Claim Dilution in the Municipal Debt Market

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Discussed by Edison Yu
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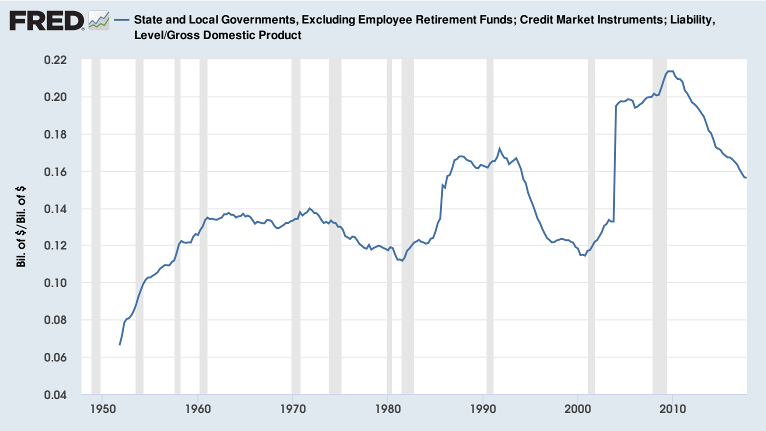
Research Question

- Investigate changes in bank loan shares of municipal debts in response to shocks
- Understand the debt dilution problem in the municipal debt market
- Study inter-creditor conflict problem

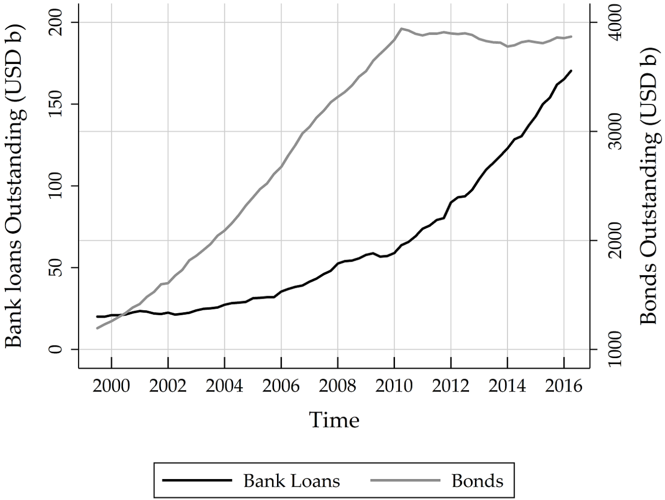
Local Debts Growing Over Time

State and Local Government Liability Credit Market Instrument / Nominal GDP



Shaded areas indicate U.S. recessions **Sources: BEA, Board of Governors** **myf.red/g/jjnO**

Bank Loans are Growing Faster



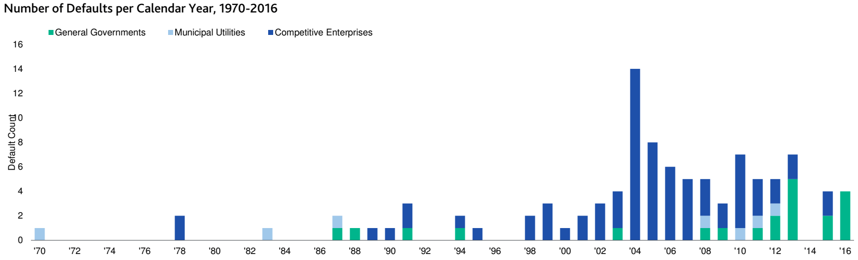
Source: Ivanov and Zimmermann (2017)

Municipal Bonds Have Lower Default Rates

	Moody's		*S&P*	
	Municipal	*Corporate*	*Municipal*	*Corporate*
Aaa/AAA	0.00	0.52	0.00	0.60
Aa/AA	0.06	0.52	0.00	1.50
A/A	0.03	1.29	0.23	2.91
Baa/BBB	0.13	4.64	0.32	10.29
Ba/BB	2.65	19.12	1.74	29.93
B/B	11.86	43.34	8.48	53.72
Caa-C/CCC-C	16.58	69.18	44.81	69.19
Investment Grade	0.07	2.09	0.20	4.14
Non-Invest Grade	4.29	31.37	7.37	42.35
All	**0.10**	**9.70**	**0.29**	**12.98**

Source: Municipal Bond Fairness Act (HR 6308).

