Advanced Macroeconomics

Fiscal Policy and Business Cycles

What you will learn in this chapter:

- Basics of fiscal stabilization policy
  - Why and how fiscal policy can stabilize business cycle fluctuations
  - Automatic stabilizers versus discretionary fiscal interventions
- Theory: Government spending in DSGE models
  - Key mechanisms in the model of Galí, López-Salido, and Vallès (2007)
  - The role of non-Ricardian (rule-of-thumb) households
  - Fiscal multipliers
- Empirical application: Fiscal stimulus in Germany during the 2007–2009 financial crisis
  - Identification and interpretation of government spending shocks
  - Linking DSGE-based insights to observed macroeconomic outcomes

12. Fiscal Policy and Business Cycles

Fiscal Stabilization Policy: Overview

- Historical motivation
  - Use of discretionary fiscal policy during major downturns (e.g. the Great Depression, post-war recessions, global financial crisis 2007–2009)
  - Keynesian demand management as a response to sharp declines in private consumption and investment
  - Renewed role of fiscal stimulus when monetary policy is constrained (e.g. effective lower bound on nominal interest rates)
- Rationale for fiscal stabilization
  - Counteracting insufficient aggregate demand during recessions
  - Smoothing output and employment over the business cycle
  - Mitigating hysteresis effects and persistent output losses

Fiscal Stabilization Policy: Instruments

- Standard fiscal policy instruments
  - Government consumption and public investment programs
  - Temporary tax cuts or transfers to households
  - Targeted subsidies and support for firms
- Automatic stabilizers vs. discretionary policy
  - Automatic stabilizers: progressive taxation, unemployment benefits
  - Discretionary measures: stimulus packages, infrastructure spending, tax rebates
  - Trade-offs between timeliness, targeting, and fiscal sustainability

12. Fiscal Policy and Business Cycles

Galí, López-Salido, and Vallès (2007): Understanding the Effects of Government Spending on Consumption

- Motivation
  - Standard DSGE models predict that higher government spending crowds out private consumption
  - Empirical evidence for the U.S. and other advanced economies often shows the opposite
- Core question of the paper
  - Under which economic conditions can government spending generate a positive private consumption response?
  - What role do household heterogeneity and nominal rigidities play?
- Key idea
  - Introduce rule-of-thumb (non-Ricardian) households alongside optimizing households
  - Combine household heterogeneity with a New Keynesian framework
  - Fiscal expansions affect private consumption through current income rather than intertemporal substitution alone

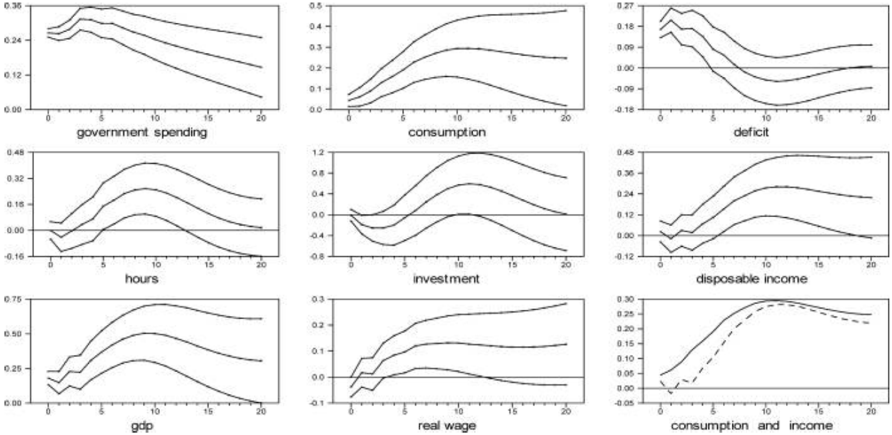


FIGURE 1. The dynamic effects of a government spending shock.

Note: Estimated impulse responses to a government spending shock in the large VAR. Sample Period 1954:I–2003:IV. The horizontal axis represents quarters after the shock. Confidence intervals correspond ± 1 standard deviations of empirical distributions, based on 1,000 Monte Carlo replications. The right bottom panel plots the point estimates of both consumption (solid line) and disposable income (dashed line).

The Fiscal Multiplier

- Definition
  - The fiscal multiplier measures the change in aggregate output
  - Caused by a one-unit increase in government spending
  - Typically evaluated on impact or cumulatively over time
- Why fiscal multipliers matter
  - Quantifies the effectiveness of fiscal stimulus measures
  - Central for policy evaluation during recessions
  - Determines whether government spending crowds out or crowds in private demand
- Fiscal multipliers in DSGE models
  - Depend on household behavior, price rigidities, and policy rules
  - Standard New Keynesian models often imply modest multipliers
  - Household heterogeneity can substantially increase multiplier size

TABLE 1. Estimated effects of government spending shocks.

