"Short-term Debt and Financial Crises: What we can learn from U.S. Treasury Supply"

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Summary

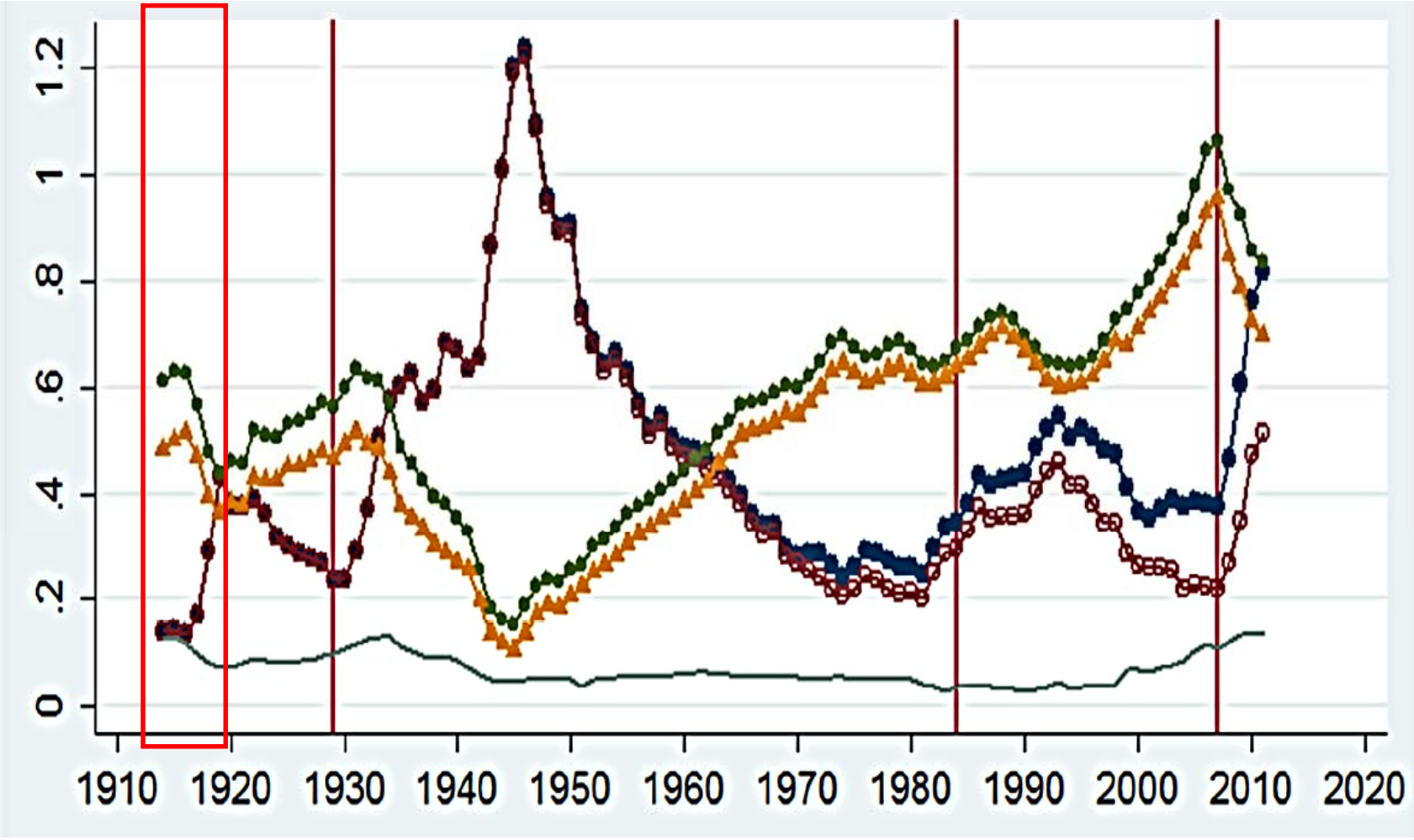
- Theory: Non-financial sector demand for safe and liquid assets drives the short-term debt issued by financial sector.
- Predictions:
  - Increase in Treasury supply decreases the net supply of short-term debt and the net long-term investment by the financial sector.
  - Increase in Treasury supply increases checkable deposits.
  - Reduction in Treasury supply increases the expenditure share of "credit" goods.
- Accounting for the impact of Treasury supply on bank money helps resolve the "missing money" puzzle.

