"Macroeconomic Implications of Federal Budget Proposals and the Scoring Process"

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Mr. Chairman and Members of the Committee, it is an honor to appear before you to discuss the potential inclusion of macroeconomic effects in the budget scoring process. The scoring process plays an important role in the implementation of fiscal policy, and it is therefore worthwhile to revisit the process periodically to evaluate whether changes are warranted.

As previous witnesses have emphasized, current scoring procedures incorporate many *micro*economic behavioral reactions to policy changes. They do not, however, incorporate *macro*economic effects; in evaluating the budgetary impact of new proposals, macroeconomic conditions are assumed to be unaffected by the individual proposals themselves.

As I argue below, the current system continues to represent the best choice among imperfect scoring alternatives and should not be altered to incorporate macroeconomic responses. In particular, given the current state of macroeconomic knowledge, the inclusion of macroeconomic effects would pose a substantial threat to the integrity of the scoring process. As Chairman Greenspan has testified, "full dynamic estimates of individual budget initiatives should be our goal. Unfortunately, the analytical tools required to achieve it are deficient. In fact, the goal ultimately may be unreachable. The estimation of full dynamic effects requires a model that both captures micro- and macroeconomic processes and produces reliable long-run forecasts of economic outcomes. Unfortunately, no such model exists….We must avoid resting key legislative decisions on controversial estimates of revenues and outlays."[2]

Incorporating macroeconomic effects into budget scoring, furthermore, would exacerbate other biases in the budget process – especially the bias in the official baseline toward unrealistically favorable budget outcomes and the exclusion of debt service costs from individual

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[2] Alan Greenspan, Testimony before the Joint Hearing of the Senate and House Committees on the Budget, January 10, 1995. In 1997, for example, Chairman Greenspan returned to this theme, noting that we should not "abandon what CBO is doing unless and until we have got superior analytical techniques. And I think we should try to do that. If at some point we do get to a capability of doing dynamic scoring, there is no question that that is a superior technique to what we are currently doing. It's just that I don't know how we can do it in a manner which would work." Alan Greenspan, Testimony before the Senate Budget Committee, January 21, 1997. These concerns continue to be relevant in 2002.

budget scores – that encourage fiscally irresponsible policies. In other words, the official baseline makes it appear that more resources are available for tax cuts or spending increases than is actually the case, and the additional interest costs on publicly held debt that arise from tax cuts or spending increases (relative to the official baseline) are not currently included in the scoring of individual budget proposals. Incorporating macroeconomic responses that reduce the estimated budgetary cost of tax or spending proposals would be especially unwise given these other biases toward fiscal profligacy and given the inauspicious fiscal outlook facing the nation. It would also consume scarce resources within the scoring agencies. Outside of the official scoring process, however, government agencies and others should continue to examine the macroeconomic effects of budget policies.

It is also worth noting that the inclusion of dynamic macroeconomic effects may not produce the effect expected by many of its proponents. For example, both the Congressional Budget Office and a recent paper by my colleagues William Gale and Samara Potter have concluded that the long-term impact of last year's tax legislation on national income would be small. Gale and Potter suggest that, if anything, the effect may well be negative, because the adverse effect from the reduction in national saving could dominate the positive effect from the potentially improved incentives to work, save, and take risks.[3] A "dynamic score" of the tax legislation would therefore likely not have affected its cost significantly, and may well have *increased* it rather than reduced it.

An illustrative example: Public infrastructure spending

To see why incorporating macroeconomic effects would be problematic given the current state of macroeconomics, it may be helpful to consider a recent example. Following the September 11 attacks, several policy-makers proposed substantial increases in public capital investments as a spur to the economy in both the short run and the long run.[4] A macroeconomic "dynamic" score of these proposed infrastructure expansions could have included:

- Aggregate demand effects in the short run. Since the economy was operating at less than full capacity during the latter part of 2001, the proposed increases in public capital expenditures could have stimulated the economy in the short run. The expansion in real economic activity would then have boosted tax revenue (by increasing taxable income) and reduced certain types of expenditures (such as unemployment insurance and means-tested benefits). As a result, the net budgetary cost of the proposals would have been reduced in the short run. For example, assuming a simple multiplier of 1.5, and a marginal net tax rate of 30 percent, the net cost of spending a dollar on public capital investment would be only 55 cents.[5]

[3] William G. Gale and Samara R. Potter, "An Economic Evaluation of the Economic Growth and Tax Relief Reconciliation Act of 2001," *Tax Notes,* forthcoming.

