Discussion of:
The *Fiscal Multiplier*

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- Rarely addressed in a **general equilibrium** macroeconomic model
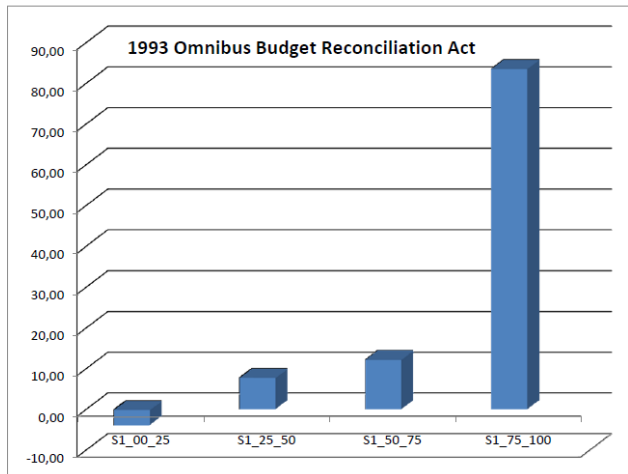
- Interesting and important paper

Not all tax cuts (hikes) are created equal
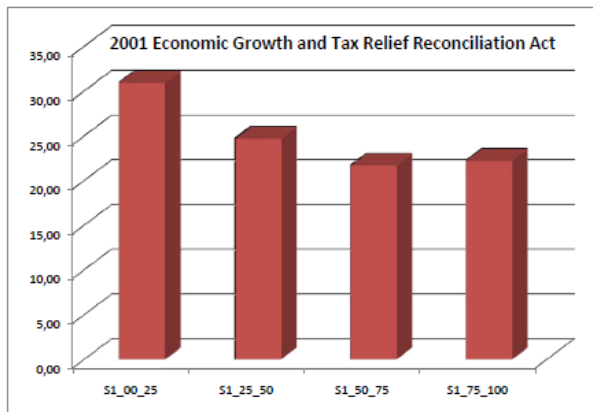
Reagan 1981 Tax Cut: skewed in favor of rich

1981 Economic Recovery Tax Act
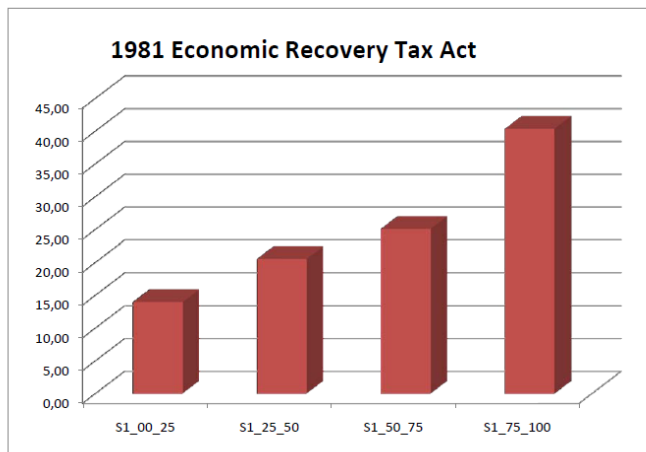
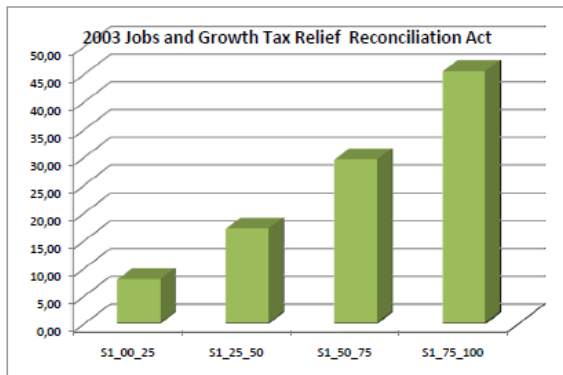(source Monacelli & Perotti 2013, 2016)

Clinton 1993 Tax Increase: skewed against rich

Bush 2001 Tax Cut: skewed in favor of poor

Bush 2003 Tax Cut: skewed in favor of rich

The economics of fiscal multipliers

The economics of fiscal multipliers

1. Nominal **rigidities** (in prices and/or wages)
2. **Incomplete** markets $\rightarrow$ Role of **redistribution**

Model

- Frame logic within "standard" **NK Borrower-Saver** model with **nominal rigidities**

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- Kiyotaki and Moore (1997), Iacoviello (2006), Bilbiie (2009), Monacelli and Perotti (2011), Eggertson and Krugman (2012), (...)

Model: households

$$\max \mathbb{E}_0 \left\{ \sum_{t=0}^{\infty} \beta_j^t \left[u(c_{j,t}) - v(n_{j,t}) \right] \right\} \qquad j = b, s$$

$$\underbrace{\beta_s}_{\substack{\text{savers} \\ \text{(patient)}}} > \underbrace{\beta_b}_{\substack{\text{borrowers} \\ \text{(impatient)}}}$$

$$c_{j,t} + \underbrace{r_{t-1} d_{j,t-1}}_{\substack{\text{service} \\ \text{cost} \\ \text{of debt}}} = \underbrace{d_{j,t}}_{\substack{\text{new} \\ \text{debt}}} + \underbrace{w_t n_{j,t}}_{\substack{\text{real labor} \\ \text{income}}} - \underbrace{\tau_{j,t}}_{\substack{\text{lump-sum} \\ \text{taxes}}} + \underbrace{\sigma_j \mathcal{P}_t}_{\substack{\text{profits} \\ \text{share}}}$$

$$\underbrace{d_{b,t} \leq \overline{d}}_{\substack{\text{borrowing} \\ \text{constraint}}}$$