I. What led to or accompanied those major changes in Treasury supply?

- Wars
- Recessions
- Inflation, internet boom

$\Longrightarrow$ History of the United States public debt

WWI: 1914-18


0
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.4
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1910
1920
1930
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1950
1960
1970
1980
1990
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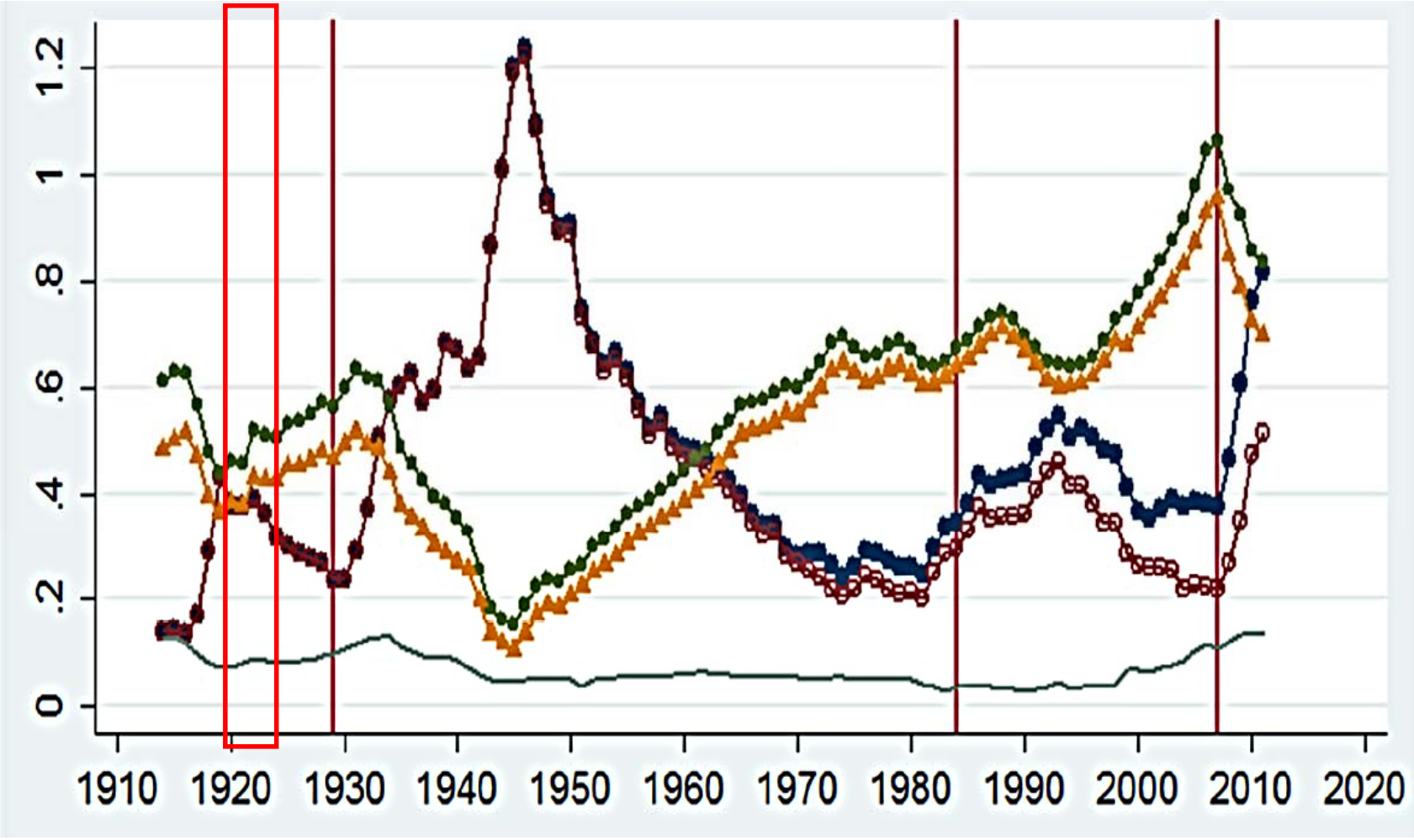
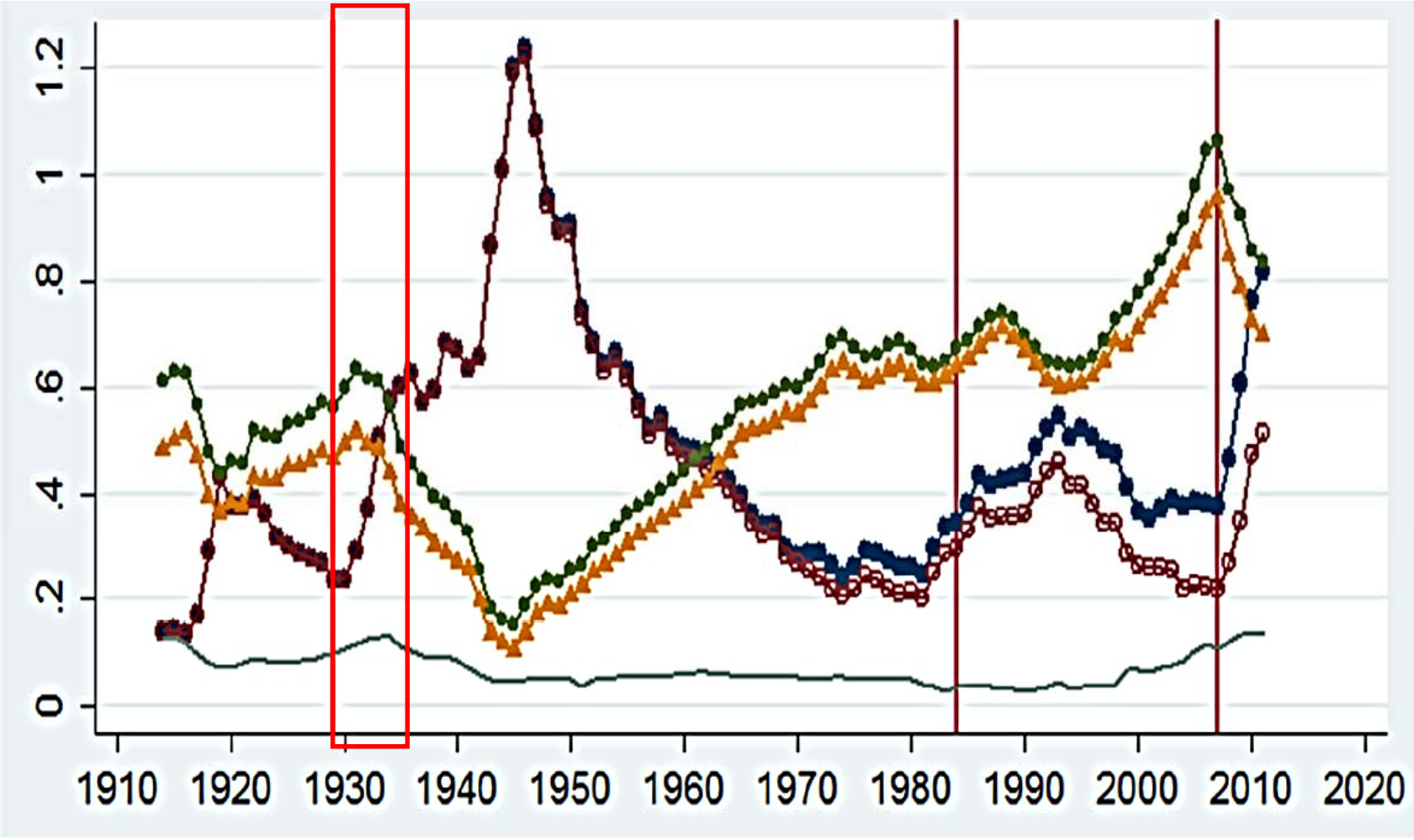
2020