[4] As just one example of such a proposal, California Treasurer Philip Angelides, New York Comptroller H. Carl McCall, investment banker Felix Rohatyn, and economist James Galbraith proposed $50 billion over the next 5 years in Federal grants to states for infrastructure projects. See Lee Romney, "Angelides to Lobby Feds for Funds," *Los Angeles Times*, February 6, 2002.

[5] The assumed marginal "net" tax rate includes the effect of higher output on reducing transfer payments. The example is obviously for illustrative purposes only.

- Potential output effects in the long run. Public capital investments can expand the capacity of the economy to produce goods and services, for example by reducing congestion in the transportation system. Expansions in public capital may also raise the return to private investment and thus "crowd in" such investment. Indeed, some academic studies have concluded that public capital investments produce substantial increases in economic output over the long run.[6] Higher output would raise revenue over the longer term, offsetting at least some of the costs of the proposal. For example, assuming a marginal product of public capital of 15 percent, a useful life of the public capital of 30 years, a marginal tax rate of 20 percent, and a real discount rate of 3 percent, the net budgetary cost of $1 in higher infrastructure spending would be only 41 cents in present value.

In other words, in both the short run and the long run, the proposed increases in capital expenditures would affect macroeconomic performance and that change in macroeconomic performance would then affect the net budgetary cost of the proposals themselves. Economists could debate the magnitude (and perhaps even the sign) of the macroeconomic feedback effects, but it would be difficult to argue that their effect would be exactly zero. Thus, the argument would go, if we know that the proposal will have a macroeconomic effect that will in turn alter its net budgetary cost, how can we reasonably exclude the macroeconomic impact from the scoring exercise?

To be sure, many advocates of "dynamic" scoring favor its use in the context of tax cuts, not expansions of public capital investment.[7] Such a distinction between revenue and expenditure proposals, however, makes little sense. The arguments in each case are quite similar; just as advocates of tax cuts often cite controversial evidence regarding their macroeconomic benefits, advocates of public capital, education, and health spending cite controversial academic research showing large macroeconomic benefits from the expansion of such programs. Furthermore, dynamically scoring tax proposals but not expenditure programs would create an even larger incentive to transform spending programs into tax incentives, even if that involves unnecessary administrative and economic costs.[8] Thus, if macroeconomic effects were to be included in the scoring of revenue proposals, they should also be included in the scoring of public capital investments, education programs, and health spending.

Furthermore, from a logistical perspective, it may be much more challenging to incorporate the macroeconomic effects of revenue changes than expenditure changes. The reason is that the Congressional Budget Office (CBO) scores outlays and is also responsible for the macroeconomic baseline projections. "Dynamic" scoring of expenditure changes could

[6] Aschauer, for example, argues that there are substantial returns to public investment. See David Alan Aschauer, "Why Is Infrastructure Important?" in Alicia Munnell, ed., *Is There a Shortfall in Public Capital Investment?* (Federal Reserve Bank of Boston, 1990), pages 21-50. As discussed in the text below, the Aschauer estimates are controversial.

[7] "Dynamic" scoring in this context means the inclusion of macroeconomic feedback effects. The term is somewhat misleading, since current scoring techniques already incorporate microeconomic behavioral responses.

[8] For a discussion of the increasing use of the tax code to accomplish objectives traditionally undertaken through expenditure programs, see Eugene Steuerle, "Tax Policy," in Jeffrey A. Frankel and Peter R. Orszag, *American Economic Policy in the 1990s* (MIT Press: 2002), pages 139-169.

therefore be undertaken internally within CBO. To incorporate macroeconomic effects into revenue estimates, however, would likely require extensive coordination between CBO and the Joint Committee on Taxation (JCT). Such coordination may be difficult to accomplish, especially since many JCT revenue estimates are undertaken under extremely tight time constraints.

