Regime Switching in Fiscal Debt Targets and Policy Functions in the United States

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Fiscal Policy

Government budget decisions that target...

1. macroeconomic objectives or...
2. levels of *long-run government debt*.

Macroeconomic Objectives

- *Unemployment rate:* Percentage of all those willing and able to work who do not have employment
- *Real GDP:* Measure of the total quantity of economic activity in a country a given year
- *Output gap:* Percentage difference between real GDP and *potential GDP* **(Focus)**

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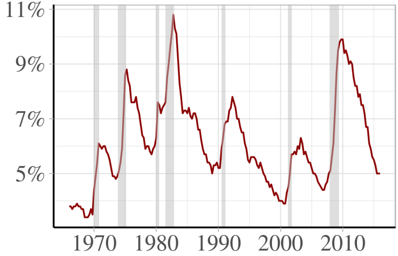
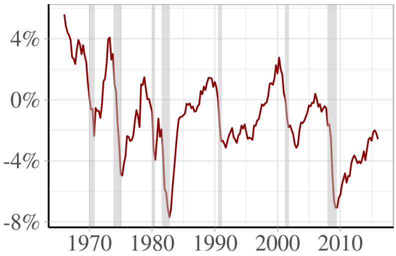


Output Gap



Federal government debt

Total value of all outstanding funds borrowed by the federal government that are outstanding.

- *Stock variable*

Federal government deficit

Amount that the federal government borrows in a given year.

- *Flow variable*
- Deficits are added to the debt every year.

Both expressed as **as a percentage of GDP**

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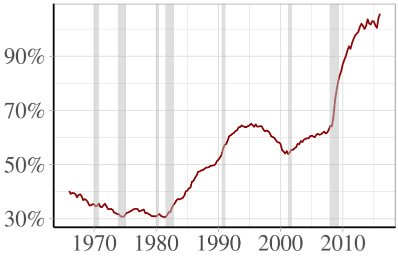

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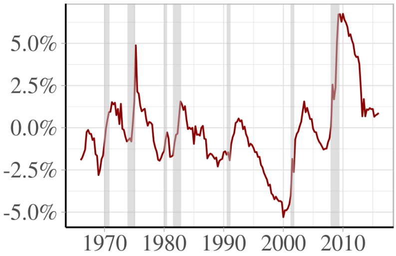

Government Expenditures

- Federal government purchases of goods and services
- Macro target: Should *decrease* as output gap *increases*
- Debt target: Should *decrease* as debt increases

Transfers

- Payments made to individuals or on their behalf: unemployment benefits, college education subsidies, etc
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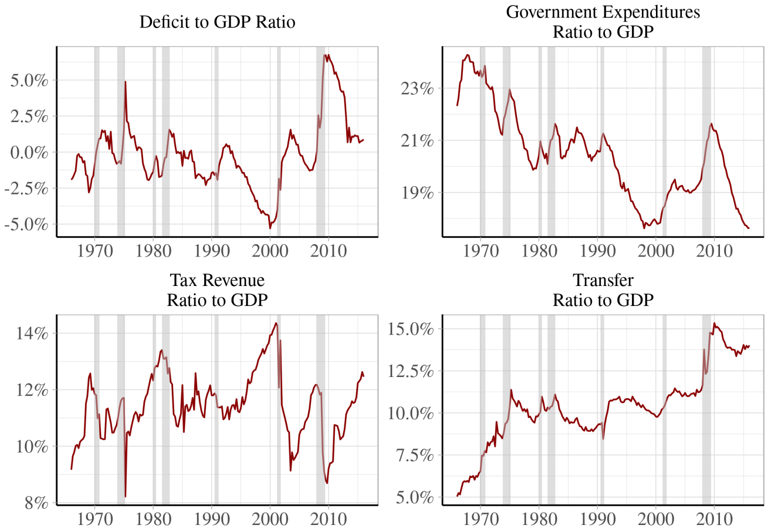

Deficit to GDP Ratio
5.0%
2.5%
0.0%
-2.5%
-5.0%
1970
1980
1990
2000
2010
Government Expenditures
Ratio to GDP
23%
21%
19%
Tax Revenue
Ratio to GDP
14%
12%
10%
8%
Transfer
Ratio to GDP
15.0%
12.5%
10.0%
7.5%
5.0%

Investigate Evidence for Fiscal Policy Switching

- Which fiscal variables are important for economic stabilization?
- Which fiscal variables are important for servicing debt?
- Is there switching?