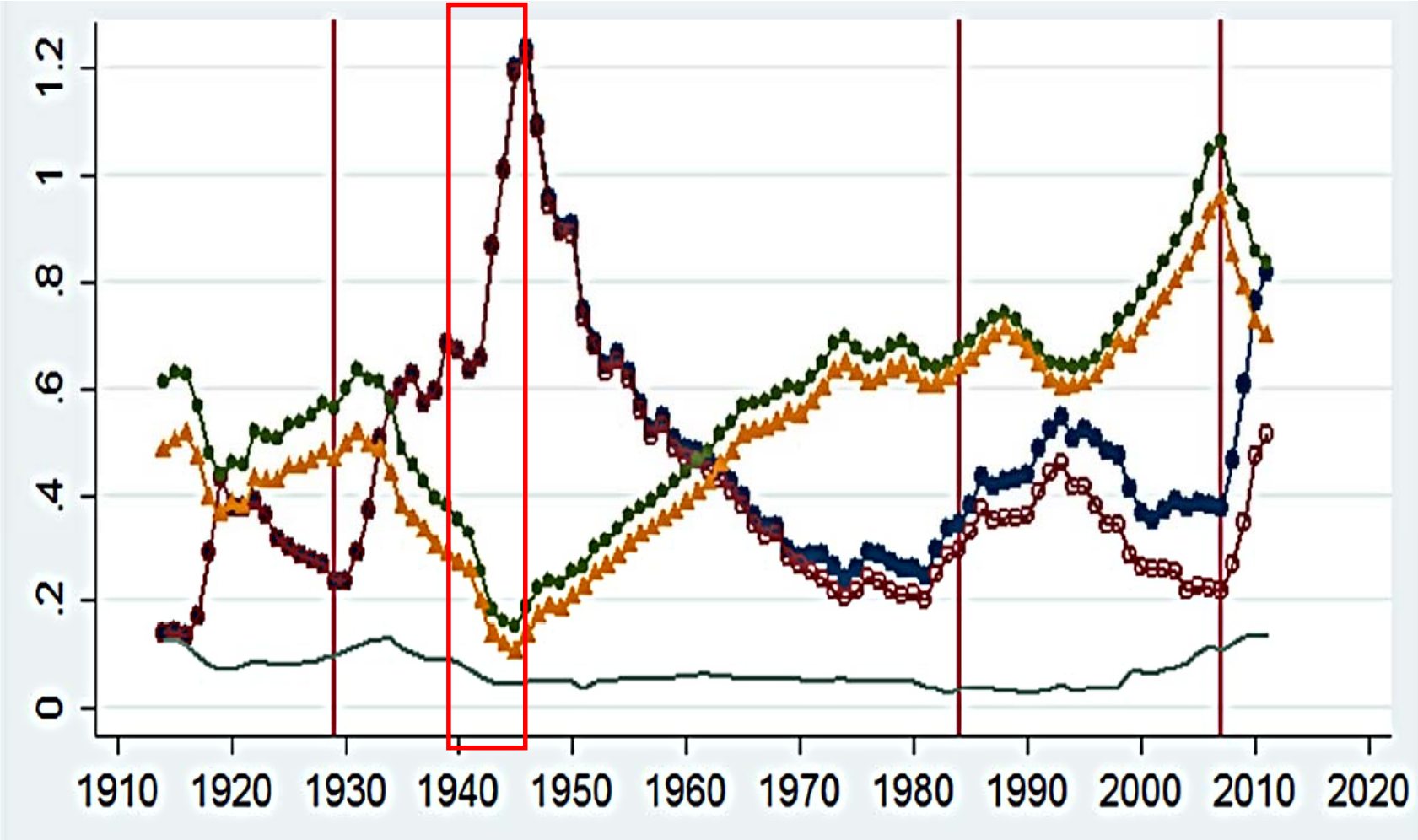
Harding Presidency: 1920-23



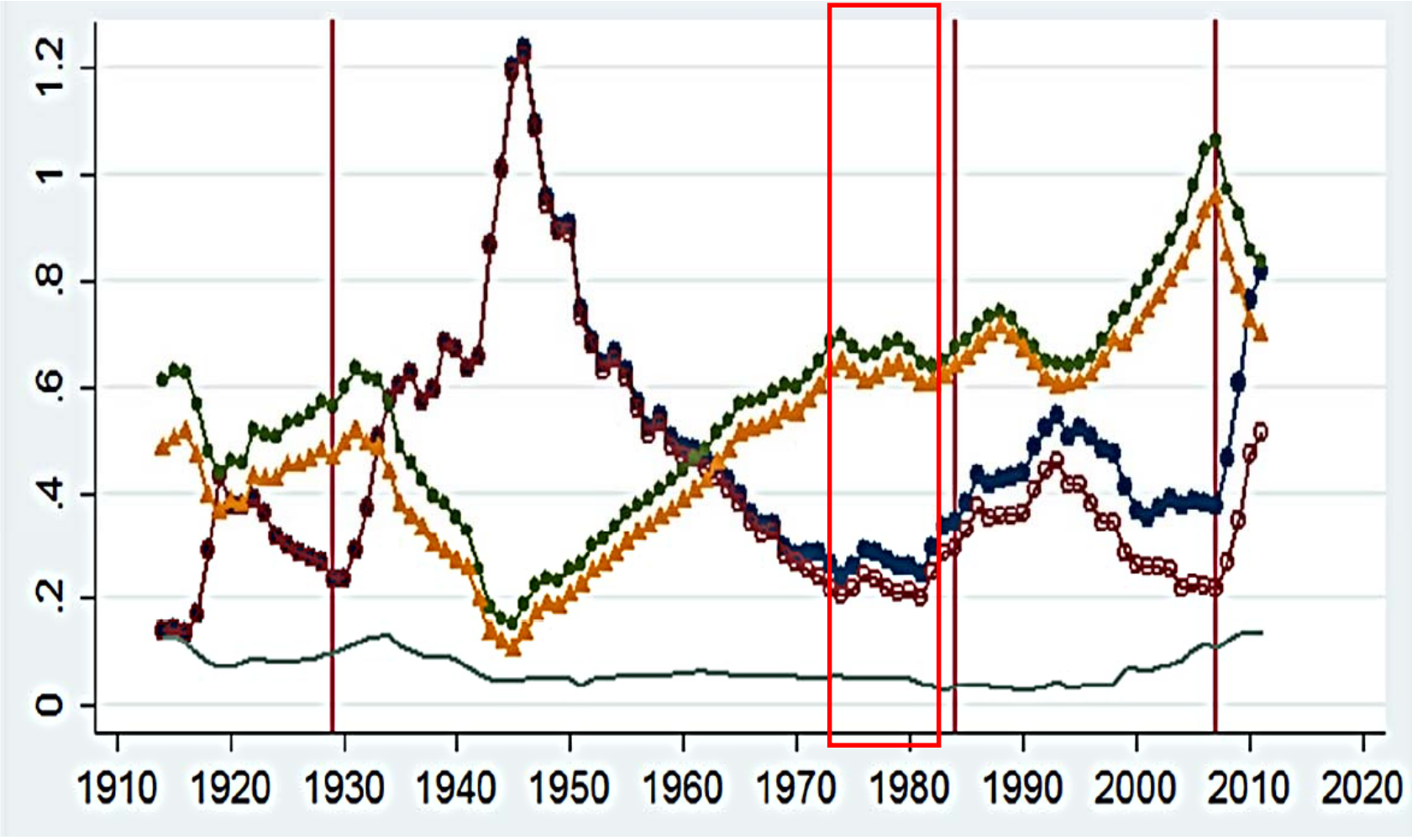
Great Depression: 1929-1933



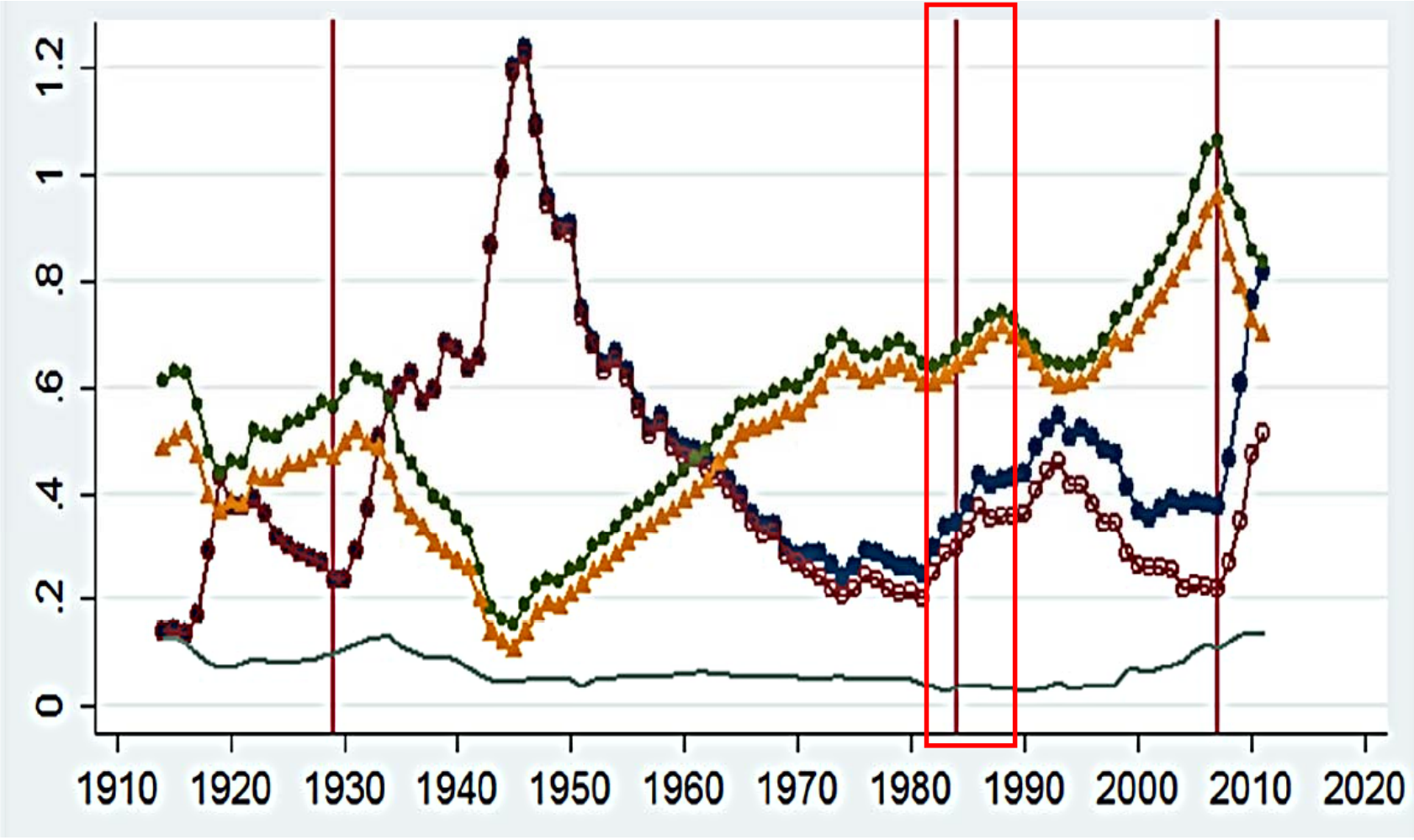
WWII: 1939-1945



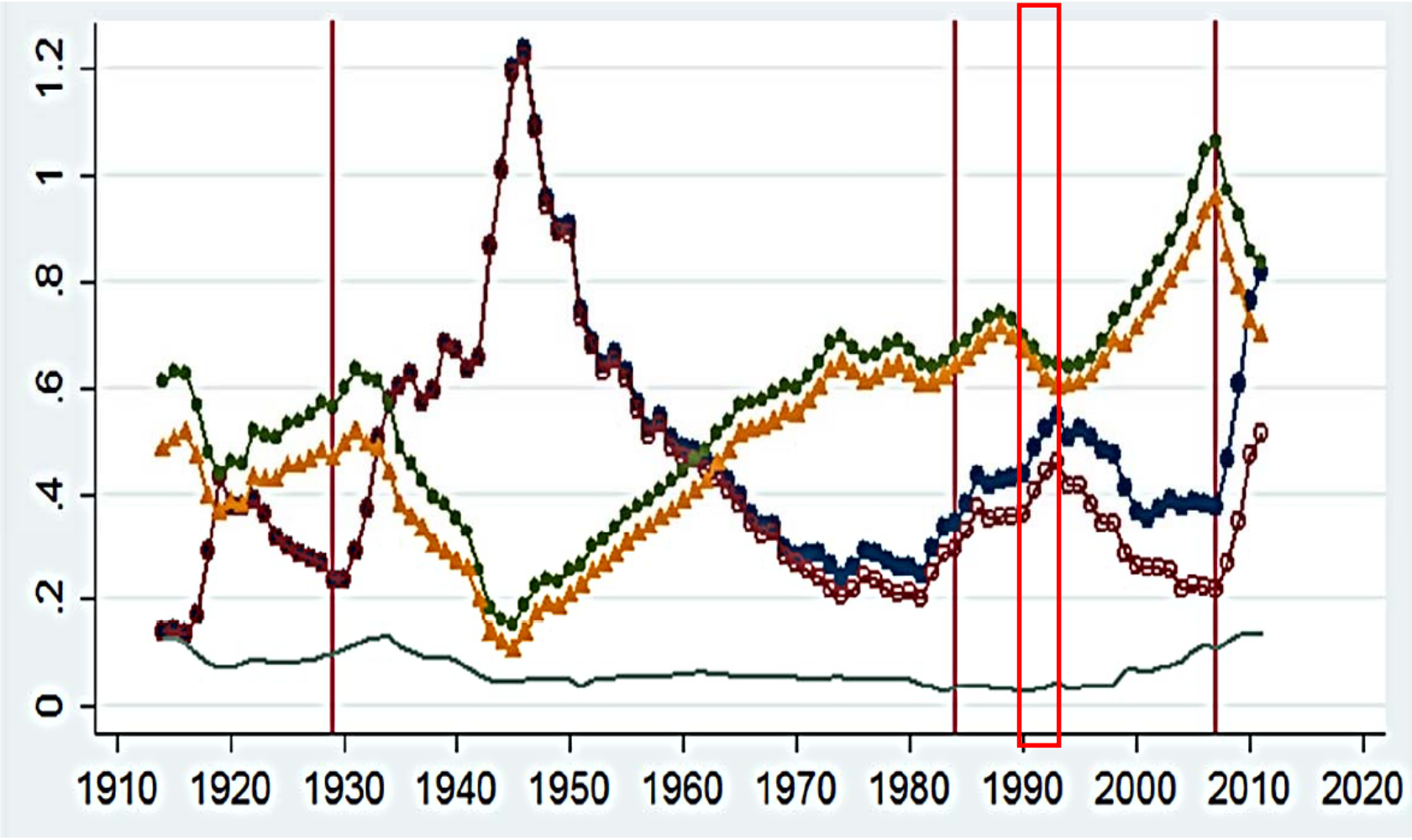
Recession: 1974-75, 1980-81



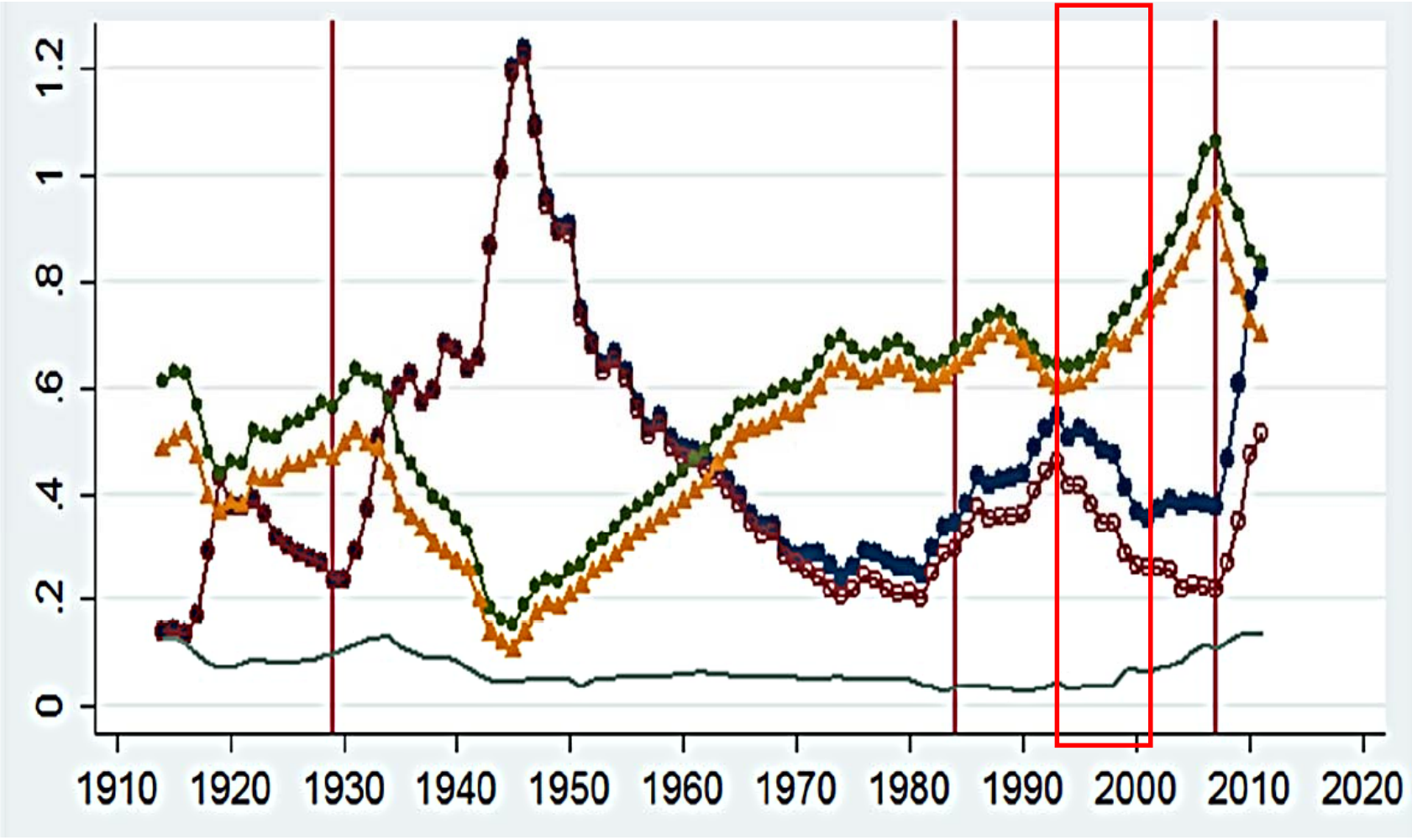
Reagan Presidency: 1981-89