If anything, therefore, my focus on dynamically scoring expenditure programs will *underestimate* the difficulties associated with dynamically scoring revenue changes. *Although the rest of my testimony will continue to examine the fundamental issue from the perspective of whether capital investments should be dynamically scored, it is crucial to recognize that the case against dynamically scoring revenue changes, if anything, is thus even stronger than the case against dynamically scoring expenditure changes. At a minimum, my conclusion that the scoring of capital investments should not be extended to incorporate macroeconomic effects holds with at least equal force with respect to tax proposals.*

The challenge of dynamically scoring public capital investments

To incorporate the macroeconomic effects of expanded public capital investments, CBO would face significant challenges in evaluating both the short-run impact and the long-run impact.

Short run

Estimating the impact of higher public capital investments on the economy in the short run would require:

- Making an assumption about how the Federal Reserve would respond to the fiscal policy shift. To the extent that the spur to aggregate demand caused by the increased public capital investment was offset by the Federal Reserve (through increases in its target short-term interest rate), the short-run aggregate impact on the economy would be attenuated or perhaps even eliminated. The reaction of the Federal Reserve is thus important in determining the short-run effects from a fiscal policy shift, and the estimating agencies would be forced to make some assumption about how the Fed would respond.

- Choosing a macroeconomic model for the evaluation. Even after some assumption had been adopted regarding the response of the Federal Reserve, the agencies would have to use a macroeconomic model to evaluate the impact of the public capital expansion. There is significant disagreement within the economics community about the proper underlying framework and structure for macro-econometric models. Furthermore, even models with similar structures tend to produce substantially different results from fiscal policy changes.[9]

[9] See, for example, Eileen Mauskopf and Dave Reifschneider. "Dynamic Scoring, Fiscal Policy, and the Short-Run Behavior of the Economy." *National Tax Journal* (September 1997), pages 631-55.

- Recognizing that the score of a specific proposal would depend on the order of the proposals evaluated. For example, assume that in addition to the proposed increase in capital spending, the CBO also had to evaluate a proposed reduction in personal income taxes and a proposed acceleration in depreciation schedules. Since the alternative proposals could theoretically affect the cyclical position of the economy, the budget score for the public capital investment proposal would depend on whether it was evaluated before, after, or in conjunction with these other proposals. The net cost of the proposal, after inclusion of the macroeconomic effects, could shift substantially following passage of other legislation.

These difficulties have led many advocates of dynamic scoring to argue that it should be employed only with regard to long-run macroeconomic effects, and that the effects of proposals on aggregate demand should be excluded from a "dynamic" scoring exercise.[10]

Long run

An evaluation of the macroeconomic effects from a public capital increase in the long run would be similarly challenging. It would require:

- Forming a judgment on the return to public capital in the long run. The literature on this issue is quite controversial. For example, at the top end of the range, Aschauer (1990) finds a marginal product of public capital of more than 200 percent.[11] Previous estimates had been in the range of 40 to 60 percent, lower than Aschauer (1990) but still remarkably high. Yet Aaron (1990) shows that the Aschauer result is quite sensitive to relatively small changes in the specification of the statistical exercise, and that the actual marginal product may not be statistically distinguishable from zero.[12] In order to estimate the impact of the public capital program on the economy in the long run, CBO would have to choose a single value from this substantial range of estimates (from roughly zero to more than to 200 percent).

- Evaluating displacement effects. To the extent that the national saving rate were unaffected by the increase in public capital spending, the national income accounting identities would require that the rise in public capital investment be reflected in lower private capital investment or more borrowing from abroad. In either case, the net effect on future national income from the public capital investment would be positive only if the return to the public capital exceeded the return to the displaced private capital (if private investment declined) or the interest rate on the foreign borrowing (if borrowing from abroad increased). The CBO would thus be forced to evaluate not only the return to the public investment, but also the degree to which the public investment would displace private investment and raise borrowing from abroad, along

[10] Martin Feldstein, "The Case for Dynamic Analysis," *Wall Street Journal*, December 14, 1994; and Andrew B. Lyon, "Should We Be Afraid of Dynamic Revenue Estimates?" National Tax Association 88th Annual Conference on Taxation, San Diego, California, October 10, 1995.

