



# Congressional Budget Office

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## How CBO Will Implement Dynamic Scoring

Presentation at the Heritage Foundation

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For additional information, see Congressional Budget Office, “Dynamic Analysis,” [www.cbo.gov/topics/dynamic-analysis](http://www.cbo.gov/topics/dynamic-analysis).

# Scoring at CBO

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Last year, CBO completed

- More than 600 formal cost estimates, all of which were posted on [www.cbo.gov](http://www.cbo.gov)
- Between 5,000 and 6,000 informal cost estimates

# Requirements Under 2016 Budget Resolution

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To the greatest extent practicable, CBO and JCT shall incorporate the **budgetary effects of changes in macroeconomic variables** resulting from legislation that

- Has a gross budgetary effect of 0.25% of GDP in any year over the next ten years (an amount equal to about \$45 billion in 2015) or
- Is designated by one of the Chairmen of the Budget Committees

# Other Requirements

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Estimates shall include a **qualitative assessment for the subsequent 20-year period** of the budgetary effects (including macroeconomic effects)

Estimates are required for major legislation affecting direct spending or revenues (but not for appropriation acts)

# Behavioral Responses in Conventional Cost Estimates

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Estimates incorporate some effects of changes in policy on people's behavior that would generate budgetary effects

By long-standing convention, estimates generally have **not reflected changes in behavior that would affect total output in the economy** (for example, changes affecting the labor supply or private investment)

# Previous Dynamic Analysis by CBO

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Included in selected reports

- Analysis of the President's budget
- Annual long-term budget outlook
- Analyses of illustrative fiscal policy scenarios

Generally not included for specific legislation

- Exception: Border Security, Economic Opportunity, and Immigration Modernization Act

# Short-Term Effects

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Depending on the amount of slack in the labor market, estimates reflect effects on the supply of labor

Estimates reflect direct contributions to aggregate demand from changes in purchases by federal agencies and those who receive federal payments and pay taxes

The change in output for each dollar of direct contribution to demand (the “demand multiplier”) varies with the response of monetary policy

# Magnitude of Indirect Effects

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When monetary policy response is likely to be limited

- The demand multiplier over four quarters ranges from 0.5 to 2.5, with a central estimate of 1.5

When monetary policy response is likely to be stronger

- The demand multiplier over four quarters ranges from 0.4 to 1.9, with a central estimate of 1
- The demand multiplier over eight quarters ranges from 0.2 to 0.8, with a central estimate of 0.5



# Long-Term Effects

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Two models of potential output

- Solow-type growth model
- Life-cycle growth model

Potential output depends on the

- Amount and quality of labor and capital (depends on work, saving, and investment)
- Productivity of the labor and capital inputs (depends in part on federal investment)
- Amount of national saving (depends in part on federal borrowing)

# The Role of Expectations About Fiscal Policy: Solow-Type Growth Model

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People base their decisions about working and saving primarily on current economic conditions, including government policies

Decisions reflect people's **anticipation of future policies in a general way** but not their responses to specific future developments

# The Role of Expectations About Fiscal Policy: Life-Cycle Growth Model

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People make choices about working and saving in response to both current economic conditions and their **explicit expectations of future economic conditions**

The model requires **specification of future fiscal policies** that put federal debt on a sustainable path over the long run

Forward-looking households would not hold government bonds if they expected that debt as share of GDP would rise without limit

# Response of the Labor Supply to Changes in Fiscal Policy in the Solow-Type Growth Model

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CBO's estimates correspond to a total wage elasticity for all earners of 0.19

## ■ Substitution Effect

- Work more valuable relative to other uses of a person's time
- Elasticity of 0.24

## ■ Income Effect

- Maintain the same standard of living while working fewer hours
- Elasticity of -0.05

The overall effect of a policy change on the labor supply can be expressed as an elasticity, which is this percentage change in the labor supply resulting from a 1 percent change in after-tax income

## Other Key Aspects of Solow-Type Growth Model

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When the deficit goes up by one dollar, private saving is estimated to rise by 43 cents (national saving falls by 57 cents), and net capital inflows rise by 24 cents, ultimately leaving a decline of 33 cents in investment

Additional federal investment is estimated to yield half of the typical return on investment completed by the private sector

## Other Key Aspects of Life-Cycle Growth Model

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Labor supply and private saving are influenced by the current values and future anticipated values of the after-tax rate of return on saving, after-tax wage, and disposable income, among other factors

The elasticity with respect to a one-time temporary change in wages (the so-called Frisch elasticity) is 0.40, according to CBO's central estimates

Because of uncertainty, households hold additional savings as a buffer against potential future drops in income

# Presentation of Dynamic Analysis in Cost Estimates

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Presentation will probably evolve over time as CBO learns what is most useful

Estimates will show all of the information that traditionally would be included if macroeconomic effects were not incorporated; will identify the macroeconomic effects separately

Estimates will provide information on the uncertainty of the macroeconomic effects