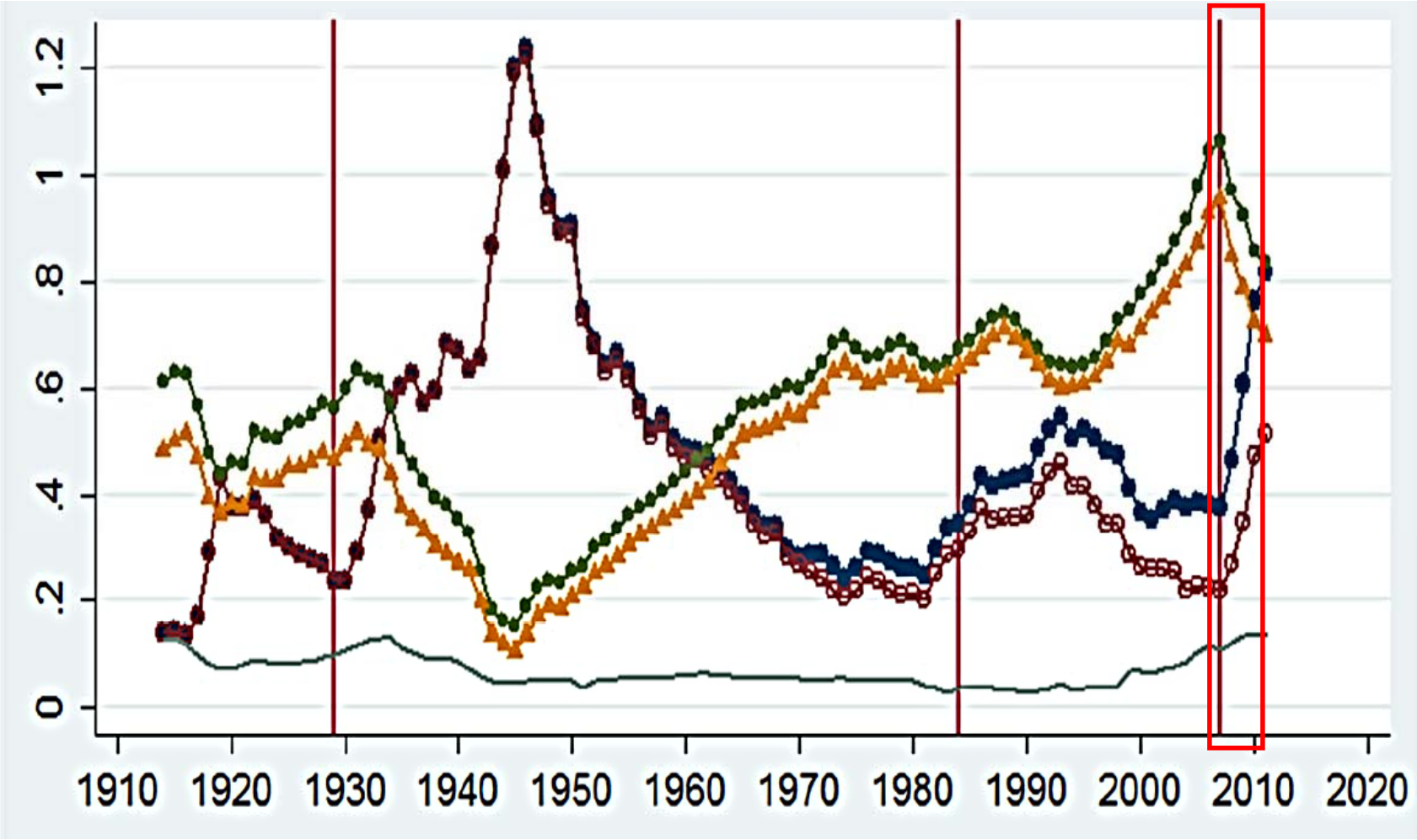
Gulf War-Recession: 1990-91



Clinton Presidency: 1993-2001



Great Recession: 2007-09



Wars and recessions

- "Crowding out" during war periods:
  - Is the government's war-time policy "crowding out" private economic activities?