Overall Defaults have Increased



Source: Moody's Investors Service

Methodology

- Identify potentially exogenous shocks to municipalities
- Permanent shock: population estimate revision (Suarez Serrato and Wingender (2016))
  - Census count minus population estimates
  - Population counts are related to federal funding
  - Shocks of different signs are included in regressions separately (asymmetric effects)
- Transitory shock:
  - Snow coverage
  - Revenue and service disruptions are costly to municipalities
- Regress variables of interests on these shocks with county controls
  - Bank shares, amount of bonds and bank loans, and share of term loans

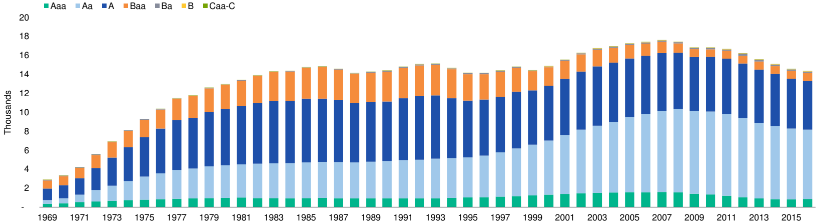
Main Results

- Permanent negative shock increased bank share only in low income counties
  - Bonds decrease while bank loans increase
  - Effects have a two-year lag because of the delayed release time of revision
- Transitory shock increased bank share and credit line usage
  - But results are mostly weak (not statistically significant)

What are the stories?

- Most of the results are consistent with findings in the corporate debt market
  - e.g. Sufi (2009), Raugh and Sufi (2010), Colia, Ippolito, and Li (2013)
- What are the explanations?
  - Lower credit quality? (and heterogeneity of municipality in general)
  - Bank lenders provide monitoring benefits to other creditors
    - e.g. James (1987), Mikkelson and Partch (1986)
  - Inter-creditor relationship and renegotiation costs
    - Billett (2016), Becker and Ivashina (2017), Berlin, Nini, and Yu (2018)
  - Financial constraints and market access

Overall Ratings have been Improving



The increase in A and Aa ratings since 2000 reflects the recalibration to a global rating scale in 2010 and not a fundamental shift in credit quality. The increase appears gradual instead of as a sudden shift because rating histories were also recalibrated. This affected all credits that were outstanding at the time of the recalibration, comprising about half of all ratings; any ratings that were withdrawn prior to the recalibration were not adjusted (See Municipal Ratings Performance Since the Recalibration of the US Municipal Scale).

Source: Moody's Investors Service

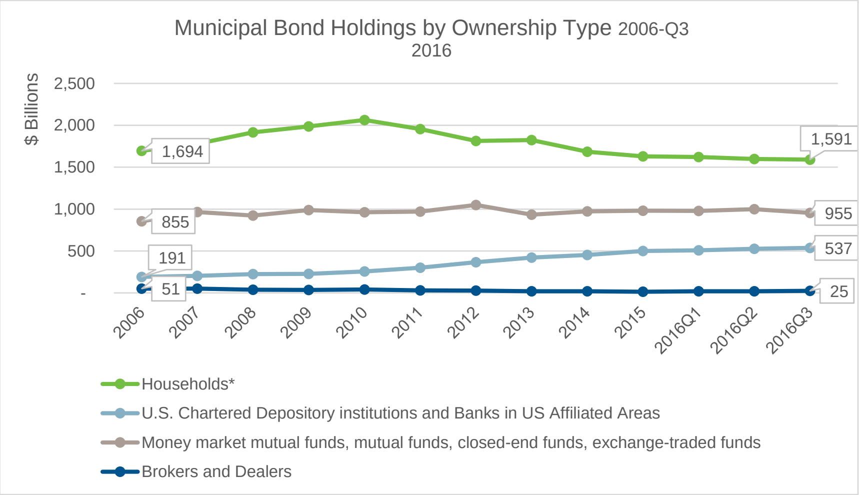
Municipality Debt Market

- What do we learn from studying the municipality debt market?
  - Different treatment in bankruptcy law
    - Territory vs states (e.g. Puerto Rico vs Detroit)
  - Tax exemption status
    - Tax advantage of bank debts vs bonds?
  - Difficulty to increase tax revenue or reduce expenditures
    - Other financial constraints?
    - Study the effects by counties with different levels of financial constraint

Other Comments

- What's the magnitue of the shocks in dollars?
- Tax reform and the ownership of municipal debts
  - Bergstresser and Cohen (2015)
- Ownership types can also matter
  - Bonds and loans are held by the same owners?
  - e.g. bank holding of bonds has increased
- Consequences of changing the mix of stake holders
- Performance over time
  - default rates by different bank/bond mixes

Changes in Bond Holdings Ownership



Source: Federal Reserve Board Financial Accounts of the United States. December 8, 2016 (2016: Q3 Release).

Summary

- Interesting and the shocks are very neat
- I enjoy reading it very much.
- Very useful especially when we are likely heading for more municipal debt defaults