Marginal Tax Rate Cuts and the Public Tax Debate

INTRODUCTION

I n the spring of 2001, President Bush proposed a tax bill that had the primary objective of reducing marginal income tax rates. In May, a bill that essentially followed the outlines of the Bush proposal became law. The Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA) lowered statutory marginal tax rates for many individual taxpayers, and these reductions were phased in over many years.

During the course of the public policy debate concerning the likely economic impact of EGTRRA, very little reference was made to the public finance literature concerning the likely impact of marginal tax rate reductions. Instead, proponents of the bill, like the president himself, argued that the reduction in revenue was advisable because it would lower the growth of government spending.[1] Opponents of the bill chose to emphasize two effects of the bill. First, they argued that the bill benefited the wealthy disproportionately (see, for example, Greenstein 2001), and they connected the reduction in the budget surplus that would result from the decline in revenue to long–term interest rates, arguing that the increase in rates would offset any gains that the marginal rate reductions might provide.

It is likely that the political arguments deviated sharply from the economic arguments that might typically inhabit the pages of an academic journal such as this one, for two reasons. First, as documented by Gale and Potter (2002), the academic literature concerning the likely impact of marginal tax rate reductions leads to no obvious broad conclusions. Second, and likely more importantly, political rhetoric likely gravitates towards issues that resonate with voters.

This paper explores in detail the specific arguments, that proved most decisive during the political debate, that are often neglected by tax economists: the effect of changing tax revenues and deficits on interest rates, and the effect of changing revenues on government spending. To do so, we draw on a macroeconomic literature concerning the impact of changing government debt on interest rates, and provide regression evidence concerning the impact of unforecasted

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[1] See, for example, the Bush campaign document, "The President's Agenda for Tax Relief," February 2001.

changes in revenue on government spending. After drawing what conclusions we can on these issues, we then combine these with some broad–brush evidence concerning the impact of marginal tax rate reductions to provide a perspective on the likely general equilibrium effects of EGTRRA once it is fully phased in.

CHANGES IN GOVERNMENT DEBT AND INTEREST RATES

It has often been argued that permanent reductions in tax revenue would produce increases in government debt that would put upward pressure on long–term interest rates, and thus, reduce investment. Senator John Corzine and former Secretary of Treasury Robert Rubin are leading public advocates of this position, as is Alan Greenspan, whose comments before the Senate Finance committee in January 2002 specifically stated this argument.[2]

Given the strong statements, one would expect to be able to point to careful economic analyses to support those statements about the reactions of interest rates to changes in the government's fiscal circumstances. The surprising fact is that few such studies exist. To the contrary, every modern study that has been published on this topic, of which we are aware, has failed to find any link between reductions in surpluses (or increases in deficits) and rises in interest rates. As Evans (1985, 1987a, 1987b) points out in a series of careful studies of links between deficits and interest rates in several countries, even large deficits produced by wartime spending have no discernible effect on long–term interest rates. For example, Evans (1985) explores the impact on interest rates of the dramatic increase in government debt associated with the Civil War, World

War I, and World War II. These are three periods during which deficits surged to more than 10 percent of gross domestic product (GDP). Regression analysis found little connections between interest rates and these surges in deficits. Indeed, Evans often found that the impact appeared to have the incorrect sign.[3] Other studies published since Evans' papers on this topic have reached similar conclusions.[4]

To theoretical macroeconomists these results are not very surprising, for several reasons. First, as Barro (1974) has pointed out (and as the great classical economist, David Ricardo, was first to note), forward looking taxpayers should (at least partly) offset increases in government debt with private savings, if they anticipate increases in future taxes to repay the new debt. Perhaps more importantly, when open international capital markets allow countries to draw on each other's savings, small increases in the amount of one country's debt will be offset by savings pulled into that country from abroad, leaving interest rates little changed.