  - Economic and political uncertainty discourages financial sectors from taking on high leverage?
  - Compare across wars? For example, Korean War and Vietnam War were largely financed by taxation and not public debt.

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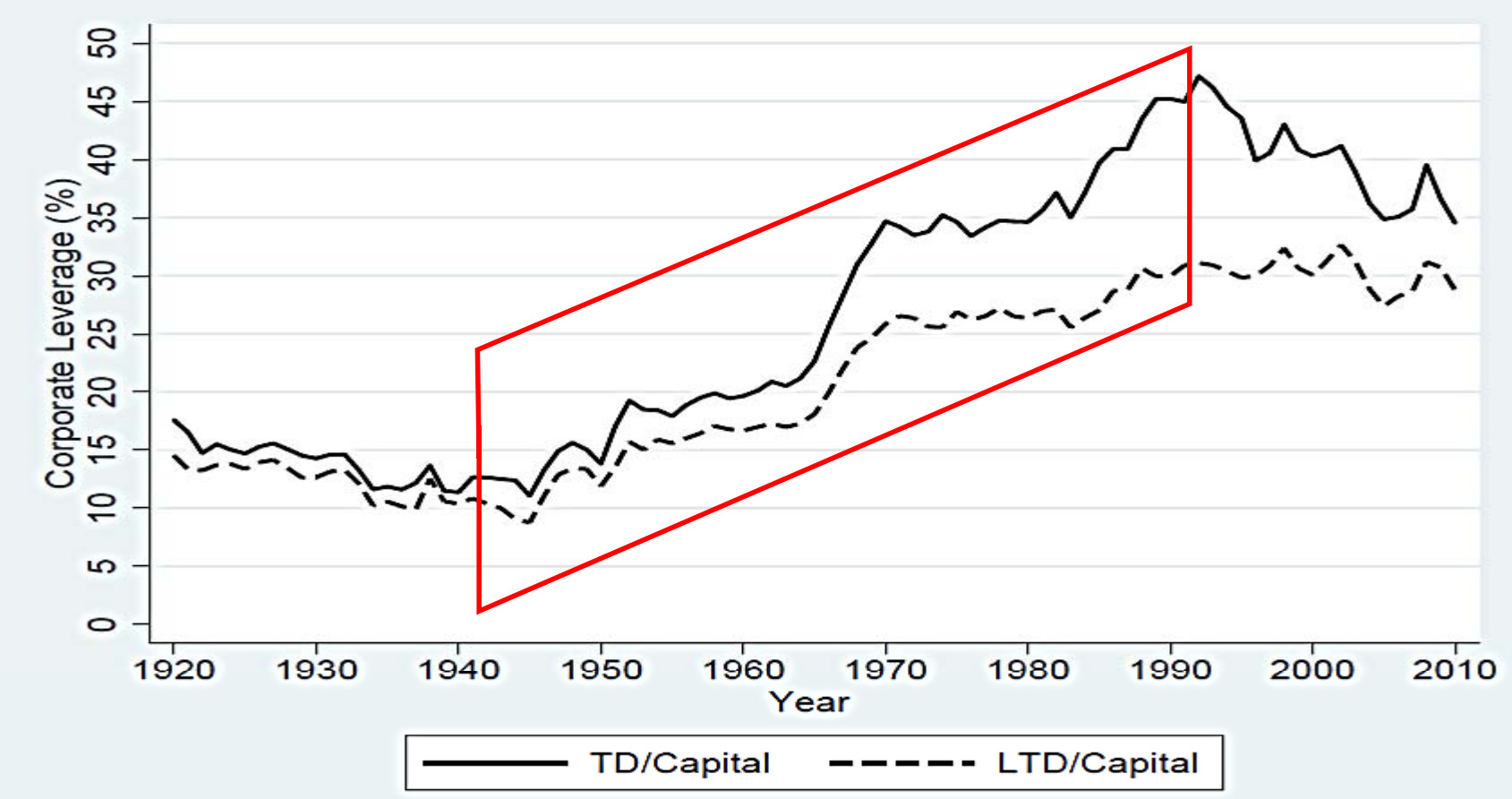
- Recessions:
  - Results are robust after controlling for past GDP growth or dropping financial crisis.
  - Durable consumption ("credit" goods) is pro-cyclical.
  - What about leading indicators of business cycles? (Term spread, Baa-Aaa spread, housing starts ...)

Table 6. Three additional approaches to address endogeneity concerns
Panel A. Controls for loan demand. Dropping most problematic years.