[11] David Alan Aschauer, "Why Is Infrastructure Important?" in Alicia Munnell, ed., *Is There a Shortfall in Public Capital Investment?* (Federal Reserve Bank of Boston, 1990), pages 21-50.

[12] Henry J. Aaron, "Discussion of 'Why Is Infrastructure Important?'" in Alicia Munnell, ed., *Is There a Shortfall in Public Capital Investment?* (Federal Reserve Bank of Boston, 1990), pages 51-63.

> with the relevant returns or interest rates on those activities. Even the sign, let alone the magnitude, of the overall macroeconomic effect is theoretically unclear. In other words, CBO would have to evaluate the economic cost of a proposal relative to the baseline in addition to its economic benefit; CBO could easily conclude in many cases that the harm outweighs the gain.

Dynamically scoring the public capital proposal in either the short run or the long run would thus be a substantial challenge, and would likely prove quite controversial given the wide range of estimates and assumptions that could be employed in the exercise.

Two generic problems with macroeconomic dynamic scoring

Notwithstanding the challenges noted above, a dynamic estimate for the net cost of the public investment program could undoubtedly be undertaken. Indeed, that is precisely what the advocates of dynamic scoring suggest should happen despite the uncertainty surrounding any such estimates. The fundamental argument they make is that it is better to be imprecisely right rather than precisely wrong. In the context of the budget scoring process, however, that argument is unpersuasive for two reasons.

First, and most importantly, CBO and JCT have established substantial credibility as scoring agencies, and that credibility is essential to the functioning of the budget process. It would be endangered if the agencies were regularly forced to reach definitive conclusions regarding extremely controversial debates in the academic literature. In particular, situations in which small changes in assumed parameters (with "small" being measured relative to the range in the published literature) produce large changes in the net budget costs of specific proposals pose a particular danger to the integrity of the scoring agencies.

For example, changing the assumed marginal product of public capital from 15 percent to 30 percent would be well within the range of published estimates.[13] Given the long-term assumptions employed above, however, it would shift the net cost of the investment program from 41 cents to *negative* 17 cents in present value! The result seems farcical, but that is precisely the point: The range of published estimates in the literature is substantial, and changes in the assumptions that are well within that published range can produce monumental shifts in the estimated net cost of the program. In the absence of solid empirical evidence upon which to choose one value rather than the other, the estimator would be forced to choose a specific value without much clear guidance. Since the exercise of that discretion could shift even the *sign* of the result, the integrity of the scoring process would be endangered. According to Alan Auerbach, an economics professor at the University of California at Berkeley and the former Deputy Chief of Staff at the JCT:

> "No government revenue estimator in my acquaintance would consciously provide a biased estimate. But in many instances, the uncertainty is so great that one honestly could report a number either twice or half the size of the estimate actually reported. Facing the threat of job loss and public criticism by members

[13] The published literature would also be consistent with a return of less than 15 percent, underscoring the point in the text.

> of Congress and editorial writers each time an unfavorable estimate is reported, do we really expect estimators to flip a coin when they're unsure which number is more accurate?…It may be that, even if we have *some* information about the macroeconomic effects of policy proposals, reported estimates will actually be poorer if we insist that this information be incorporated (without standard errors) in estimates used for budget scoring."[14]

Jane Gravelle of the Congressional Research Service adds that, in many macroeconomic settings, "There is no objective standard that can be applied to choosing an elasticity from the literature, and such a choice will necessarily remain in part a subjective one. There is, perhaps, a legitimate reason to be concerned about who will make that choice, and how the choice will be made."[15] In the face of the potential damage to their credibility that could arise from being forced to take specific positions on controversial macroeconomic effects, it is not surprising that both the CBO and the JCT have eschewed dynamic scoring. Neither agency apparently wants to be placed in the situation of having its integrity immediately attacked by one side or another of the ongoing debates over macroeconomic parameter values or models.[16]