Furthermore, increased private savings, domestically or from abroad, may not be necessary to prevent interest rates from rising if the growth in government debt can be absorbed by the central bank, rather than by the public, without spurring inflation. In a growing economy, debt can be absorbed *without spurring inflation* so long as the growth of government debt does not outstrip the real rate of growth of the economy. The logic of this link was established in several papers in the early 1980s, perhaps most clearly in McCallum (1984).

In fact, the growth condition in McCallum (1984) essentially defines what is meant by a "moderate" change in government debt, that is, a change in govern-

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ment debt that will not put pressure on interest rates. If revenue reductions lead to permanent government debt growth in excess of the real growth rate of the economy, then there is no alternative to inflationary money creation to repay the growing debt. That money creation and inflation will be anticipated, and will thereby produce immediate increases in long–term interest rates. As long as debt grows at a slower rate, however, it will be absorbed into the growing balance sheet of the central bank, and thus pose no threat to nominal interest rates.

If debt growth in excess of moderate growth forced inflation higher, that would have an effect on real interest rates, as well (that is, on the real cost of borrowing, defined as the difference between nominal interest rates and expected inflation). Real interest rates are the more relevant variable in investment decisions, since borrowers' incomes will tend to rise with inflation. If nominal rates are pushed up by inflation, real interest rates will also be affected if inflationary *uncertainty* is a by–product of higher inflation (as tends to be the case). Thus, real interest rates would be adversely affected by "immoderate" debt growth, implying a real threat to investment from immoderate deficits. It should be noted that other effects from inflation on investment could either offset or reinforce the effect of inflationary uncertainty on real interest rates.[5]

In summary, theoretical analysis suggests that moderate growth in government debt—whether "monetized" by the Federal Reserve or held by the public—is likely to have little or no effect on interest rates and the cost of investing. First, new government debt offerings are partly offset by compensating increases in domestic savings. Second, any upward pressure on interest rates is diffused over the entire global capital market, which is capable of absorbing increased debt with much less impact on interest rates than the domestic capital market alone. Finally, the need to grow the money supply alongside real growth in the economy also implies substantial capacity to grow government debt without increasing the amount of debt held by the public, thus avoiding deficit crowding out and upward pressure on interest rates.

This theoretical conclusion (that there are levels of debt growth that will not affect interest rates) is, as discussed earlier, clearly evident in the data. In the U.S., at least, the fluctuations in government debt appear to have been in the moderate range. It is important to emphasize that the failure of the literature to find a link between deficits and interest rates is not likely a result of excessive noise. Consider the following example. The bottom panel of Figure 1 plots real interest rates on 10–year government debt for the United States and Japan over the past three years. The top panel shows the debt–to–GDP ratios of the two countries for the same period. What is most striking about this diagram is the similarity between the levels of real interest rates in Japan and the U.S. and their trends over the past several years, despite the very different history of debt–to–GDP ratios in the two countries. The main conclusion to be drawn from this diagram is clear: despite a substantial decline in U.S. debt–to–GDP ratios during this period, and a simultaneous substantial increase in Japanese debt–to–GDP ratios (which would seem to violate the McCallum condition), long–term real rates have remained essentially the same in the two countries and have tracked each other closely (see the bottom panel of Figure 1). Of course, in today's world of open capital markets, such a result is not surprising. Large changes in

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[5] Offsetting effects include the so–called Mundell–Tobin effect (encouraging investment in real assets to avoid inflation taxation), and tax–related effects through which inflation can reduce after–tax interest rates (Cohen, Hassett and Hubbard, 1999). On the other hand, inflation can reduce the benefits of depreciation. For a more thorough discussion, see Feldstein (1999).