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- ▶ Two cases

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- ▶ NB **knife-edge case**: if perfect competition + CRS production $\rightarrow$ Profits $= 0 \rightarrow$ **Irrelevance** of tax financing rule

Increase in gov't spending: flex prices

Temporary Expansion in Government Spending: Flexible Prices

Output
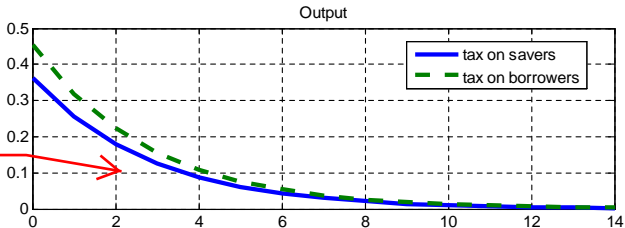
larger multiplier if tax borrowers

- tax on savers
- tax on borrowers
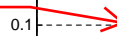
Aggregate Consumption
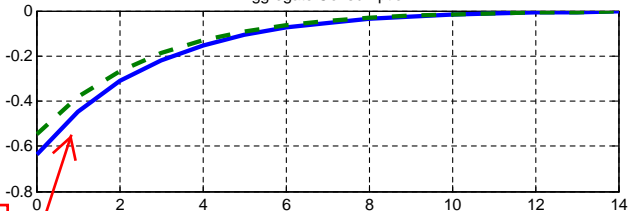
crowding OUT

Results under flexible prices

1. Crowding **out** of aggregate consumption
2. Higher multipliers when taxes levied on **borrowers**

$\rightarrow$ Why? Income effect of **savers** **higher profits** preserved

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- Borrowers consumption not constant though:

$$\overline{r}\beta_b \mathbb{E}_t \left\{ \frac{c_{b,t}}{c_{b,t+1}} \right\} = 1 - \underbrace{\psi_t}_{\substack{\text{shadow value} \\ \text{of borrowing}}} \, .$$

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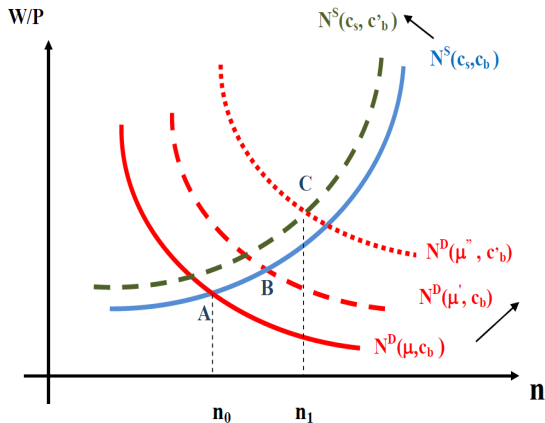
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- Sign and size of output multiplier depend on the behavior of **borrowers** **consumption** under any given tax financing rule.

▶ Resource constraint

$$y_t = \underbrace{\omega_s \overline{c}_{s,t}}_{\substack{\text{saver C} \\ \text{constant}}} + \underbrace{\omega_b c_{b,t}}_{\substack{\text{borrower} \\ \text{C}}} + \underbrace{g_t}_{\substack{\text{govt} \\ \text{spending}}}$$

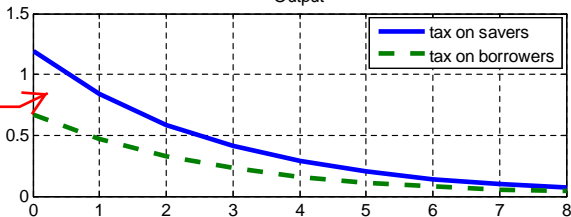# A rise in government spending under rigid prices

→Position of aggregate labor demand curve depends on **borrowers** consumption and markup

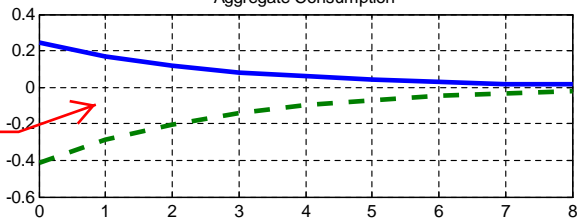# A rise in government spending under sticky prices.

Temporary Expansion in Government Spending: Sticky Prices

larger multiplier if tax savers

crowding IN if tax savers

Two main results with nominal rigidities

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1. **Crowding in** of aggregate private consumption
2. Larger output multiplier if taxes levied on **savers (opposite to flex price case)**

$\rightarrow$ Why? By taxing savers can preserve the **labor demand push** fueled by higher consumption of borrowers

How much pro-savers can the tax mix be?

- ▶ Size of output multiplier depends on two key dimensions

1. **Redistributive** content of tax increase
2. **Nominal rigidities**

Multiplier, share of borrowers' taxation, and price rigidities

Output Spending Multiplier

Legend:
- 2 qrts p.stickiness
- 3 qrts p.stickiness
- 4 qrts p.stickiness
- 5 qrts p.stickiness
- 6 qrts p.stickiness

x-axis: share of taxes levied on borrowers