A second problem with dynamic scoring is the resources that would have to be devoted to the exercise. As Michael Boskin has written in the context of dynamically scoring revenue proposals, the JCT "provides estimates for hundreds of tax proposals each year. Given current resources and economic knowledge, it would be impractical to develop a dynamic estimate for each of these proposals. A substantial threshold would be needed for individual proposals below which the static estimating process should continue to be used."[17] Yet such a system – dynamically scoring major proposals but not minor ones – would introduce its own problems. In particular, to the extent that dynamic scoring reduce the cost of tax cuts or spending increases (which, as noted above, may not necessarily be the case), applying the system only to larger proposals would create a potentially significant bias toward adopting more costly policy proposals rather than less costly ones.[18]

The baseline macroeconomic forecast

Some advocates of dynamic scoring may respond to the arguments above by noting that the macroeconomic implications of policy changes must already be estimated, at least in some form, by the Congressional Budget Office. Assume, for example, that the proposed increase in infrastructure spending had been approved. The following year, when the CBO updated its

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[14] Alan J Auerbach, "Dynamic Revenue Estimation," *Journal of Economic Perspectives* (Winter 1996), page 156.

[15] Jane G. Gravelle, "Dynamic Revenue Estimating," Congressional Research Service Report for Congress, December 14, 1994, page 24.

[16] The loss of such integrity could be quite costly. As Chairman Greenspan has emphasized, the integrity of the scoring process may be crucially important to the financial markets. Alan Greenspan, Testimony before the Joint Hearing of the Senate and House Committees on the Budget, January 10, 1995.

[17] Michael J. Boskin, "Statement on Review of Congressional Budget Cost Estimating," Testimony before the Joint House and Senate Budget Committees, January 10, 1995, pages 9-10.

[18] Also, if the dynamic effect were not phased in over some range of "static" costs, it would be possible for the dynamic score to reduce the net cost of a "larger" proposal to below the cost of a "smaller" proposal that was not dynamically scored.

baseline macroeconomic projections, the extra infrastructure spending would have to be incorporated in some way into those projections. If the CBO can incorporate such information in its subsequent forecasts, why couldn't it just include the information during the scoring exercise itself?

Three points are worth noting in response to this argument. First, the logic does not apply to "small" programs, most of which would be simply ignored in any subsequent macroeconomic forecasting process. The argument thus applies only to the potential feasibility of dynamically scoring "large" changes, which may be reflected in subsequent macroeconomic forecasts, and it therefore raises the problem noted above of skewing incentives toward more costly policy changes rather than ones with smaller costs.

Second, and more importantly, even large policy changes are not necessarily assigned specific point estimates in the subsequent baseline forecasts. Rather, the forecasters may recognize the impact of legislative changes only in the context of several factors influencing changes to the forecasts; they may not necessarily separately identify the effect of a single legislative package on the projections. Yet a dynamic score would require such a single point estimate of the macroeconomic effects.[19] Indeed, the logic of those making this argument would be more forceful if CBO and others published specific estimates of the macroeconomic impact of policy changes after they had taken effect (see below for further discussion of the nature of *ex post* analyses of the macroeconomic effects from legislative changes). It is important to recognize that CBO and others do not publish such estimates, presumably because of the difficulty of the exercise and because they hope that any errors in estimating such effects would be offset by other errors in the opposite direction in other macroeconomic variables. Such offsetting errors, however, are not relevant in the context of a scoring exercise.

Finally, the resource costs of incorporating macroeconomic effects into the estimates of budget proposals would be higher than the costs of reflecting those effects in the subsequent macroeconomic baseline. The difference arises because most budget proposals do not become law, and because the time constraints for updating the macroeconomic baseline are typically somewhat looser than those for producing budget estimates. Furthermore, as noted above, the difficulties of incorporating macroeconomic effects in scoring exercises may well be more severe with respect to proposed revenue changes than with respect to proposed expenditure changes, since the revenue changes require coordination between JCT and CBO.

