in 2003 and 2004.

House and Shapiro (2004a) also examine the effects of the 2003 tax cut, which accelerated the implementation of the provisions of the 2001 bill and reduced the taxation of dividends and capital gains. Thus, the 2003 law provides incentives to raise labor supply and production immediately. Overall, the results in House and Shapiro (2004a, 2004b) 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 0.6 percent higher in 2004 than it would have been without the tax cuts. Those effects are significant, but should be compared to the costs: The tax cuts reduced revenue in 2004 alone by about \$270 billion, or 2.4 percent of GDP.

The 7 percent 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 House and Shapiro (2004a, 2004b), for example, would show that the recent tax cuts raised GDP by just 0.6 percent in the third quarter of 2003. Economy.com (2003c) attributed about 1 percentage point of the growth spurt to the tax cuts. Many additional factors contributed, including expansive monetary policy, which reduced short- and long-

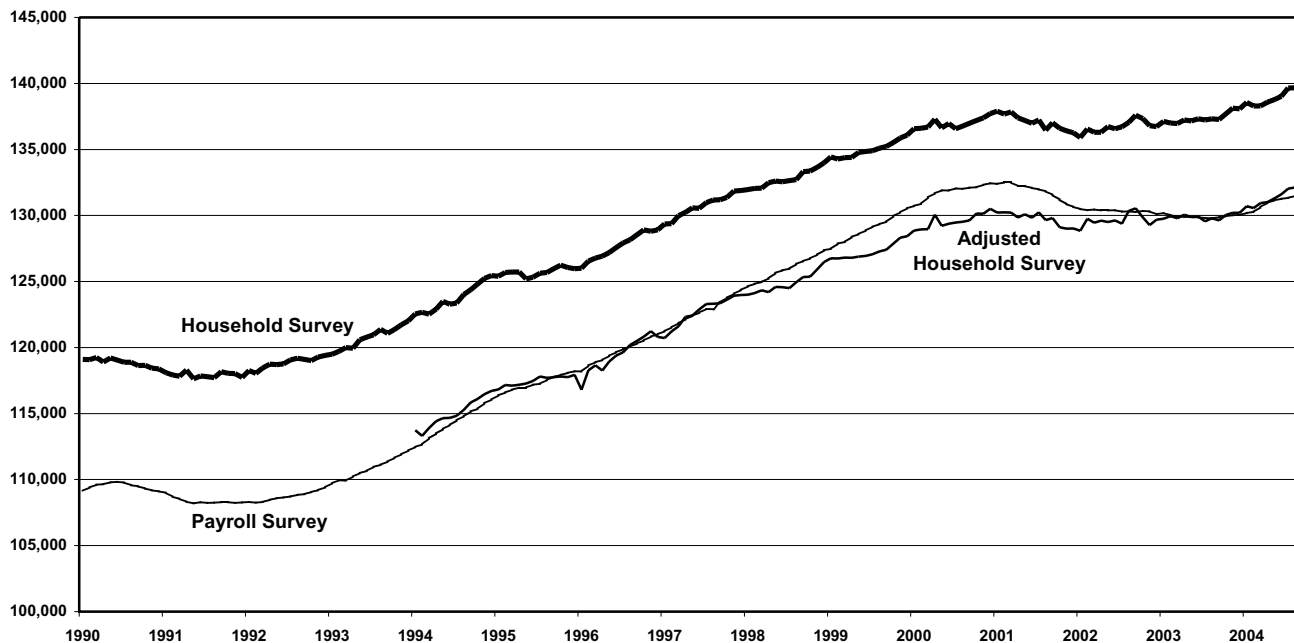
term rates to historic lows and spurred large amounts of mortgage refinancing. Other factors may have contributed, such as a reduction in uncertainty following the major military campaign in Iraq, the technology cycle, and government spending.

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

Other studies also yield small effects of the tax cuts on the economy. Elmendorf and Reifschneider (2002), using the FRB-US model, conclude that an income tax cut of 1 percent of GDP increases real GDP by between 0.5 percent and 1 percent 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.