Describe debt service

1. How do fiscal policy variables respond to *debt / GDP*?
2. What is the implied target for *debt / GDP*?
3. Is there switching in these fiscal policy responses?
4. Is there switching in the long-run debt target?

Describe stabilizing behavior (macro targets)

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Purpose

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Long-run Debt Target Regimes

Regime L: *Low* long-run target for debt/GDP

Regime H: *High* long-run target for debt/GDP

Fiscal Financing

- Implied long-run targets (as % of GDP) for
  - Government expenditures
  - Transfers
  - Taxes
- Macroeconomic stabilization and debt-servicing behaviors for each

Regime A: Fiscal behavior A

Regime B: Fiscal behavior B

Fiscal Volatility

Regime S: *Stable*, relatively smaller variances

Regime V: *Volatile*, relatively larger variances

Three Sources for Regime Switching

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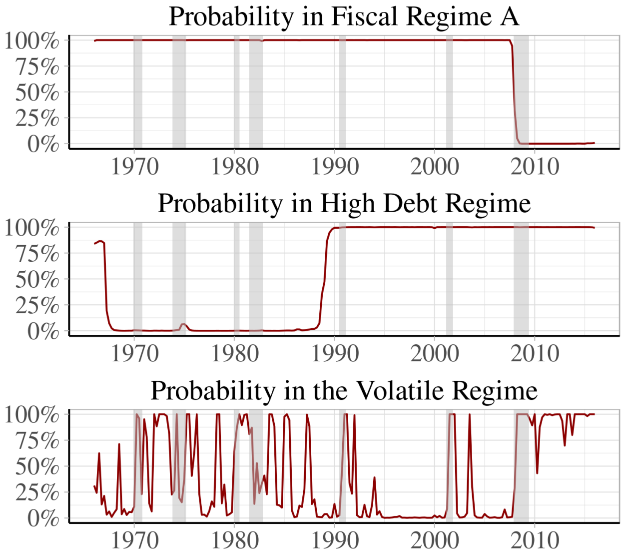
Timing of Fiscal Regimes



Posterior Parameter Distributions Under Regimes A & B

		Fiscal Regime A		Fiscal Regime B	
Param.	Description	Median	90% Bounds	Median	90% Bounds
$\bar{g}$	Long-run gov target	0.19	(0.18, 0.20)	0.31	(0.29, 0.32)
ψ_g	Resp to output gap	-0.32	(-0.38, -0.28)	-0.43	(-0.45, -0.39)
γ_g	Resp to debt	-0.55	(-0.61, -0.49)	-0.44	(-0.50, -0.40)

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- Fiscal Regime A has **lower long-run** government expenditures
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Results: Tax Behavior

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$\bar{n}$	Long-run transfers	0.11	(0.10, 0.13)	0.18	(0.17, 0.20)
ψ_n	Resp to output gap	-0.46	(-0.49, -0.41)	-0.50	(-0.54, -0.43)
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Results: Debt Regimes

Posterior Parameter Distributions Under Low & High Debt Regimes

		Low Debt Regime		High Debt Regime	
Param.	Description	Median	90% Bounds	Median	90% Bounds
$\bar{b}$	Debt/GDP target	0.37	(0.34, 0.39)	0.60	(0.55, 0.64)

Debt Regimes

Low debt regime $\approx$ 37% of GDP
High debt regime $\approx$ 60% of GDP

Posterior Parameter Distributions Under Stable and Volatile Regimes

		Stable Regime		Volatile Regime	
Param.	Description	Median	90% Bounds	Median	90% Bounds
σ_g	Gov stdev	0.10	(0.09, 0.11)	0.19	(0.17, 0.22)
σ_τ	Tax stdev	0.10	(0.10, 0.11)	0.29	(0.28, 0.30)
σ_n	Transfers stdev	0.06	(0.06, 0.08)	0.22	(0.19, 0.26)
σ_d	Deficit stdev	0.08	(0.08, 0.10)	0.20	(0.19, 0.22)

All standard deviations are larger in volatile regime,
most more than double.

- Evidence of switching in all three dimensions.
- Switch from low-debt to high-debt regime in 1989.
- Single, permanent, switch in fiscal policy behavior in 2008.
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