Figure 1. The Ratio of Debt to GDP for the U.S. and Japan
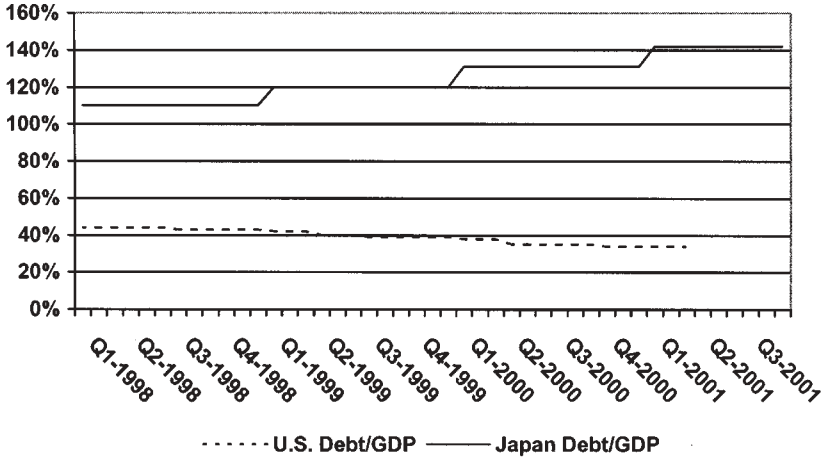
Pictured are the government debts to GDP ratios for the U.S. and Japan. Source: Japanese data courtesy of David Asher. U.S. data is from the Bureau of Economic Analysis and the U.S. Treasury.

Yield on U.S. and Japanese 10–Year Treasury Bonds
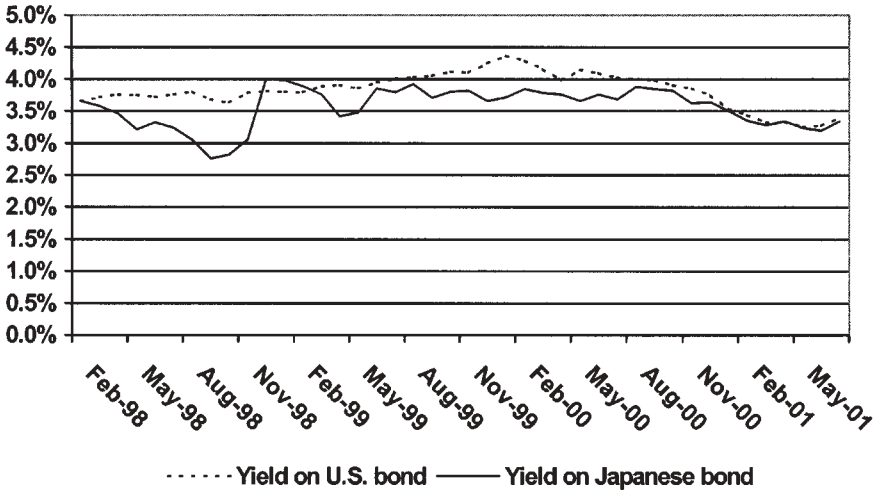
Pictured are the ten—year real interest rates for the U.S. and Japan. The U.S. rate is the 10—year TIP (Treasury Inflation—Protected Securities) rate. The Japanese rate is calculated by the authors and is described in the text.

deficits, up or down, have not mattered for interest rates. Against this backdrop, the relatively small changes in deficit associated with EGTRRA could not be expected to have an impact on interest rates.

We recognize that Figure 1 does not constitute a formal statistical test of the effects of rising domestic debt on interest rates. A more complete analysis would take account of other influences on interest rates

in each country. Still, it is hard to believe that domestic deficits or surpluses in the two countries had important effects on real interest rates that are hidden because of coincidental, exactly offsetting domestic influences in each country that reduced real interest rates in Japan and raised them in the U.S.[6] Moreover, the academic literature emphasized earlier reaches similar conclusions after exhaustive econometric analysis.

Prospectively, the policy question of interest is how much capacity exists for increasing U.S. government debt without affecting interest rates. Figure 1 shows that reductions in U.S. debt from 44.5 percent of GDP to 33.9 percent of GDP over the last several years have had no perceptible effect on interest rates, and the same was true for an almost 50 percent increase in the ratio for Japan. Accordingly, the Bush tax cut, which was statically scored at $1.35 trillion (about 10 percent of GDP) over ten years (See Gale and Potter, 2002, Table 3) would likely not lead to a striking surge in interest rates even if the static score were accurate. Of course, the static score is likely an overestimate of the true costs of EGTRRA to the extent that economic activity responds favorably to the marginal tax rate reduction. Gale and Potter (2002), however, show that higher interest payments and Alternative Minimum Tax relief may push the cost as high as $2.1 trillion.

