Mutual Fund Fragility, Dealer Liquidity Provisions, and the Pricing of Municipal Bonds
by Li, O’Hara, and Zhou

Discussion by
Mahyar Kargar
UIUC
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Brookings MFC
Summary
Impact of MF fragility on munis during the crisis (Mar 9–20)

- MF redemptions destabilized the muni market in Mar 2020
  - bond MF liquidity mismatch leads to runs (Chen-Goldstein-Jiang, 2010; Goldstein-Jiang-Ng, 2017; Zeng, 2017)

- Munis held by MFs had 29% higher trading volume than other bonds

- Among munis held by MFs
  - higher yield spreads for bonds held by MFs with larger outflows
  - higher volume for munis held by MFs with larger redemptions

- Results are quite robust: all work with issuer-date FEs
Dealers’ behavior

- About 2 weeks before large MF outflows on Mar 9
  - dealers accumulated more munis held by MFs than other bonds
  - authors’ speculation: MFs building cash reserves in expectation

- During the crisis (Mar 9–Mar 20)
  - dealers were net sellers of munis held by MFs
  - sold on net $20,000 more per bond-day munis held by MFs

- After muni fund flows stabilized (May 1–Jul 17)
  - dealer inventories in munis held by MFs continue to decline
  - sold on avg $267,000 more per bond-day munis held by MFs
This “fragility risk” in munis is priced post-crisis (May 1–Jul 17)

- **Post-crisis**, run risk posed by MF ownership is priced
  - about 33 bps yield premium on munis held by MFs post-crisis
  - the premium was only 6 bps pre-crisis in Jan and Feb, 2020
  - no difference in yields during crisis

- This is unlike what happened in corporate bonds

- Mechanism for post-crisis yield differential
  - Potential run risk (use 3 measures in Falato-Goldstein-Hortaçsu, 2021)
  - Selection (bond type)
  - Reaching for yield by muni MFs
Facts: Munis vs. corporate bonds in Mar-Apr 2020
Munis vs. corporate bonds in Spring 2020

- Dealers’ behavior
  - very different in munis from corporate bonds

- Authors’ explanation
  - lack of a secondary market facility for munis

- Fed directly and indirectly intervened in both markets
  - **PDCF**: PDs could borrow against both muni and corp bond collateral
  - **P/SMCCF**: Fed buying corp bonds in primary and secondary markets
  - **MLF**: Fed lending in primary muni market only (muni market is very fragmented)

- Fed would’ve deployed a secondary market facility for munis if
  - “MMLF and MLF had been insufficient to stabilize the market.”

(Kent Hiteshew interview with Bloomberg, Apr, 2021)
Municipal Liquidity Facility

- MLF
  - announced on Apr 9, 2020
  - cities with pop > 1m; counties with pop > 2m
  - $500 billion in size
  - meant as a backstop: rates > market rate in normal times
  - eligible issuers expanded on Apr 27: cities > 250k; counties > 500k
  - ended on Dec 31, 2020
  - made only four loans to two issuers!

- “The immediate purpose of the MLF is to enhance the liquidity of the primary short-term municipal securities market . . .”
Yield spreads

AAA-rated corporate bonds

Munis (Li-O'Hara-Zhou, 2021)
Transaction costs

Corporate bonds (Kargar et al., 2021)

Munis (Haughwout-Hyman-Shachar, 2021)
MF flows

Corporate bonds (Falato-Goldstein-Hortaçsu, 2021)

Munis (Li-O’Hara-Zhou, 2021)
Dealer inventories: very different!

Corporate bonds (Kargar et al., 2021)

Munis (Li-O’Hara-Zhou, 2021)
Comments and suggestions
Comment 1: No fire sale premium for munis during crisis

![Graph showing tax-adjusted yield spreads of muni bonds, in percent. The graph compares yield spreads held by a mutual fund and not held by a mutual fund. Drop lines are noted for March 9 and March 23.](image)
Large fire sale premium for corporate bonds during crisis

Q1: bonds with highest fraction of MF ownership (Ma-Xiao-Zeng, 2021)
Is run risk the whole story?

- “Fire sale premium” for munis appears only post-crisis
- Muni MF redemptions largely reversed in early Apr 2020
- Run risk arguably higher during the crisis when everyone is selling
  - why do we see run risk priced only post-crisis?
- Very different picture in corporate bonds
  - puzzling!
  - run risk does not seem to be the entire story
Comment 2: Which dealers reduced inventories in munis?

Primary dealers (NY Fed Primay Dealer Statistics)

All dealers (Li-O’Hara-Zhou, 2021)
Corporate bond inventories: PD vs. other dealers

Panel B: Cumulative inventory changes for primary and other dealers

Source: O’Hara-Zhou (2021)
Comment 2: Which dealers reduced inventories in munis?

- Muni inventories of PDs stabilized late Mar 2020
- Non-PD dealers must’ve sold post-crisis?
  - in contrast to corp bonds where all dealers accumulated inventories
- Dealer networks in the muni market (Li-Schürhoff, 2019)
  - core-periphery structure
  - core dealers: 10–30; periphery dealers: > 2,000
- Are PDs in the periphery of the muni dealer network?
- Is the dealer network fundamentally different for corp bonds?
  - network is also core-periphery for corp bonds (Di Maggio-Kermani-Song, 2017)
Comment 3: pecking order of liquidity in munis during crisis?

- Corp bond MFs followed a pecking order of liquidation (Ma-Xiao-Zeng, 2020)
  - first sold their most liquid assets before more illiquid ones
  - bonds with higher liquidations ranks in MFs had larger drops in prices
  - a higher liquidation rank indicates a more liquid bond within a MF.

- An indicator of the “dash-for-cash” (Haddad-Moreira-Muir, 2021; Kargar et al., 2021)

- Do we see the same pecking order in muni MFs?
Pecking order of liquidity for corporate bonds during crisis

Q1: bonds in the top quartile of liquidation rank (Ma-Xiao-Zeng, 2021)
Summary

• Enjoyed reading the paper!

• Evidence that MF redemptions adversely impacted the muni market

• Dealers behaved differently for munis vs. corp bonds

• Comments
  • dealer inventories in munis vs. corp bonds post-crisis?
  • fire sale premium during crisis for munis held by MFs?
  • PDs vs. other dealers?
  • Pecking order of liquidity in munis?

Thanks for the opportunity to discuss!