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Key Issues in Tax Reform: Dynamic Scoring

Dynamic scoring includes, in projections of revenue effects, indirect changes in tax collections due to the overall growth effects on the economy. If the economy becomes larger due to the tax revision, tax revenues are larger because of the larger base.

Brief Summary of Current Practices

The estimated revenue effects (i.e., the "score") of tax revisions are prepared by the Joint Committee on Taxation (JCT) and provided to the Congressional Budget Office (CBO); CBO provides the cost estimates for legislation. These estimates assume no changes in the overall size of the economy, although they do allow for other behavioral effects (such as a change in capital gains realizations). When legislation is considered, by tradition and norm, these JCT and CBO estimates are the basis for determining compliance with the budget rules.

Beginning in 2003, House rules provided for advisory estimates of macroeconomic effects, and the JCT usually provided a range of estimates based on different models and assumptions. In most analysis of major legislative changes, estimates of macroeconomic effects of tax cuts or other changes varied considerably, although none were large enough to offset a revenue loss estimated by conventional methods.

In the 114th Congress, the House adopted rules that required a dynamic score for a measure that affected the deficit by 0.25% of GDP or at the request of the chairman of the Budget Committee or chair or vice-chair of the JCT (i.e., the chairman of the Ways and Means Committee). This provision was incorporated in the budget resolution, which extended to the Senate, but only on an advisory basis. Currently, the House has retained this rule, but it is not in effect for the Senate. In any case, no law requires the use of the JCT-CBO score; budget scores are decided by the Budget Committees, and by tradition, by the chairmen.

Uncertainties In Dynamic Scoring

The many macroeconomic analyses by the JCT over the years as well as macroeconomic analyses of the President's budget by the CBO have shown a broad range of projected effects and illustrated the uncertainties about these economic projections.

The projected effects of a tax measure on economic growth depend on the type of effect considered and the assumptions surrounding the magnitude of the effect. Three types of effects can be considered.

Demand-Side Effects

Short-run demand-side (often termed *Keynesian*) effects result from employing additional resources in an underemployed economy. They tend to increase output for tax cuts and decrease it for tax increases, although the magnitude of the response also depends on the type of tax change and whether it is more likely to affect spending. The effect depends on how close the economy is to full employment, how open the economy is (fiscal stimulus is less powerful in an open economy), the fundamental behavioral effects, and the extent to which the Federal Reserve may take actions to offset the effect. Because the economy is currently at full employment, a fiscal stimulus is unlikely to produce significant output effects.

Demand-side effects are transitory and should fade over time. During the first hearings in 1995 on dynamic scoring (Joint Hearing Before the House of Representatives Committee on the Budget and the Senate Committee on the Budget, 104th Congress, *Review of Congressional Budget Cost Estimating* January 10, 1995), many economists counseled against including these transitory effects in dynamic scoring.

Supply-Side Effects

Supply-side effects capture the increases or decreases in labor and capital that increase or decrease output. Average reductions in taxes reduce the supply of labor and capital, but marginal reductions (decreases on the last increment of supply) increase the supply as the consumption that people can achieve by working becomes cheaper relative to leisure. Similarly, the effect of an increase in the after-tax rate of return on saving is theoretically ambiguous.

Labor-supply effects can happen relatively quickly, but capital income effects tend to accumulate more slowly and then settle down into a steady state long-run effect.

Both the speed and the size of supply-side effects depend on behavioral responses. Empirical evidence suggests labor supply and savings responses are relatively small, and models that apply the elasticities from the literature to a growth model tend to obtain small results. Some models (life-cycle and infinite-horizon) allow individuals to choose consumption and leisure over a lifetime taking into account future wages and rates of return. In these models, embedded elasticities are sometimes larger than those suggested by the literature (see CRS Report R43381, *Dynamic Scoring for Tax Legislation: A Review of Models*, by Jane G. Gravelle). In the past, the JCT has used both a basic macroeconomic model that can capture all three effects and a dynamic life-cycle mode that captures only supply-side effects. The elasticities used in these two models are similar.

Supply-side effects also depend on whether the modeling takes place in a closed or open economy (with trade and capital flows). If the economy is open, the effect depends on how substitutable capital is internationally.

Dynamic models cannot account for demand-side effects, and those with perfect foresight cannot allow for crowding out discussed below (or at least cannot allow for indefinite and growing crowding out). If a tax revision cuts taxes and results in a deficit (and thus a growing debt), the simulation of a tax cut model must be accompanied by some other policy to stabilize the debt. The projected effects of the model on growth depend on the nature of the accompanying policy and when it happens. For example, if a tax cut is in each period offset by a lump-sum payment, it will negate the contractionary income effects from the tax cut and cause a larger growth effect; an offset for government spending that does not affect individual choice will not. Crowding-out effects can, however, still occur, if the stabilizing measure is in the future.