GOVERNMENT SPENDING AND TAX REVENUE

Surprisingly little work has been done calculating the propensity to consume out of new revenues of the U.S. government. At first glance, the link may appear to be quite weak. For example, Figure 2 plots the ratio of On–budget spending to GDP and the ratio of On–budget revenue to GDP for the U.S. from 1950–2000. No obvious pattern is evident.

These broad–brush patterns may be misleading, however. Much of government spending in any year involves commitments that were made in previous years, and trends may be affected by exogenous factors such as the end of the Cold War. EGTRRA, for example, was not included in long–run projections prior to 2001, and hence had no explicit impact on budgetary constraints that may impact spending. After its passage, however, the long–run forecasts changed, and the tighter fiscal situation has put pressure on spending. In order to evaluate the Bush claim that a reduction in revenue would lower government spending, a measure

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[6] To measure long–term real interest rates for the United States, we use inflation–indexed, ten–year U.S. Treasury debt, which avoids the need to estimate expected inflation, and subtract it from observed nominal yields. Another advantage from using indexed Treasury debt is that doing so abstracts from extreme time variation in the special liquidity premium enjoyed by non–indexed U.S. debt (the short–term demand for which can be importantly affected by international flights to dollar–denominated high–quality assets, as after August 1998).

  For Japan, we construct real yields by assuming a constant rate of expected deflation, which we set equal to 2 percent throughout the period. This method requires some judgment about the unobserved expected ten–year inflation rate (the time period relevant for measuring real yields on ten–year debt). Actual inflation rates during this period differ greatly in Japan according to which price index one chooses, and Bank of Japan studies have argued that true deflation has been higher than measured deflation in recent years, as the result of flaws in price indexes. The consensus view of the recent experience is that actual deflation has been roughly 2 percent for recent years. In any case, future expected inflation or deflation over a ten–year period may differ from past inflation or deflation. Indeed, long–term inflation expectations may have increased slightly in Japan in recent months, as some analysts recently have been forecasting policy changes at the Bank of Japan that would bring an end to deflation, and there has been widespread discussion of targeting a zero inflation rate. Others believe that the deflationary trend will continue. Our assumption of a constant 2 percent deflation rate for the period is a conservative estimate for our purposes. It is conservative because our purpose is to show that real Japanese interest rates have not risen in response to increased Japanese deficits. By assuming constant deflation (rather than assuming a decline in expected deflation in recent months) we bias the data against making our point.

Figure 2. Ratios of Receipts to GDP and Outlays to GDP (excluding Social Security)
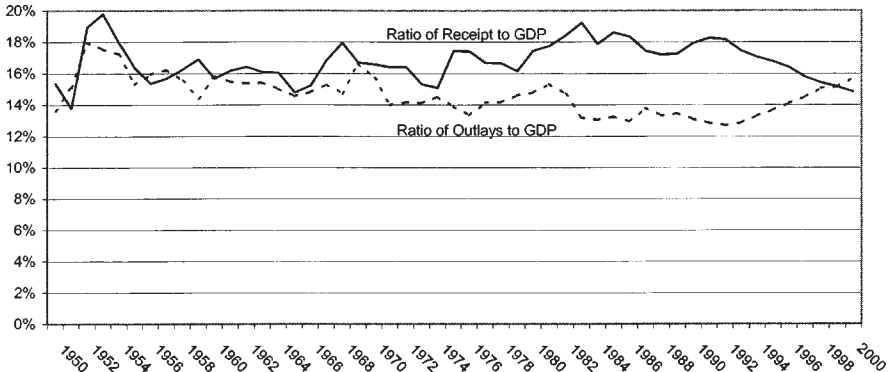
Source: *Economic Report of the President, 2001.* Table b–78 "Government Finance".

of the government's marginal propensity to spend out of new dollars is required. Accordingly, in this section, we attempt to isolate the impact of higher revenues on government consumption spending by performing a regression analysis that uses the dynamics of the budget process to identify the government's marginal propensity to spend in response to positive and negative revenue surprises.[7] We focus on surprises because these, by their nature, could not have influenced previous commitments.