Dynamic estimates outside the scoring process

The problems associated with including macroeconomic effects in official scores do not generally apply to evaluations of such effects outside the official scoring process. For example, it is entirely reasonable for outside academics and economists to estimate the macroeconomic effects of policy changes before they are implemented, and for CBO and others to analyze the macroeconomic effects after they have been implemented.

[19] In this context, it is noteworthy that CBO has discontinued its practice of estimating a "fiscal dividend" from policies that reduce projected budget deficits.

CBO's analysis of the macroeconomic effects of the Economic Growth and Tax Relief Reconciliation Act of 2001 is illuminating in this regard. First, the existence of the analysis is itself of note; CBO has undertaken similar analyses of other major pieces of legislation in the past. This type of exercise is beneficial and should be continued, since it sheds light on the potential macroeconomic effects of significant pieces of legislation. But the results from the analysis also underscore why it would be inappropriate for scoring purposes. As the CBO's analysis concludes, "The cumulative effects of the new tax law on the economy are uncertain but will probably be small. Labor supply may rise modestly as a result of the reductions in marginal tax rates (the rates that apply to the last dollar earned); however, national saving may fall. Whether the tax cut will raise or lower real (inflation-adjusted) gross domestic product (GDP) in the long run is unknown, but any effect is likely to be less than half of a percentage point in 2011."[20]

The important point is that the CBO did not provide a single point estimate of the macroeconomic effect from the tax legislation. *In a scoring exercise, however, CBO would have been forced to provide such a single point estimate*. In other words, analyses outside the official scoring process have the luxury of highlighting and reflecting the uncertainty surrounding the estimates. This luxury is not possible within the constraints of the scoring process, where a single figure is needed. To be sure, the scoring process could be changed to produce a distribution of estimates rather than a single estimate, but that would introduce a series of other problems (such as how the variance of the distribution would be weighed relative to the mean). Given the current emphasis on a single figure for scoring purposes, macroeconomic effects should be analyzed only outside the scoring process.

Dynamic scoring given other biases in the budget process

A final and crucially important consideration with regard to dynamic scoring is whether it would exacerbate the existing bias toward irresponsible fiscal policies. As Chairman Greenspan has emphasized, "Clearly, our political process has a bias toward deficit spending. Accordingly, we should be especially cautious about adopting technical scoring procedures that might be susceptible to overly optimistic assessments of the budgetary consequences of fiscal actions."[21]

This concern is particularly important given the biases in the official baseline projections toward unrealistically optimistic budget forecasts. For example, the official baseline assumes that discretionary spending will fall substantially on a real per capita basis, that the number of taxpayers subject to the Alternative Minimum Tax will rise from roughly 2 million today to more than 35 million by 2010, and that various expiring provisions of the tax code will actually sunset rather than being extended. These assumptions substantially inflate the projected budget figures, as described in more detail in a recent paper that I co-authored with Alan Auerbach and William

[20] Congressional Budget Office, "The Long-Term Macroeconomic Effects of the Economic Growth and Tax Relief Reconciliation Act of 2001," Box 2-3, *The Budget and Economic Outlook: An Update*, August 2001. Other analyses have similarly found a modest, and potentially negative, long-run impact from the tax legislation. See the discussion in the concluding section of the text.

[21] Alan Greenspan, Testimony before the Joint Hearing of the Senate and House Committees on the Budget, January 10, 1995.

Gale.[22] Any potential downward bias in the official scoring process from excluding macroeconomic effects could thus help to attenuate the dangers from the substantial upward bias in the official baseline figures, which make it appear that more funds are available for tax cuts or spending increases than is actually the case. In other words, to the extent that dynamic scoring reduces the estimated budget costs of either spending or revenue changes, it would exacerbate the tendency toward fiscal profligacy that is already built into the budget process.