	Dependent variable: Net short-term debt(t)/GDP(t)					
	(1)	(2)	(3)	(4)	(5)	(6)
Govt. supply(t)/GDP(t)	-0.486	-0.309	-0.320	-0.556	-0.487	-0.516
	(-5.02)	(-4.81)	(-5.48)	(-5.03)	(-5.67)	(-4.84)
Real GDP(t)/Real GDP(t-5)		-0.094				
		(-2.20)				
Primary deficit/GDP, year t-4 to t				0.119		
				(1.36)		
Primary deficit/GDP, year t+1 to t+5				-0.053		
				(-0.83)		
Year	0.005	0.007	0.007	0.004	0.004	0.004
	(4.49)	(9.24)	(10.82)	(4.85)	(4.59)	(2.90)
R^2	0.853	0.928	0.923	0.900	0.886	0.878
Sample	1914-2011	1934-2011	As (2)	1918-2004	As (4)	Drop year t to t+9 after financial crisis

II. What about corporate debt?



- Graham, Leary, and Roberts (2013): Increase in leverage from 1946 to 1970 for all unregulated industries and firms of all sizes → Is it about safe assets or credit in general?

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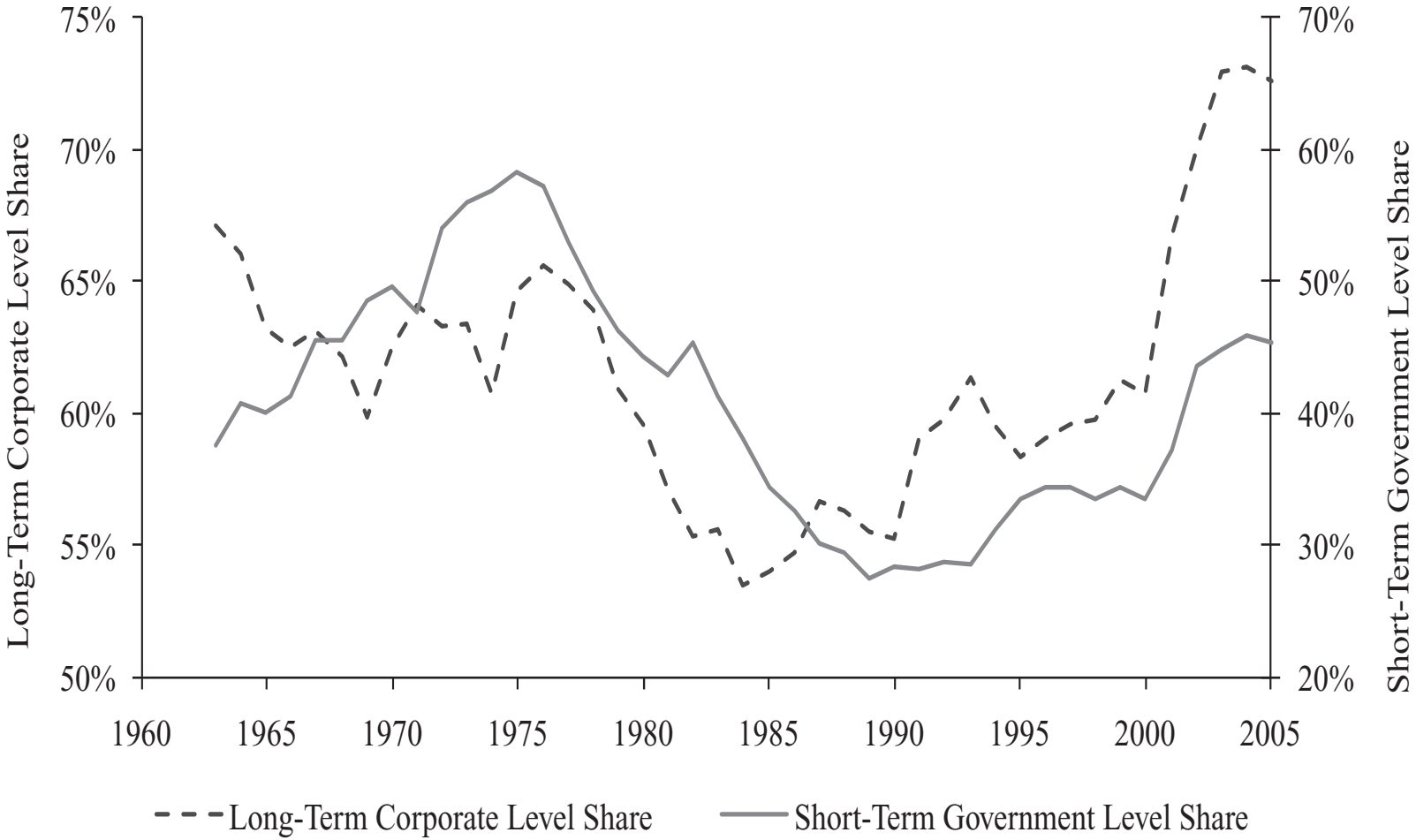

- Greenwood, Hanson, Stein (2010): Firms act as macro liquidity providers, filling government debt maturity gap.

III. The Demand Side

- Demand for safe assets changes over time.
  - If Treasury supply is relatively inelastic, a spike in demand should result in a spike in the Treasury specialness (e.g., AAA-Treasury spread, Repo-Treasury spread).
  - Does Treasury specialness predict future increase in financial intermediary short-term debt?