	Estimated Fiscal Multipliers						Implied Fiscal Parameters		
	Output			Consumption					
	1stQ	4thQ	8thQ	1stQ	4thQ	8thQ	ρ_g	ϕ_g	ϕ_b
				1948:I–2003:IV					
Baseline spending									
Small VAR	0.51	0.31	0.28	0.04	0.09	0.19	0.85	0.10	0.10
Larger VAR	0.41	0.31	0.68	0.07	0.11	0.49	0.80	0.06	0.06
Excluding military									
Small VAR	0.15	-0.12	0.34	-0.11	0.24	0.32	0.95	0.005	0.60
Larger VAR	0.36	0.62	1.53	0.03	0.51	0.68	0.94	0.005	0.60
				1954:I–2003:IV					
Baseline spending									
Small VAR	0.74	0.75	1.22	0.14	0.46	0.73	0.95	0.13	0.20
Larger VAR	0.68	0.70	1.74	0.17	0.29	0.95	0.95	0.10	0.30
Excluding military									
Small VAR	0.63	1.95	2.60	0.25	1.41	1.12	0.95	0.05	0.50
Larger VAR	0.74	2.37	3.50	0.37	1.39	1.76	0.95	0.01	0.50
				1960:I–2003:IV					
Baseline spending									
Small VAR	0.91	1.05	1.32	0.19	0.59	0.84	0.95	0.13	0.20
Larger VAR	0.81	0.44	0.76	0.20	0.25	0.45	0.95	0.08	0.20
Excluding military									
Small VAR	0.72	1.14	1.19	0.17	0.78	0.68	0.94	0.03	0.50
Larger VAR	1.13	1.89	2.08	0.40	1.14	1.07	0.98	0.01	0.55

General Model Setup

- Baseline framework: Extending Smets-Wouters
  - Standard New Keynesian DSGE model with monopolistic competition and nominal price rigidities
  - Monetary policy conducted via an interest rate rule
  - Government spending financed by lump-sum taxes
- Key departure from the standard model
  - Households are heterogeneous
    - Optimizing (Ricardian) households with access to financial markets
    - Rule-of-thumb (non-Ricardian) households consuming their current disposable income
  - A constant fraction of households cannot smooth consumption intertemporally
- Transmission of fiscal policy
  - Government spending raises aggregate demand and labor income
  - Rule-of-thumb households increase consumption one-for-one with income
  - Aggregate consumption may rise despite higher taxes and real interest rates

Household Heterogeneity

- Two types of households
  - Fraction $(1-\lambda)$: Ricardian households
    - Intertemporally optimizing
    - Full access to financial markets
  - Fraction λ: Non-Ricardian (rule-of-thumb) households
    - No access to asset markets
    - Consume current disposable income

- Why household heterogeneity matters
  - Breaks Ricardian equivalence at the aggregate level
  - Fiscal policy affects current income and consumption directly
  - Central mechanism distinguishing the model from standard NK setups

Non-Ricardian Households and Fiscal Transmission

- Consumption behavior
  - Consumption equals after-tax labor income in each period
  - No intertemporal smoothing of consumption
  - High marginal propensity to consume out of current income
- Implications for fiscal policy
  - Government spending increases labor demand and wages
  - Immediate increase in consumption of non-Ricardian households
  - Aggregate consumption may rise despite higher taxes
- Link to business cycle stabilization
  - Amplifies the short-run effects of fiscal stimulus
  - Provides a rationale for countercyclical government spending

Government Spending and Budget Constraint

- Government consumption
  - Exogenous government spending process
  - Government purchases do not enter household utility
  - Focus on pure demand-side effects of fiscal policy
- Financing of government spending
  - Financed by lump-sum taxes
  - Temporary budget deficits are possible
  - Taxes adjust to stabilize government debt (fiscal policy reaction function)
- Interpretation
  - Abstracts from distortionary taxation and debt dynamics
  - Highlights the role of spending shocks for business cycles

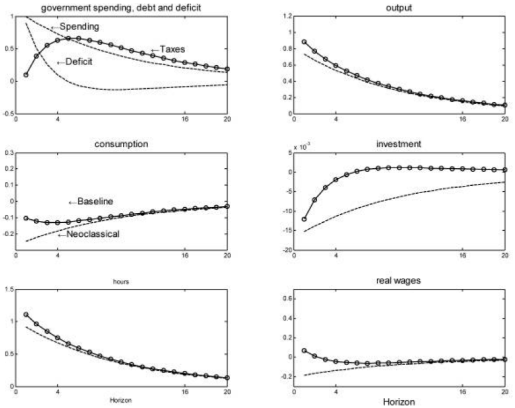
Government Spending Shocks and Fiscal Transmission