Congressional Budget Office (2003) used two macroeconomic models to analyze the short-term impact of the budget proposals in the administration's fiscal 2004 budget, including the basic framework of the 2003 tax cut. It found that the effect on real GDP in 2004 would be between 1 percent and 1.3 percent, about the same

Figure 3
Household and Payroll Survey Employment, January 1990–August 2004
Seasonally Adjusted, in Thousands



Sources: For Payroll Survey series: Bureau of Labor Statistics, Current Employment Statistics; for Adjusted Household Survey series and Household Survey series 1990-2003: BLS, Division of Labor Force Statistics, September 3, 2004; for Household Survey series 2003-2004; BLS, Current Population Survey.
 Note: Adjusted Household Survey: adjusted to an employment concept more similar to the payroll survey. Adjusted Household Survey series and Household Survey series 1990-2003 are smoothed for population control revisions. Household Survey series 2003-2004 is not smoothed.

magnitude as the increase in the budget deficit as a share of GDP under the administration's policies relative to the CBO baseline.

B. Effects on Consumption

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

1. The marginal propensity to consume (MPC). Shapiro and Slemrod (2003) report that 22 percent 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. Shapiro and Slemrod (2002) report a plausible set of assumptions that implies that the aggregate marginal propensity to consume out of the rebate was about 35 percent. They conclude, 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.

Johnson, Parker, and Souleles (2004) find somewhat stronger effects on consumption. 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 percent of the rebates on nondurable goods during the three months in which the rebates were received and spent perhaps another third of the rebate in the second three months.

Two studies have also examined the effects of the changes in the child credit and withholding allowances in 2003. Shapiro and Slemrod (2004, in progress) find that among those who qualified for the child credit expansion, 26 percent said they would "mostly spend" the funds, 26 percent would save the funds, and the remainder would pay down debt. The change in withholding rules generated even smaller propensities to spend. Coronado, Lupton, and Sheiner (2004, in progress) estimate the determinants of the usage of funds reported by households. They obtain an estimated aggregate MPC of 24 percent for income because of the changes in the child credit and 16 percent for income because of the changes in withholding.

2. Effect on aggregate consumption. The studies of the 2001 rebate suggest MPCs out of the rebate ranging from 35 percent over the first year to two-thirds in the first six months. Since the rebates totaled \$38 billion in 2001, or 0.38 percent of GDP, the effect on consumption would be between \$13 billion and \$26 billion, or between 0.13 percent and 0.26 percent of GDP in 2001. For the 2003 tax cut, both the size of the rebates and the estimated marginal propensity to consume out of them seem to be somewhat smaller. In short the aggregate effects of the rebates on consumption and GDP were quite small.

C. Effects on Investment

Many studies examine the effects of the accelerated depreciation provisions of the 2002 tax cut. The effect of the bonus depreciation provision is smaller the lower the inflation and nominal interest rates, because the difference between expensing and depreciation is attenuated at low inflation (Cohen, Hansen, and Hassett 2002). Goldman (2004) 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 calculations suggest that the bonus depreciation provision reduces the after-tax cost of computer purchases, for example, by only 2 percent. Cohen, Hansen, and Hassett (2002) estimate that bonus depreciation reduced the cost of capital on new equipment investment by between 1.2 percent and 4 percent, depending on the tax life of the asset and assumptions about whether the provision would be made permanent. Applying an investment elasticity of about 0.7, based on Cummins *et al.* (1994) suggests that investment would rise by between 0.8 and 2.8 percent. Since equipment investment is less than 10 percent of GDP, investment would rise by roughly 0.1 to 0.3 percent of GDP. Desai and Goolsbee (2004) find that the bonus depreciation provisions may have raised investment by 2 percent. As noted above, House and Shapiro (2004b) find almost no impact of the bonus depreciation provisions on GDP.

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.

The effect of the reduction in dividend and capital gains taxes in 2003 on investment depends on whether the old or new view holds, the identity of the marginal investor, and other factors. (Carroll, Hassett, and Mackie (2003) estimate that the president’s plan would reduce the economywide marginal effective tax rate on capital to 17.3 percent from 19.1 percent under the old view and to 16.6 percent from 17.4 percent under the old view. Those estimates translate into reductions in the user cost of capital of about 1 percent. Carroll *et al.* (2003) provide a crosswalk from the effective tax rate to the user cost of capital.) 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.