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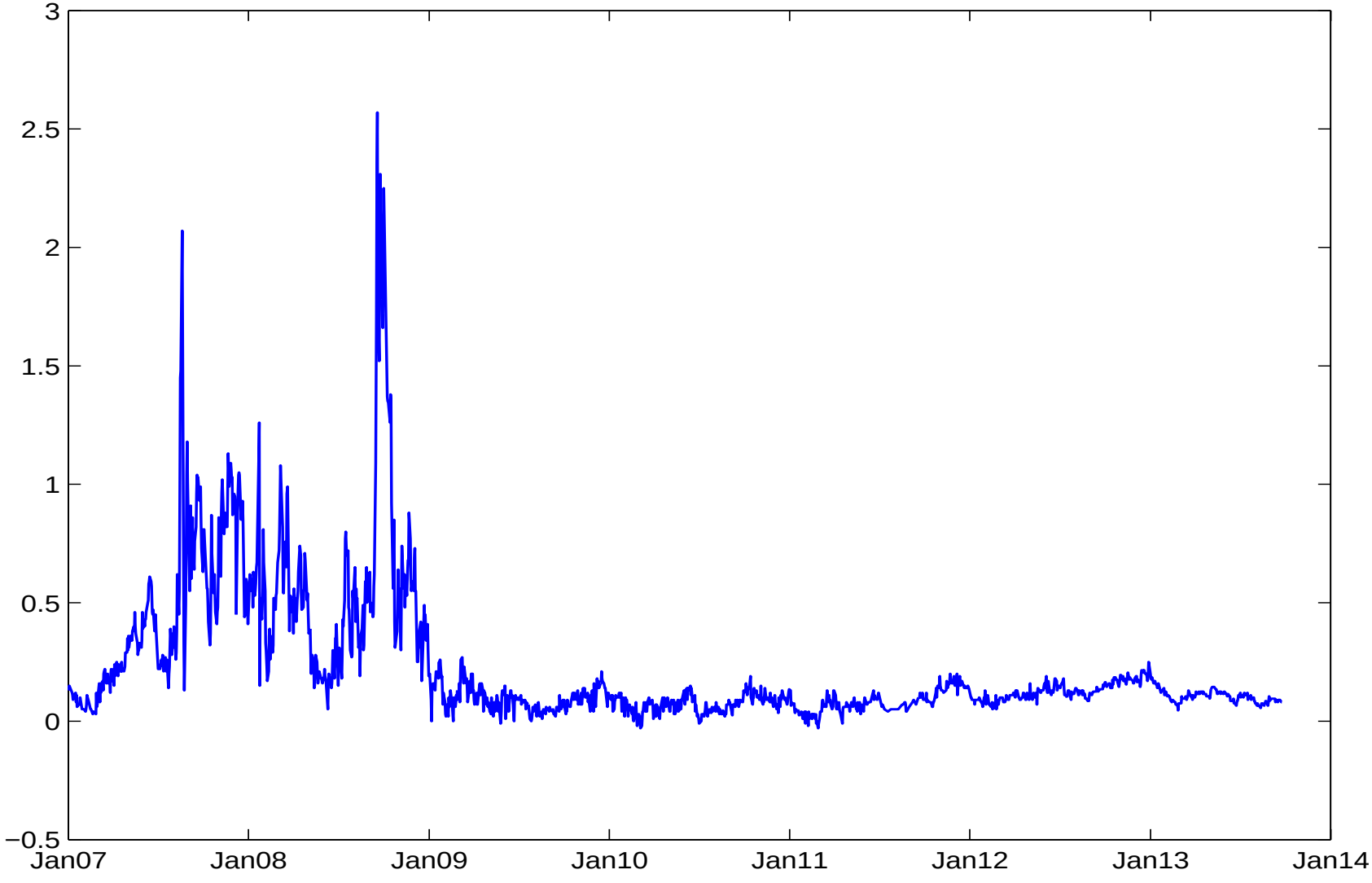
- Demand elasticity might also change over time (e.g., due to foreign demand).
  - The sensitivity of the private supply of short-term debt to Treasury supply will then change as well.

3-mth GCF Repo Rate – Treasury



IV. Complementarity and Crowding-In

- Holmstrom and Tirole (1998): Treasury as complementary input into the production process.
  - Applies to financial intermediaries, too.
- Weymuller (2013): Banks can create more safe assets by holding treasuries and risky assets.
  - European evidence

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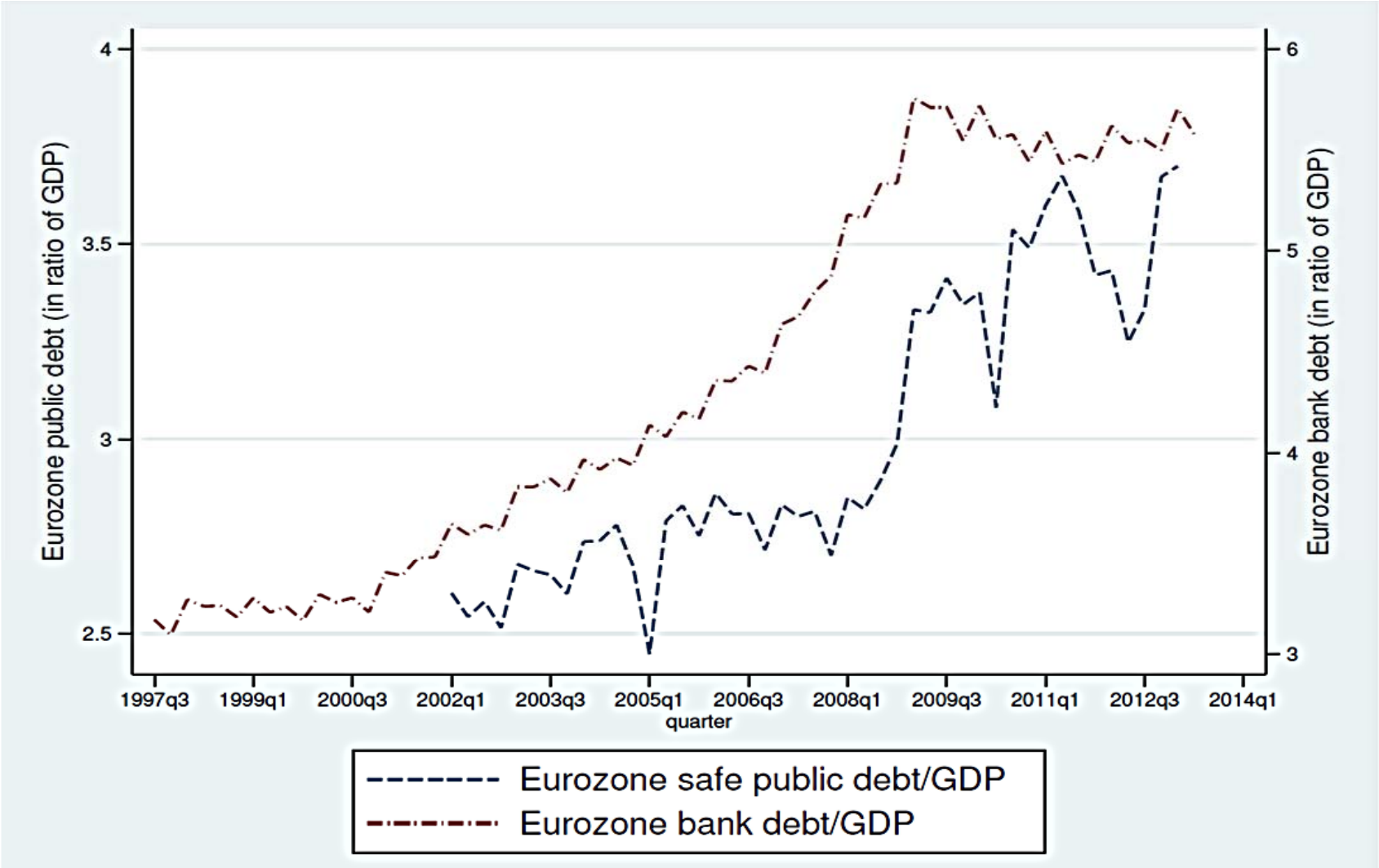

Weymuller (2013)

Conclusion

- This is a very exciting research agenda.
- How to deal with wars and recessions?
- Additional predictions:
  - demand effects
  - complementarity and crowding-in