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Selected 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 cut, tax revenues are larger because of the larger base, offsetting part of the cost of the tax cut.

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 the dynamic score, 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. Dynamic scoring requirements have varied over time, sometimes in House rules and sometimes in budget resolutions. These changes are detailed in CRS Report R46233, *Dynamic Scoring in the Congressional Budget Process*, by Megan S. Lynch and Jane G. Gravelle.

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 committee chairs.

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 dynamic scores. For a more complete discussion, see CRS Report R43381, *Dynamic Scoring for Tax Legislation: A Review of Models*, by Jane G. Gravelle.

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 also depends on how close the economy is to full employment, how open (with trade and capital flows) 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 that offset the effect. Because the economy is currently at full employment, a fiscal stimulus is unlikely to produce significant output effects but could increase inflationary pressures.

Demand-side effects are transitory and should fade over time. During the first congressional 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 a tax increase 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 or an infinite period of time, 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).

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

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 crowded 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.

Types of Models

The JCT has used different types of models over time. Currently it uses three models. The first developed was a macroeconomic growth (MEG) model that applies labor supply elasticities directly and allows for all three types of effects. Individuals are myopic and believe current wages and rates of return will continue. JCT uses two types of intertemporal models. One is an overlapping generations (OLG) life cycle model, which does not allow demand-side effects or crowding out. Its supply-side effects include effects on labor supply both currently and across time and savings as individuals choose consumption and leisure over time in response to after-tax wages and rates of return. Individuals live over an adult lifetime, and a new generation appears each year as an older one dies. The agents have perfect foresight and information. The other model used by JCT is a dynamic stochastic general equilibrium (DSGE) model with agents that have an infinite horizon, which has supply-side effects and short-run demand effects due to liquidity constraints for some agents. Agents choose consumption and leisure over an infinite period, but the model allows for some uncertainty. Intertemporal models require a steady state budget balance so that eventually some policy must accompany the tax change to achieve this, although that policy can be delayed. The supply-side effects in intertemporal models depend on the assumed behavioral responses.

Most private forecasters use a MEG type model. CBO has used a variety of models for policy simulations, but their forecasting model for setting the new baseline after tax changes is similar to MEG. Intertemporal models tend to be used by academics, but DSGE models are sometimes used by central banks. The Federal Reserve uses a large-scale macroeconomic model that has some elements of a DSGE model but is significantly different in a variety of respects, including a shorter planning horizon and elements that reflect historical experience. It allows for all three types of economic effects—demand, supply, and crowding out—unlike the intertemporal models used by JCT.

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 (who are likely to spend more as a result) and increased taxes on corporations and higher-income individuals (who are less likely to reduce spending). 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 output was larger by 0.1% to 0.2% (depending on the labor supply elasticity used). When demand-side effects were added, the GDP increased by 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.

The JCT estimated in 2017 that P.L. 115-97, commonly known as the Tax Cuts and Jobs Act, which was estimated to cost $1.436 trillion from FY2018 to FY2027, would cost $1.071 trillion after feedback, a 26% offset and an average increase in GDP of 0.7% (not an annual growth rate but an average change in level). CBO summarizes the increases projected by eight different modelers, ranging between 0.3% and 0.7%, except for one that estimated 2.1% and did not include demand or crowding-out effects. The Penn-Wharton Budget Model, using a life-cycle model, found feedback effects from 8% to 20%.

The JCT feedback effect is generally on the higher side of the forecasting models but lower than the Tax Foundation estimate. 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.

Extending the Expiring Provisions of the TCJA

The JCT estimated different output effects for extending the individual expiring provisions from each model for FY2025-FY2034: 0.2% for MEG, 0.6% for OLG, and 0.7% for DSGE. CBO estimates a 0.1% effect. The Budget Lab at Yale University estimates a 0.2% increase and a less than 1% feedback effect. The Tax Policy Center estimates a 0.4% increase and a 6% feedback effect that also included bonus depreciation. These all imply that an extension would likely offer a lower feedback effect than the original TCJA.

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