IV. Bang for the Buck

Gale, Orszag, and Sperling (2001) 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).²

A. 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 tax cut 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.

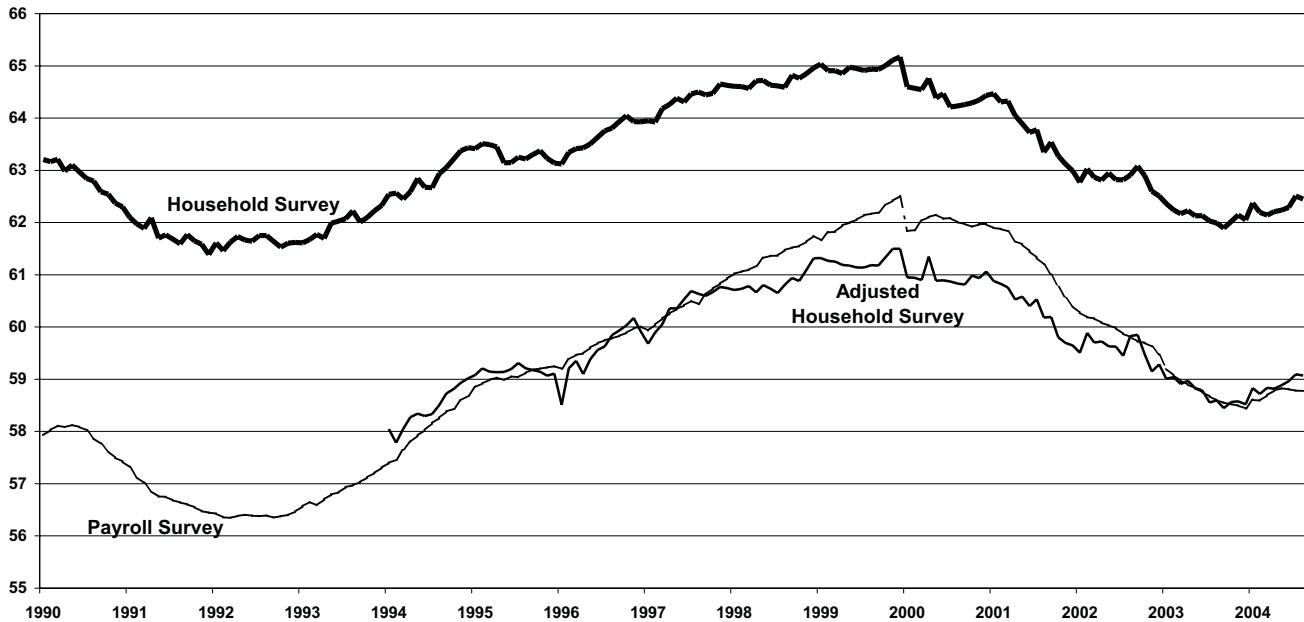
Historically, discretionary tax policy has had a weak record in stimulating short-term economic activity in a timely and effective manner (Lindsey 1990, Modigliani and Steindel 1977, Taylor 2000). Timing, in particular, has been a major problem in the past. It was not uncommon for the economy already to have 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 backloaded, with phased-in reductions in marginal tax rates. That backloading 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 (Elmendorf and Riefschneider 2002, Gale and Orszag 2003), which dampens demand for durable goods and investments. The phase-in of lower tax rates can reduce labor supply (House and Shapiro 2004a) and might delay the potential increase in spending (Parker 1999, Souleles 1999, 2002).

Second, the tax cuts were regressive (see Gale and Orszag 2004a); 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 conclusive, it seems that low-income households have higher marginal and average propensities to spend out of current income than higher-income

²The 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 and the Senate supporting a stimulus package and putting forward several important principles, including that the measures should “achieve the greatest possible stimulus effect per dollar spent.” See “Principles for Economic Stimulus,” Kent Conrad, Pete Domenici, Jim Nussle, and John Spratt, October 4, 2001.

Figure 4
Employment-Population Ratio (Percent) From Household and Payroll Surveys
January 1990-2004



Sources: For Payroll Survey series: Bureau of Labor Statistics, Current Employment Statistics; for Adjusted Household Survey series and Household Survey series 1990-2003: BLS, Division of Labor Force Statistics, September 3, 2004; for Population series and Household Survey series 2003-2004: BLS, Current Population Survey.
Note: Adjusted Household series: adjusted to an employment concept more similar to the payroll survey. Adjusted Household Survey series and Household Survey series 1990-2003 are smoothed for population control revisions. Population series and Household Survey series 2003-2004 are not smoothed.

households.³ Evidence from the 2001 tax cuts bears out this tendency. Johnson, Parker, and Souleles (2004a) show that the marginal propensity to consume the 2001 rebate was .75 for households in their low-income category, substantially higher than their overall average of .2 to .4.⁴

³Dynan, Skinner, and Zeldes (2000), Parker (1999), and McCarthy (1995) suggest that marginal propensities to spend are higher among low-income households. As CBO (2002, p. 7) notes, "As 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 household's income rises, the proportion of that income that is consumed falls."