Crowding-Out Effects

If a tax change reduces revenues, the deficit must be financed by borrowing, which reduces funds available for investment. The magnitude of this crowding-out effect depends on how open the economy is. If some of the deficit can be financed by borrowing from abroad, less investment will be crowed out. The crowding-out effect grows continually, unlike demand-side effects that are transitory or supply-side effects that reach a steady state level. Any growing level of debt will eventually contract the economy.

Variations in Effects

A revenue-neutral tax reform would not have crowding-out effects, but it could have demand-side effects if it cut taxes of lower-income households likely to spend and increased taxes on corporations and higher-income individuals less likely to spend. It would have supply-side effects if it lowered marginal tax rates on wages or returns to capital.

When the JCT was providing advisory estimates, it performed sensitivity analysis that isolated various effects. For example, in its in-house model simulation of the 2014 tax reform proposal of the then-chairman of the Ways and Means Committee, most of the effect in the budget window was due to demand-side effects. In the first 10 years, the economy grew by 0.1% to 0.2% (depending on the labor supply elasticity used). When demand-side effects were added, the growth rate was 0.4% to 0.5%. (JCT, "Macroeconomic Analysis of the Tax Reform Act of 2014," JCX-22-14, February 26, 2014.)

In 2005, the JCT analyzed the effect of a tax cut of $500 billion over 10 years in the form of an individual rate cut, a corporate rate cut or an increase in the personal exemption. The estimates basically showed that the demand-side effects dominated the effects in the short run and in the budget window, whereas in the long run crowding out eventually led to a negative growth effect if crowding out is allowed. (JCT, Macroeconomic Analysis of Various Proposals to Provide $500 billion in Tax Relief, JCX-4-05, March 1, 2005.)

In the first 10 years, without demand-side effects, the reduction in revenue loss due to dynamic effects was 8% to 10% for the individual rate cut, 13% for the corporate rate cut, and 0.5% for the personal exemption. With the demand-side effects as well, the feedback effect was 22% to 23% for the individual rate cut, 21% for the corporate rate cut, and 15% for the increase in the personal exemption increase.

Current Tax Reform Proposals

The House-passed version of the tax proposal (H.R. 1) was estimated to cost $1.436 trillion from FY2018 to FY2027. The JCT estimated a cost, after macroeconomic effects, of $1.001 trillion, with $55 billion due to additional interest, indicating a feedback effect of 34%. JCT projected an average increase in GDP of 0.7% (not an annual growth rate but an average change in level). Two estimates were prepared by outside groups. The Urban-Brookings Tax Policy Center (TPC), using a model similar to that used by JCT in 2005, found a feedback effect of 10%. Its model projected average GDP growth of 0.4%. The University of Pennsylvania's Wharton School, using a life-cycle model, found feedback effects from 8% to 20%. Including the interest costs from debt, the total effect on the deficit exceeded the static revenue cost. Wharton projected growth of between 0.4% and 0.8%. For both models, eventually the economy would contract due to crowding out.

The Senate bill was estimated to cost $1.414 trillion before macroeconomic effects. To address budget rules, some individual provisions of the bill expire after 2025. The JCT estimated a cost after feedback of $1.007 trillion to the debt, with about $50 billion due to additional interest costs, a revenue feedback effect of 32%. The economy was projected to grow by 0.8%. The analysis suggested that demand-side effects would be largely offset by the Federal Reserve because the economy is at full employment. The TPC estimated average GDP growth of 0.5% and a feedback of 13%, whereas Wharton projected growth of 0.5% to 1% and a feedback of 13% to 26%.

The JCT estimated a $1.456 trillion loss before macroeconomic effects for the bill as enacted (P.L. 115-97), costing $1.071 trillion after feedback and adding $66 billion in interest payments. Average growth was 0.7%.

The JCT feedback effect is higher than the TPC and Wharton models and the JCT 2005 results. The larger effect in the JCT estimate appears to reflect, in part, the reliance on life-cycle and infinite-horizon models, which tend to produce larger effects, for 60% of the input into the estimate. They also reflect shifts of capital from abroad. The effects also reflect the temporary expensing for equipment for the first five years in the proposal, which shifts investment into the present in these models (also an issue in the Wharton model) and, in the Senate bill, the expiration of the individual tax cuts, causing an intertemporal shift in labor supply into the period when the tax cuts are in place. The result is a more rapid growth than would be the case with permanent provisions.

This In Focus is part of a series of short CRS Products on tax reform. For more information, visit the "Taxes, Budget, & the Economy" Issue Area page at www.crs.gov.

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