

The Tax Policy Center's Methods for Dynamic Analysis

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Taxation in the Trump Era: Reforms, Revenues, and Repercussions

Estimating the Macrodynamical Effects of Tax Reform



TAX POLICY CENTER
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Why Dynamic Analysis?



- To improve revenue estimates
 - Best guess of macro effects is in general not zero
 - Effects on estimates tend to be modest
- Because economic effects are important policy goals
 - Economic effects provide additional information about welfare effects
 - Effects on the economy tend to be modest

- Demand
 - After-tax incomes affect demand
 - Investment incentives affect demand
- Incentives
 - Marginal tax rates on labor income affect labor supply
 - Marginal tax rates on capital income affect saving
- Deficits
 - Increased deficits crowd out investment

- TPC Keynesian Model
 - Aggregate variables, demand based
 - Output moves relative to potential
- TPC Neoclassical Model
 - Aggregate variables, supply based
 - Estimates potential output
- Penn Wharton Budget Model
 - Optimizing forward-looking households
 - Estimates potential output

Keynesian Model: Direct effects on demand



- With more after-tax income, consumers spend more
 - Lower-income households spend a larger share of their additional income than higher-income households
 - Baseline assumption:
 - Lowest quintile spends 90 cents of each additional dollar
 - Highest quintile spends just 55 cents of each additional dollar
- Investment incentives lead firms to invest more
- Higher wealth leads consumers to spend more

- Direct effect generates indirect effects that can add to or offset the direct effect
 - On the plus side, increased demand can lead to increased hiring, investment spending, or consumption spending
 - On the minus side, increased demand could lead to higher interest rates, reducing investment and consumer spending

- In normal economic times the Fed offsets expansionary tax policy by raising rates to prevent an increase in inflation
- Indirect effects offset half of direct effects
 - Multiplier of 0.5 on changes in direct demand
- In deep recession the Fed will not change rates, leading to positive indirect effects, adding 50 percent to direct effects
 - Multiplier of 1.5 on changes in direct demand

- Core potential output determined by
 - Labor hours
 - Capital stock
 - Total factor productivity
- Cobb-Douglas production function
 - Capital share = 0.3
- No explicit forward looking

- After-tax wage
 - Elasticity of labor hours to the after-tax wage = 0.24
- After-tax income
 - Elasticity of labor hours to after-tax income = -0.05
- Effects calculated on an aggregate level

- After-tax rate of return
 - Depends on pretax rate of return, marginal tax rate on capital income, and expensing ratio
 - Interest elasticity of saving = 0.2
- Deficit
 - Private saving offset = 0.43
 - Capital inflow offset = 0.24
 - Additional dollar of deficit crowds out 33 cents of output

Keynesian and Neoclassical combined estimates



- Results of the two models combined using a weighted average
- Weights on the neoclassical model of 0, 0.25, 0.5, 0.75, and 1 over the first five years after implementation of a policy

- Overlapping generations model
- Simulates economic and budgetary outcomes from household decisions about work and saving
- Uncertain working ability and longevity
- Households forward-looking
 - Make decisions based on current and future policies and economic outcomes
- Can model unbalanced tax reforms through

2040

- Frisch elasticity of labor supply = 0.5
- Elasticity of intertemporal substitution = 0.5
- Depreciation rate = 0.085
- Population growth rate = 1.2 percent
- Weight on open economy results = 0.4

- Available online at <http://www.budgetmodel.wharton.upenn.edu>
- User can alter assumptions for open economy weight, labor supply elasticity, saving elasticity, and federal outlays

THANK YOU

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