⁴Shapiro and Slemrod (2002) 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 MPC is more subtle. Thus, their findings do not necessarily imply that the MPC is the same across income groups. Also, 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.

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

Fourth, even those provisions that were ostensibly designed to raise consumption, like reductions in dividend taxes, were inefficient ways of doing so (Burman, Gale, and Orszag 2003, Gravelle 2003). One claim was that dividend tax cuts would boost the stock market, raising wealth and therefore raising consumption. That effect is likely to be small relative to other options. Under simplifying assumptions, a reduction in the present value of dividend taxes by \$1 should raise the stock market by \$1 and raise current consumption spending by just 3 cents to 5 cents.

Fifth, 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 that reason. Even with that provision, however, policymakers may have undercut the stimulus effect. Contrary to theory and evidence, administration economists argued that making the tax cuts permanent would provide a

bigger stimulus.⁵ In addition, while the 2002 tax cut set the first-year write-off at 30 percent of investment value for investments made before September 11, 2004, in 2003 Congress and the administration extended the expiration date to the end of 2004 and expanded the write-off to 50 percent. Those legislative actions and encouragement by senior administration officials may have given businesses the indication that policymakers were willing to consider extending that provision or making it permanent. Indeed, a survey by the National Association of Business Economists (2004), released on January 20, 2004, found that 62 percent of respondents expected the provisions to be extended. (An even larger share, 73 percent, reported that bonus depreciation had no effect on their firm's investment.)⁶

⁵On the October 7, 2001, edition of ABC's *This Week*, George Stephanopoulos asked then-CEA Chair Glenn Hubbard whether temporary investment incentives would have a larger bang for the buck than permanent incentives. Hubbard said that was not the case: STEPHANOPOULOS: And he [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. 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. 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 years duration.

⁶Another 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 geared toward 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 (Friedman 1957, Souleles 2001). Nevertheless, temporary tax cuts *focused on liquidity-constrained households* might nonetheless have a higher bang for the buck than permanent tax cuts geared toward high-income (nonconstrained) households. First, the evidence suggests some positive responses to temporary tax cuts (Blinder and Deaton 1985, Okun 1971, Poterba 1988), and that households do not respond to scheduled tax changes until they take effect (Parker 1999, Souleles 1999, 2002). 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 (Campbell and Mankiw 1990). For those 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, Johnson, Parker, and Souleles (2004) found that low-income households consumed most of the rebates they received from the 2001 tax legislation (Shapiro and Slemrod 2002 did not find those income-related responses,

(Footnote continued in next column.)

B. 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. For example, as noted above, evidence in House and Shapiro (2004a, 2004b) indicates that the tax cuts raised GDP by 0.6 percent in 2004. Yet the tax cuts in 2004 alone reduced revenues by \$286 billion, or about 2.5 percent of GDP. Gale and Orszag (2004c) Using those estimates, the bang for the buck is extremely low, just 0.24 (0.6/2.5).

Many 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 (2003a, b) imply a bang for the buck of about 0.70 for the president's tax proposals in 2003. But the programs with the largest "bang for the buck" are those that target low- and middle-income households, including the child tax credit rebate (1.04) and the acceleration of the 10 percent bracket (1.34). In contrast, the dividend tax cut scored remarkably poorly in that regard, with a bang for the buck less than 0.10.⁷ Likewise, several policies emphasized by 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 would also prove to be a very helpful stimulus, with a ratio of 1.24. Economy.com (2004) offers an alternative set of proposals that would emphasize increasing aggregate demand among low- and middle-income households and estimates a bang for the buck of several times that of the president's tax proposals.

CBO (2002) reports similar rankings of the president's and other policies. CBO (2002, table 1) concludes that bangs for the buck are "small" for accelerating the EGTRRA tax rate cuts, and cutting taxes on capital gains, and "medium" for temporary investment incentives. The largest ratios were found for tax cuts geared toward low- and middle-income households.

All of those 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.

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however). 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.

⁷This is consistent with a statement signed by 10 Nobel Prize winners in economics that noted, "The permanent dividend tax cut, in particular, is not credible as a short-term stimulus" (EPI 2003).

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