Specifically, Congress receives from the Congressional Budget Office ten–year revenue forecasts each year. These forecasts act as a loose budget constraint for spending programs. When the forecast is revised up in a given year, then elected officials effectively have money to spend that they did not know they would have a year earlier. The question then becomes, what happens to that newfound money? The situation can arise whenever spending or revenue change because of unforeseen policy changes or economic events.

We regressed the discretionary spending surprise for a given year against the non–entitlement revenue surprise that was known at the time that spending was determined. To control for possible cyclical effects, we also included beginning of period growth in gross national product, and, because the forecast deviation is relative to a twice–lagged forecast, two moving–average error terms.

The data for the Congressional discretionary spending project come from the CBO's January forecasts for 1983 through 2001.[8] Forecast numbers for total tax revenues, social insurance revenues, and discretionary expenditures come from the budget forecast tables listed in the CBO's *Economic and Budget Outlook* published in 1983 through 2001 and from the *Economic and Budget Outlook: An Update* for 1983 through 2000. These projections are fiscal year estimates. Consequently, fiscal year estimates of actual outlays and actual GDP come from "Appendix F," the historical budget data table in *The Economic and Budget Outlook: Fiscal Years 2002–2011.* Both the

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[7] Strictly speaking, our measure of government expenditure does not exclude all non–investment expenditures, but discretionary expenditure is primarily composed of consumption expenditure.

[8] We are grateful to Alan Auerbach for providing us with some of these data. The data are available to interested readers.

projections and the historical numbers are in nominal terms. The revenue variable used in the regression, "other" revenue, is made up of all forms of tax revenue other than social insurance (i.e., total"– social insurance = "other").

The form of the regression for this analysis is:

$$(\log S_t - \log O_t^{t-2}) = constant + a(\log R_t^{t-1}$$

$$- \log R_t^{t-2}) + b(\log GDP_{t-2} - \log GDP_{t-3}),$$

where, S_t = actual outlays, O_t^{t-2} = January forecast of outlays for year t made in year $t-2$, R_t^{t-j} = January forecast of "other" Tax Revenue (total – social insurance) for year t made in year $t-j$ ($j = 1,2$), and GDP_{t-j} = beginning of period gross national product in year $t-j$ ($j = 2,3$).

Note: The subscript t runs from 1983–2001. Superscripts represent the year the forecast was made. Subscripts represent the year of the forecast. When no superscript appears actual data is used.

Table 1 contains the results of a representative set of our regressions. There are a number of interesting patterns in the forecast data. Spending changes tend to be bigger when there are larger revenue surprises, with the innovation to spending generally being about half the innovation to revenue and highly statistically significant. Positive (negative) spending surprises are more likely when beginning–of–period GDP growth was low (high), reflecting the fact that the CBO is unable to forecast turning points.[9] Spending innovations have some significant residual serial correlation, but the pattern of that correlation is not consistent across specifications. Finally, the inclusion of contemporaneous GDP growth (GDP Same) does not alter the results nor does the inclusion of the recession dummy.

TABLE 1
DEPENDENT VARIABLE = SPENDING CHANGE ($\log S_t - \log O_t^{t-2}$)
OBSERVATIONS = 15
(t–STATISTICS)

Independent Variables	(1)	(2)	(3)
Constant	.106 (4.596)	.082 (1.707)	.072 (1.951)
Revenue Shock ($\log R_t^{t-1} - \log R_t^{t-2}$)	.499 (3.259)	.520 (2.980)	.621 (2.474)
GDP Change ($\log GDP_{t-2} - \log GDP_{t-3}$)	−1.851 (−4.667)	−1.582 (−3.858)	−1.353 (−2.357)
GDP Same ($\log GDP_t - \log GDP_{t-2}$)	—	.062 (.155)	—
Recession Dummy	—	—	.040 (.940)
MA(1)	.083 (.296)	.248 (.810)	−.112 (−.308)
MA(2)	−.854 (−3.706)	−.708 (−2.688)	−.668 (−1.900)
Adjusted R²	.742	.665	.494

Note: MA terms are moving–average errors.