Also note that the official scoring process does not reflect the extra debt servicing costs associated with specific policy proposals. Since a tax cut or spending increase today implies that a higher level of public debt tomorrow (relative to the baseline in which the tax cut or spending increases does not occur), its overall budgetary cost is larger than its direct (non-interest) "score." For example, last year's tax legislation was officially scored as costing $1.35 trillion between FY 2001 and FY 2011 (including outlays associated with refundable tax credits). But that figure excludes an estimated $383 billion in additional interest costs over the same period; the total budget cost was thus $1.73 trillion, not $1.35 trillion.[23]

A particularly beneficial change to the scoring process, which unlike the incorporation of macroeconomic effects is relatively straightforward and uncontroversial, would thus be to assign increases in debt service costs to individual proposals. Such a policy would reward fiscally responsible policies (which reduce public debt) and penalize fiscally irresponsible policies (which expand public debt). It would be particularly inappropriate to include macroeconomic effects that reduce the apparent cost of specific budget provisions without also altering the current system to include the higher debt servicing costs that also arise from the provisions. Indeed, in the context of a full dynamic macroeconomic "score," the increase in debt service costs may be even larger than the static macroeconomic analysis suggests, since tax cuts or spending increases can raise long-term interest rates.[24]

In summary, given the other biases in the budget process toward irresponsible fiscal policies and the inauspicious fiscal outlook for the nation, dynamic scoring poses a significant threat.[25]

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[22] Alan J. Auerbach, William G. Gale, and Peter R. Orszag, "The Budget Outlook and Options for Fiscal Policy," The Brookings Institution, April 2002.

[23] William G. Gale and Samara R. Potter, "An Economic Evaluation of the Economic Growth and Tax Relief Reconciliation Act of 2001," *Tax Notes,* forthcoming.

[24] For a more substantial analysis of the connection between fiscal policy and long-term rates, see William G. Gale and Samara R. Potter, "An Economic Evaluation of the Economic Growth and Tax Relief Reconciliation Act of 2001," *Tax Notes,* forthcoming.

[25] Andrew Lyon has noted that macroeconomic static scoring is not more fiscally conservative in the context of tax increases, since the macroeconomic impact of such changes may be negative and therefore the overall budget cost may exceed the "static" cost. Andrew B Lyon, "Should We Be Afraid of Dynamic Revenue Estimates?" National Tax Association 88th Annual Conference on Taxation, San Diego, California, October 10, 1995. If dynamic scoring were to be adopted, which again I think would be a mistake, policy-makers may want to consider a more responsible version of the exercise: Macroeconomic effects could be included only when they increased, but not when they decreased, the cost of a budget proposal. Depending on the nature of the macroeconomic effects built into the estimates, such a policy could have the unfortunate effect of making fiscal discipline even less appealing, by raising the cost of fiscally prudent measures. But it would at least avoid the potential abuse of dynamic scoring in advocating further fiscally imprudent policies.

Conclusions

In conclusion, "dynamic" scoring of individual budget items sounds good in theory but would be extremely problematic in practice. Given the current state of macroeconomic knowledge, incorporating macroeconomic effects into the official scoring process would pose a substantial threat to the integrity of the scoring process. It would also consume scarce resources within the scoring agencies, and exacerbate other biases in the budget process (including the exclusion of debt service costs from individual budget scores) toward fiscally irresponsible policies. A much more beneficial reform, which would be consistent with fiscal discipline, would include the debt service costs of individual proposals in their official scores.

Outside of the official scoring process, government agencies and others should continue to examine the macroeconomic effects of budget policies – but such effects should not be included in the official scores at this point. If dynamic scoring were nonetheless to be adopted, it should be applied to expenditure programs in addition to revenue changes.

A final point is also worth noting: The inclusion of dynamic macroeconomic effects may not produce the effect expected by many of its proponents. For example, the quotation above from the Congressional Budget Office suggests a modest, and perhaps even negative, long-term macroeconomic effect from last year's tax legislation. Other research, including a comprehensive research paper by my colleagues William Gale and Samara Potter, has reached a similar conclusion: The long-term impact of the tax bill on national income is small.[26] If anything, it is likely to be negative, because the adverse effect from the reduction in national saving dominates the positive effect from the potentially improved incentives to work, save, and take risks. A "dynamic score" of the tax legislation may thus well not have affected its cost significantly, and potentially could have increased it.

[26] William G. Gale and Samara R. Potter, "An Economic Evaluation of the Economic Growth and Tax Relief Reconciliation Act of 2001," *Tax Notes,* forthcoming.