Intermediate macroeconomics
Fiscal policy

Kamil Kovar

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Introduction

Central banks are the main factor intentionally influencing the economy over the short-run.

Other potential source of interventions: Fiscal policy.

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Questions:

- What are the possible fiscal interventions?
- Does fiscal policy affect output in theory?
- Does fiscal policy affect output in reality?

Portfolio of fiscal interventions

What form can fiscal policy take?

- Direct: Purchases.
  - Outright government purchases goods or services (highways, tanks, software, doctors,...).
- Indirect: Taxes, transfers and subsidies.
  - Lowering income/profit taxes increases disposable income for consumers and profits for firms.
  - Lowering consumption taxes makes purchases (especially if it is temporary).
  - Transfers increase disposable income or limit its decline (e.g. unemployment insurance).
  - Subsidies motivate spending and investment.

Maine difference: Control over increase in spending.

- With direct interventions government decides the amount of spending.
- Wit indirect interventions consumer and firm behavior determines increase in spending (higher income can be saved, etc).

Automatic stabilizers

Definition: Built–in fiscal mechanisms that automatically adjust government spending and taxation in response to economic fluctuations, without additional government action.

Examples:

- *Unemployment Insurance*: Transfer payments increase when unemployment rises, supporting aggregate demand.
- *Progressive Income Taxes*: Tax revenues rise as incomes rise (in booms) and fall in recessions.
- *Welfare Programs*: Benefits automatically expand during downturns.

Motivations:

- Stabilization: Reacts to negative economic shocks, offsetting their effects.
- Automatic nature: Reacts immediately (not subject to political process).
- Ex-ante effects: Existence of automatic stabilizers can stabilize confidence of consumers/firms.

Fiscal policy in theory: Keynesian view

Standard Keynesian view: More government, consumer of firm purchases leads to increase in overall demand.

- More C, I and/or G means more GDP.

Key aspect: Multiplier effect.

- More spending means more income, which means more spending, ...
- Keynesian cross.

Suggests potentially large effects of fiscal stimulus on economy.

What about supply side and reaction of consumers/firms?

Fiscal policy in theory: Ricardian equivalence view

Basic idea: Government financing choices (debt vs. current taxes) do not affect aggregate demand because rational households understand lower taxes now mean higher taxes in future.

Basic mechanism:

- Government cannot allow debt to explode.
- Lower revenues now will mean higher taxes in future.
- Consumers expect higher taxes in future, and save now to prepare for them, lowering current consumption.

Contrast with Keynesian view: Does not *assume* that other GDP components are unchanged when government policy changes.

Policy implication: Lower taxes financed by higher debt are neutral in its effect on private consumption and aggregate output.

[A] Derivation of Ricardian equivalence

Government:

$$B_1 = G_1 - T_1,$$
$$T_2 = (1+r)\,B_1 + G_2 \implies T_1 + \frac{T_2}{1+r} = G_1 + \frac{G_2}{1+r}.$$

Representative Household:

$$c_1 + s = Y_1 - T_1,$$
$$c_2 = Y_2 - T_2 + (1+r)\,s \implies c_1 + \frac{c_2}{1+r} = (Y_1 - T_1) + \frac{Y_2 - T_2}{1+r}.$$

[A] Derivation of Ricardian equivalence (continued)

Suppose the government cuts T_1 by $\Delta T_1 < 0$ and raises T_2 by ΔT_2 so that

$$\Delta T_1 + \frac{\Delta T_2}{1+r} = 0 \quad \Longrightarrow \quad \Delta T_2 = -(1+r)\,\Delta T_1.$$

Then the change in the household's PV disposable income is

$$\Delta\left[(Y_1 - T_1) + \tfrac{Y_2 - T_2}{1+r}\right] = -\Delta T_1 - \frac{\Delta T_2}{1+r} = -\Delta T_1 + \Delta T_1 = 0.$$

Hence

$$\Delta\left(c_1 + \frac{c_2}{1+r}\right) = 0 \quad \Longrightarrow \quad \Delta c_1 = 0,\ \Delta c_2 = 0.$$

Conclusion: Shifting taxes between periods—while keeping their present value fixed—leaves consumption in both periods unchanged.

Reasons to be skeptical of Ricardian equivalence

Ricardian equivalence is theoretically correct departing point for analysis of fiscal policy, but there are many reasons to be skeptical whether it applies.

Key assumptions:

- *Perfect capital markets:* Households can borrow/lend freely.
- *Rational expectations:* Consumers correctly anticipate future taxes.
- *Intergenerational altruism:* Parents care about children's welfare and internalize government's budget constraint across generations.

In practice, credit constraints, myopia, liquidity needs, or lack of intergenerational altruism break the equivalence and make debt policy effective.

Fiscal policy in theory: Crowding in vs crowding out

Ricardian equivalence implies fiscal spending *crowds out* private spending: Increase in public spending leads to *decrease* in private spending.

The Keynesian view suggests fiscal spending *crowds in* private spending: Increase in public spending leads to *increase* in private spending.