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[9] More specifically, the result is consistent with a tendency to extrapolate current growth trends off into the future more than would be consistent with the time series properties of GDP.

These results imply that government spending responds positively to news that there is more revenue to spend. Our column 2 estimates suggest that a 10 percent surprise in revenue would lead to an increase in spending of about 5 percent. The long run impact of this type of spending binge may be quite dramatic, since spending has a great deal of persistence.

The results are, however, to a large extent driven by the last few data points, where both revenue and spending surged. If the very last year is removed from the data, for example, then the significance of revenue drops to the 90 percent confidence level in column 3, but remains significant in columns 1 and 2. Moreover, recent events suggest that the relationship may weaken as new data arrive. For example, the surge in spending that accompanied the response to the September 11th tragedy coincided with a sharp decline in projected revenue. Such exogenous occurrences highlight the difficulty of making strong inferences based on so few data points.

Despite the small sample size on which these estimates are based, these results provide some support for the view that tax cuts may reduce the growth of government spending. Whether that reduction is desirable will depend on the extent to which government spending improves social welfare and economic growth. There is a large literature on the impact of government spending on growth that includes government spending along with many other economic variables in long–run Solow–growth regressions. Most researchers confirm the finding of Barro (1991) that government spending itself contributes significantly negatively to long–run economic growth, unless it is of the capital infrastructure variety. Barro concludes that "it is a robust finding that (government con-

sumption) is negatively related to per capita growth." Recent contributions include Alesina, Ardagna, Perotti, and Schiantarelli (1999), who found, using OECD data, that government spending has a sizable negative effect on investment spending and economic growth. Alesina and Perotti (1996) found in a sample of OECD countries that fiscal adjustments that reduced government spending lead reliably to *higher* output growth, whereas fiscal adjustment that attempted to balance budgets through higher tax rates generally failed to do so. The failure of fiscal policy was likely attributable to the negative economic effect of marginal tax rates, and, given our results, to the tendency for higher spending to accompany higher revenue (at least in the U.S.).

These results, taken together with the analysis in this section, suggest an interesting dynamic scoring issue. If there is no tax reduction then according to the results in Table 1 perhaps some of the tax revenue "saved" would immediately be spent. If that higher spending is in the form of government consumption as opposed to government investment, then the negative economic growth effects may be quite sharp. For instance, using the example reported by Barro (1991), if government consumption relative to output increases by 0.054 then the impact on the long–run per capita growth rate of the economy will be to reduce it by 0.8 percent. Assuming that government consumption responded immediately to a positive shock of Gale and Potter's cost estimate of $383 billion in 2011, then this implies that government spending would increase by about 0.01 relative to output absent the tax cut. As we will see, this potential negative government spending effect on growth is almost as important as the positive stimulative effects of lower marginal tax rates.[10] These points are

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[10] To the extent that the higher government spending constituted investment spending by the government, these growth effects would be reduced.

consistent with the findings of Alesina, Ardagna *et. al.*

THE IMPACT OF LOWER MARGINAL TAX RATES

Lower marginal income tax rates lower the tax on both labor and capital income. Thus, they have the potential to positively stimulate the growth of inputs and the economy; the myriad channels through which this occurs are discussed in detail in Gale and Potter (2002). The many different effects of marginal tax rate reductions on economic behavior have been incorporated into computational general equilibrium models in order to acquire an impression of the likely total impact of tax reforms on the economy. There is general agreement in a large and growing literature that marginal rate reductions stimulate the economy, but the scale of the effects is highly uncertain.