- Government spending shocks
  - Modeled as stochastic, temporary deviations from steady state
  - Interpreted as discretionary fiscal stimulus measures
- Interaction with households
  - Taxes mainly affect Ricardian households through wealth effects
  - Non-Ricardian households respond to changes in labor income
  - Heterogeneous consumption responses across households
- Relevance for fiscal policy and business cycles
  - Clean identification of fiscal multipliers
  - Explains short-run expansionary effects of fiscal stimulus
  - Provides guidance for countercyclical fiscal policy design

Dynamic Effects of a Government Spending Shock

(Galí, López-Salido, and Vallès, 2007, Figure 4)

A. Competitive Labor Market



Dynamic Effects of a Government Spending Shock

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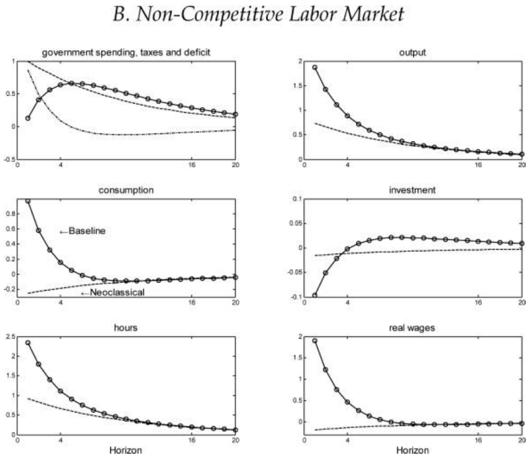
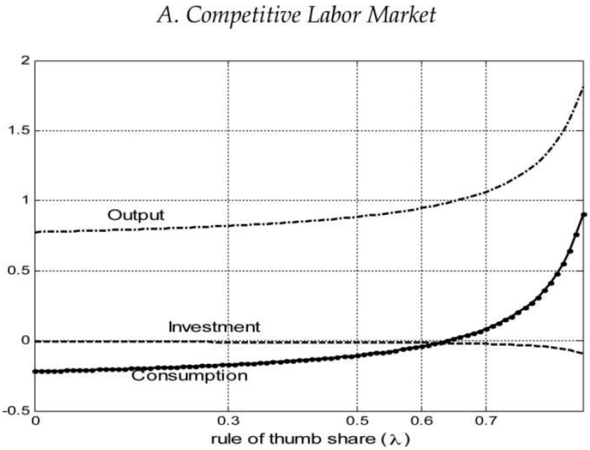


Impact Multipliers

(Galí, López-Salido, and Vallès, 2007, Figure 3)



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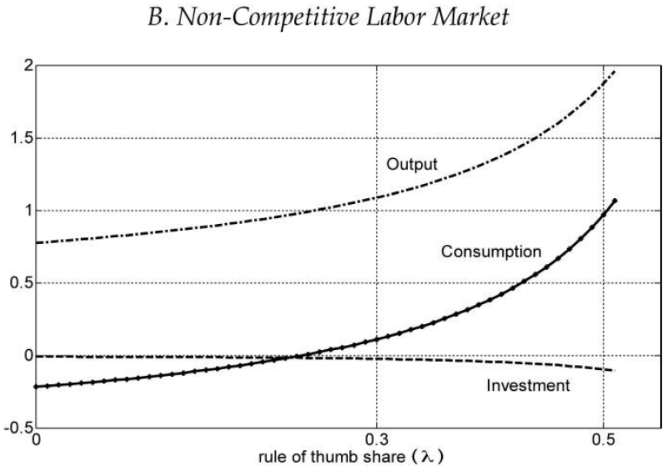

Summary

- Main theoretical insight
  - Government spending shocks can raise private consumption
  - Driven by household heterogeneity and nominal rigidities
- Impulse response evidence (Figure 4)
  - Positive responses of output and hours worked
  - Consumption increases when non-Ricardian households are present
- Impact multipliers (Figure 3)
  - Output multipliers may exceed unity under plausible calibrations
  - Multipliers increase with share of rule-of-thumb households
- Implications for business cycle stabilization
  - Fiscal stimulus can be an effective countercyclical tool
  - Especially relevant during downturns with demand deficiencies
  - Model provides a benchmark for policy-oriented DSGE analysis

12. Fiscal Policy and and Business Cycles

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Summary I: Theory and Mechanisms

- Fiscal policy and business cycles
  - Fiscal policy as a stabilization tool in recessions
  - Particularly relevant when private demand is weak
- Conceptual foundations
  - Discretionary fiscal stimulus versus automatic stabilizers
  - Importance of transmission channels for policy effectiveness
- DSGE perspective
  - Standard New Keynesian models predict consumption crowding-out
  - Household heterogeneity alters fiscal transmission (Galí, López-Salido, and Vallès 2007))

Lecture Summary II: Evidence and Policy Implications

- Empirical insights
  - DSGE-based evaluation of German stimulus packages (2007–2009)
  - Quantitative estimates of fiscal multipliers
- Policy implications
  - Fiscal policy can theoretically stabilize business cycles
  - Effectiveness depends on economic structure and policy design

Literature

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