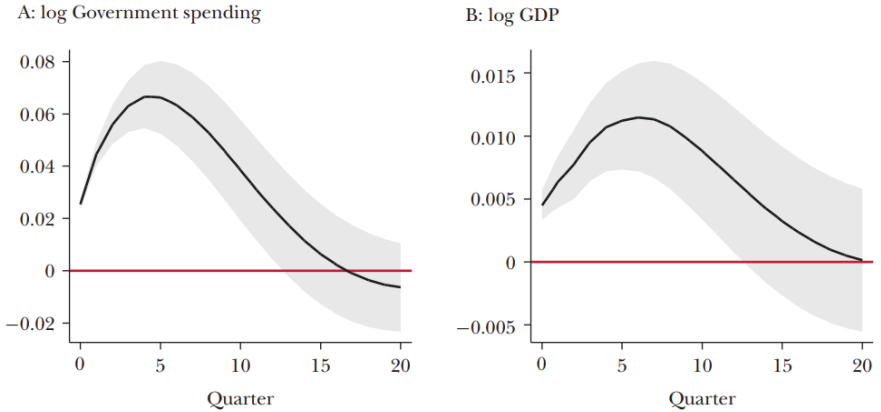
- Income effect, confidence effects, economies of scale and other reasons.

Apart from change in consumer behavior, crowding out also operate through prices and interest rates:

- Larger government purchases make raise prices of goods being purchased (e.g. construction materials), pushing some previous buyers out of the market.
- More spending/borrowing means higher interest rates, pushing some previous borrowers not to borrow/consumers to save more.

Fiscal policy in reality

Clear evidence that output increases when government spending increases, but effects last only as long as government spending is higher.



Fiscal policy in reality: Multipliers

Empirical analysis of fiscal spending focuses on estimates of multipliers: how much aggregate output changes in response to a change in a fiscal instrument.

$$m = \frac{\Delta Y}{\Delta G}$$

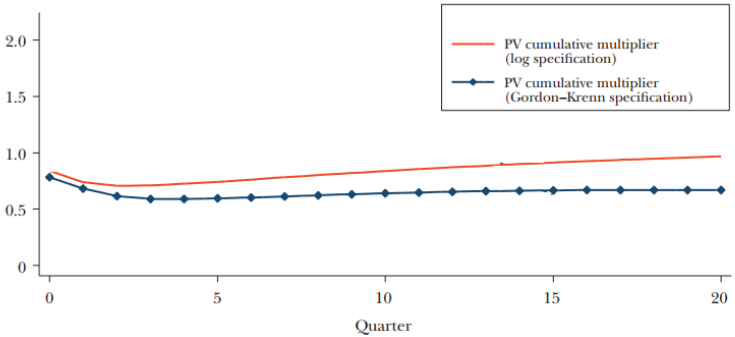
Keynesian theory/crowding in suggests $m > 1$, imperfect crowding out suggests suggests $m \in [0, 1]$, while Ricardian equivalence/perfect crowding out suggests $m =< 0$.

Fiscal policy in reality: Multiplier estimates

Typical multipliers for government spending are close-but-below one, while for changes in taxes they are in range of 2-3.

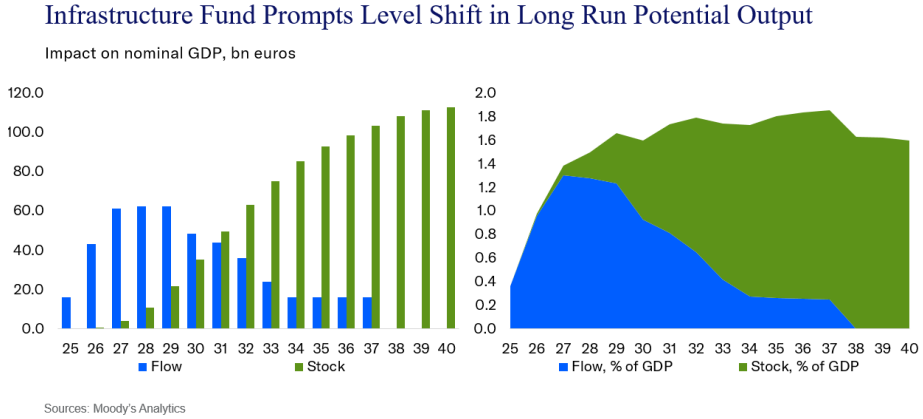
Figure 2

Alternative Definitions of Multipliers: Multipliers by Horizon



Fiscal policy in reality: German fiscal bazooka

In 2025 German government announced plans to significantly increase spending on infrastructure, likely leading to higher GDP.



Conclusions

Fiscal policy takes the form of either changes in direct spending by government, or works indirectly through effects on consumers and firms via transfers or changes in taxes.

Different theoretical considerations suggests that government spending might crowd in or crowd out private spending.

Empirical literature suggests multiplier bit below 1 for spending and 2-3 for taxes.