

Calibrating Macroeconomic-and-Microsimulation Models to CBO's Baseline Projections

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This paper discusses the methods we use to calibrate a macroeconomic model of the US economy and a microsimulation model of individual income tax returns to the Congressional Budget Office's January 2006 baseline projections. Once calibrated, the two models can be used to simulate the economic-and-budgetary effects of changes in fiscal policies.

The Congressional Budget Office (CBO) produces biannual "baseline" forecasts of the US economy (generally in January and August of each year). Those forecasts embody current-law assumptions. That is, they project gross domestic product (GDP), prices, personal incomes, corporate profits, interest rates, etc. over 10 years assuming no changes in fiscal policy other than those specified by laws that have already been enacted. CBO in turn uses its economic baseline to help project current-law federal outlays and receipts. CBO's 10-year economic-and-budgetary projections serve as a baseline for scoring proposed changes in fiscal policy.

For example, the Joint Committee on Taxation (JCT) uses CBO's budgetary projections when producing traditional (or "static") estimates of the revenue effects of tax proposals. Traditional revenue estimates exclude the macroeconomic effects of changes in tax policy. Similarly, CBO uses its own budgetary projections when generating traditional estimates of the budgetary effects of spending proposals.

Simulation models seeking to take account of the dynamic effects of changes in federal fiscal policies should ideally be calibrated to CBO's economic-and-budgetary projections—particularly if they are to provide something more than a broad-brush analysis. We discuss two separate models that are calibrated to CBO's baseline economic-and-budgetary projections and that are used to evaluate proposed changes in tax policy. The first is the Global Insight (GI) US Macroeconomic Model. The second is a microsimulation model of individual income tax returns.

A CBO-like baseline forecast is constructed using the Global Insight model and the few details that CBO provides about its economic forecast. Using the GI model, we infer the implications of CBO's current-law assumptions for key macroeconomic aggregates, including consumption, investment, personal saving, employment, and the components of national income and product accounts (NIPA) personal income. The microsimulation model uses the CBO-like baseline forecast and a cross-walk between NIPA-and-budgetary federal revenue concepts to project the characteristics of individual income tax records. The result is an integrated calibration of macroeconomic-and-microsimulation models that can be used for policy simulations.