The theoretical models that have been used to study tax reforms include traditional dynamic models, such as that of Auerbach and Kotlikoff (1987), and endogenous growth models such as Romer (1986) and Jones, Manuelli, and Rossi (1997). In the traditional models, growth is not increased in the long run by lower marginal rates but is stimulated in the short run by factor accumulation. For example, Auerbach and Kotlikoff (1987) find that a proportional income tax that replaces a graduated income tax on a revenue neutral basis increases the aggregate steady–state capital stock by about 10 percentage points, but in the steady state the growth of output is the same. Endogenous growth models allow a permanent growth effect, since higher capital investment can lead to positive productivity feedback. Growth effects in endogenous growth models can be quite a bit larger than in the more traditional models. Jones *et. al.*, for example, report that average annual growth rates may be as much as 4 to 8 percentage points higher in a similar experiment. Other work (e.g., Mendoza, Milesi–Ferretti, and Asea, 1997), however, finds much smaller effects even in endogenous growth models. Clearly, the impact of EGTRRA on growth, if specifically included in these models, would be very uncertain.

Two other recent theoretical developments, however, have suggested that the positive growth effects of lower marginal rates may be larger than has been predicted by the traditional models (such as Auerbach and Kotlikoff, 1987). While it is hardly a targeted reduction, lower personal income tax rates lower the tax on capital income. If there is imperfect competition, then the benefits from lower marginal rates on capital income can be an order of magnitude larger than those in models that rely on perfect competition (e.g., Judd, 2001). This result is quite intuitive. Since imperfect competition induces firms to lower their capital stocks relative to the competitive equilibrium, then a tax on capital income moves capital even further away from the optimum. Indeed, optimal tax policy may involve capital subsidies in such cases. Second, most of the models that have been used to study the effects of tax reforms are closed–economy models. Models that allow for international capital flows can yield significantly larger positive growth effects of marginal capital income tax rate reductions. Razin and Yuen (1995), for example, find that the positive growth effects of lower marginal rates are 250 times larger when their model allows for an open economy and free capital flows. Such large gains are possible because the growth rate of capital inputs no longer depends so crucially on relatively insensitive domestic consumer behavior. This observation gains significant additional weight if interest rates are insensitive to deficits, as suggested by the previous section, because such insensitivity is perhaps best explained by the openness of the U.S. economy.

An alternative empirical literature provides a different perspective on the likely economic benefits of lower marginal income tax rates. Feldstein (1995), Feldstein and Feenberg (1996), Saez (1999), and Gruber and Saez (2000) have investigated the extent to which taxable income responds to changes in tax rates. While there is little evidence that primary workers change their labor supply significantly in response to tax changes, this response can occur through many possible channels. Individuals can choose to take more compensation in forms that are tax–subsidized if rates are higher, and second earners can move in and out of the labor force. A key focus of this literature has been the identification of the elasticity of taxable income with respect to tax rates. Feldstein (1995) has shown that under some circumstances, this parameter is proportional to the deadweight loss of the tax. Early estimates of this elasticity found that it was quite large, perhaps greater than one (Feldstein, 1995) in absolute value, but subsequent work that has relied on larger panel data sets has found a somewhat smaller elasticity. Gruber and Saez (2000), for example, find that the elasticity may be closer to 0.4 in absolute value although they found much larger elasticities for high income individuals who were significantly affected by the Bush tax cuts. Taking these lower effects into consideration, the Bush tax reductions can be expected to increase taxable income by no less than 4 percent and perhaps as much as 12 percent.[11] This response, however, assumes that marginal rate reductions affect more taxpayers than they actually do.

This literature suggests that the *ceteris paribus* revenue costs of the Bush plan are most likely smaller than those in the static score, and that the deadweight loss associated with the previously higher marginal tax rates was significant, perhaps as high as 1 dollar of deadweight loss for each dollar of revenue.[12] However, it is difficult to say how much of the change in reported income found in these articles comes from changed labor behavior and how much comes from shuffling assets, and whether this could work to offset the other factors mentioned in Gale and Potter (2002) that would increase the efficiency cost of EGTRRA.

The theoretical models provide a broad range of estimates concerning the impact of EGTRRA, and the elasticity estimates vary widely as well. Accordingly, we believe that the best method for analyzing the likely growth and welfare effects of the cut remains the broad–brush method employed by Engen and Skinner (1996). They performed cross–country regressions to explore the impact of tax rates on economic growth. Using their estimates, they simulated the impact of an across–the–board 5 percentage point marginal income tax cut, and found that such a policy would increase GDP growth by about 0.3 percentage points annually. That is likely an upper–bound approximation of the impact of the Bush cut, which lowers rates in the different tax brackets by between 3 and 5 percent, and expands the coverage of the 15 percent bracket significantly in the guise of marriage penalty relief. The estimate is an upper bound because so many taxpayers, as discussed in Kiefer et. al. (2002), likely will not experience marginal rate reductions because of technical features of the tax code such as the Alternative Minimum Tax, unless further changes are enacted.

Some Thoughts On Dynamic Scoring

Given that the literature has begun to converge to a belief that taxable income does respond to marginal rate cuts, revenue estimators may wish to begin to in-

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[11] Feldstein (2000) reports these calculations, which referred to the original Bush plan.

[12] The deadweight loss estimate is from Feldstein (1995).

corporate such estimates into their scoring exercises. The large uncertainty surrounding growth effects, however, suggests that attempts to account for these in official scores may still be ill–advised. The literature, however, provides support for the view that tax cuts affect economic behavior, and that the choices made by policy makers can significantly change economic welfare.[13]

Consider, for example, two possible simplified scenarios. In the first, no tax cut is passed (and this non–action by the government results in a negative revenue surprise) government spending grows in response to the higher revenue in a manner consistent with our regression estimates, and the higher government spending has a negative effect on long–term GDP growth. In the second case, the Bush tax cut is passed and has the effect on growth predicted by the Engen and Skinner regressions, and effectively maintains government spending on the baseline. Starting from a baseline of 3 percent GDP growth, then, the government spending effect in the first scenario lowers GDP growth to 2.8 percent. The second scenario raises GDP growth to about 3.3 percent because the government spending is the same as in the baseline and because of the positive impact of marginal tax rate reductions. Starting from an initial condition with real GDP of $10 trillion, after 10 years, the difference between these two paths is enormous, with real GDP $655 billion higher in scenario 2.

With government receipts 20 percent of GDP, the extra revenue in scenario 2 is $131 billion. After 20 years, the difference between the two paths is even larger, with GDP about $1.7 trillion higher and revenue $350 billion higher. So even in this scenario, the tax cut does not "pay for itself" for a very long time. To the extent that debt is higher, however, it is not obvious what the long–run costs, if any, are.

While we would not want to put too much emphasis on these specific calculations, which are purely illustrative, we think that they highlight the possible large welfare gains associated with marginal tax rate reductions. While reasonable scenarios could easily be concocted that reduce the various effects, the opposite is also true. It is especially noteworthy that these calculations do not reference the influence of imperfect competition and international capital flows, both of which could magnify the stimulative effects of tax reductions significantly.

CONCLUSIONS

President Bush's tax plan likely would provide a small positive long–run stimulus that would significantly reduce its budgetary cost. There is little evidence that the resulting temporary increase in the deficit would have a significant effect on interest rates. We also provide evidence that the counterfactual should take into account the possibility that a significant proportion of extra funds in Washington are spent. While long–run budget issues associated with the very treacherous generational account situation are certainly cause for concern, there is little reason to believe that the strategy of running a budget surplus in anticipation of future shortfalls is feasible given the government's propensity to spend. Moreover, incremental growth improvements can have profound effects on the eventual ability of the economy to deal with such challenges.

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[13] To be sure, current revenue scoring practice allows for some behavioral effects, but not the type of growth impacts suggested by this analysis.

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