Paper Discussion

Stress-Tested: Municipal Bond ETFs During Market Turmoil

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Simon Wu

MSRB
Municipal Securities Rulemaking Board

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Electronic Municipal Market Access

Summary of Data and Methodology

- Fund holding data for municipal bonds in ETFs and mutual funds
- Difference-in-difference method to compare municipal bonds held exclusively by ETFs with bonds held exclusively by mutual funds, jointly by ETFs and mutual funds, and other bonds
  - Trading volume
  - Liquidity (effective bid-ask spread)

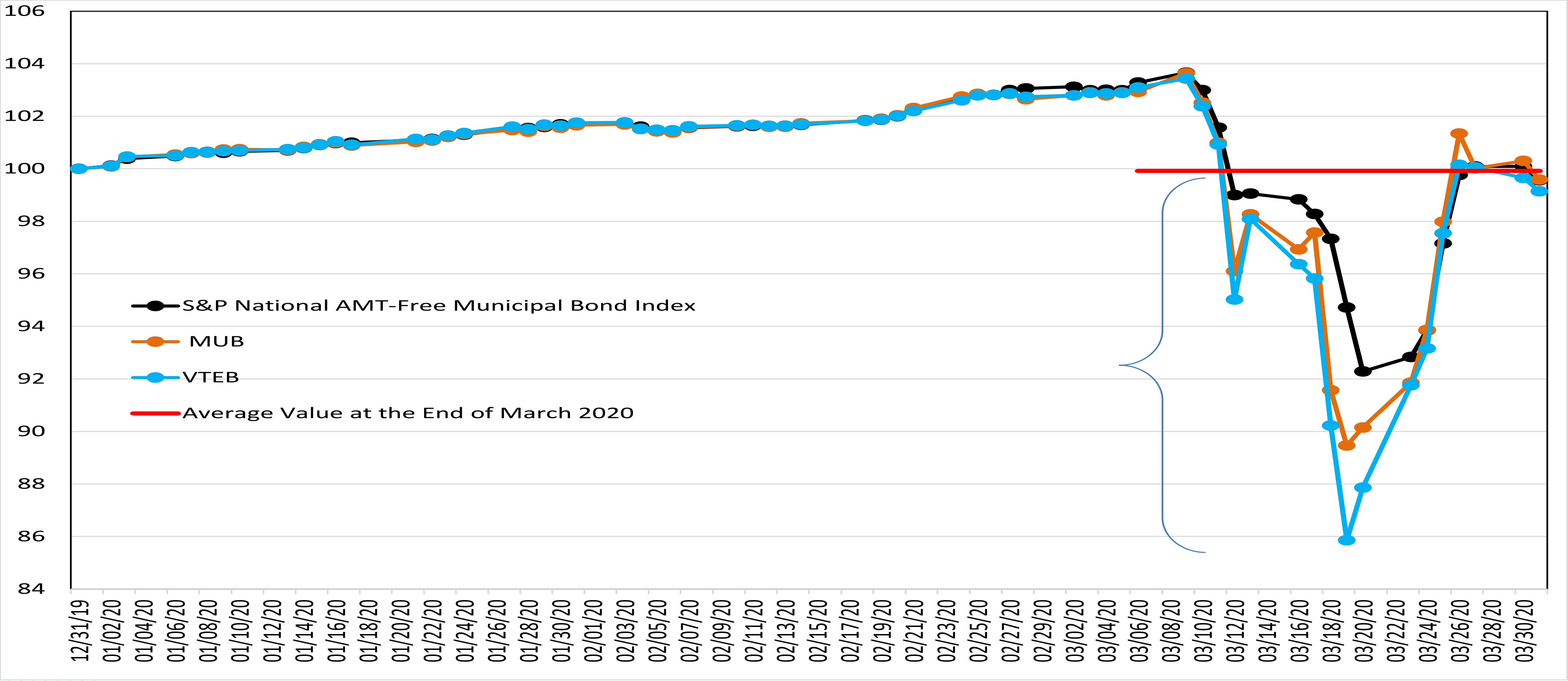
Main Findings on Municipal Bond ETFs During COVID

- ETF share price deviated significantly from NAV
- Authorized participants (APs) were not able to trade underlying municipal bonds easily to close the price gap. Relative to mutual fund-held bonds:
  - Liquidity for ETF-held bonds thinned out
  - Trading costs increased for ETF-held bonds
- More trading for bonds in ETFs, driven by smaller-sized trades
- Fed's MLF had a positive impact on the recovery of liquidity

Comments

- A very good paper on a great topic
- A few notes
  - Not all ETFs have an active AP
  - Difficulty and cost to short a municipal bond is a unique challenge
  - APs: Uncertainty over execution prices as well as wider bid-ask spreads
  - Small trades were likely executed by retail or SMAs, not necessarily by APs
- Main comment: A forever debate between ETF pricing and NAV
  - Were ETFs causing price distortion, or were NAVs stale?
  - Many ETFs may have overshot the declines during COVID
  - If so, arbitrageurs really needed to buy ETFs in the secondary market to close the gap

Price Movement of MUB and VTEB (ETFs) and S&P Muni Index During March 2020



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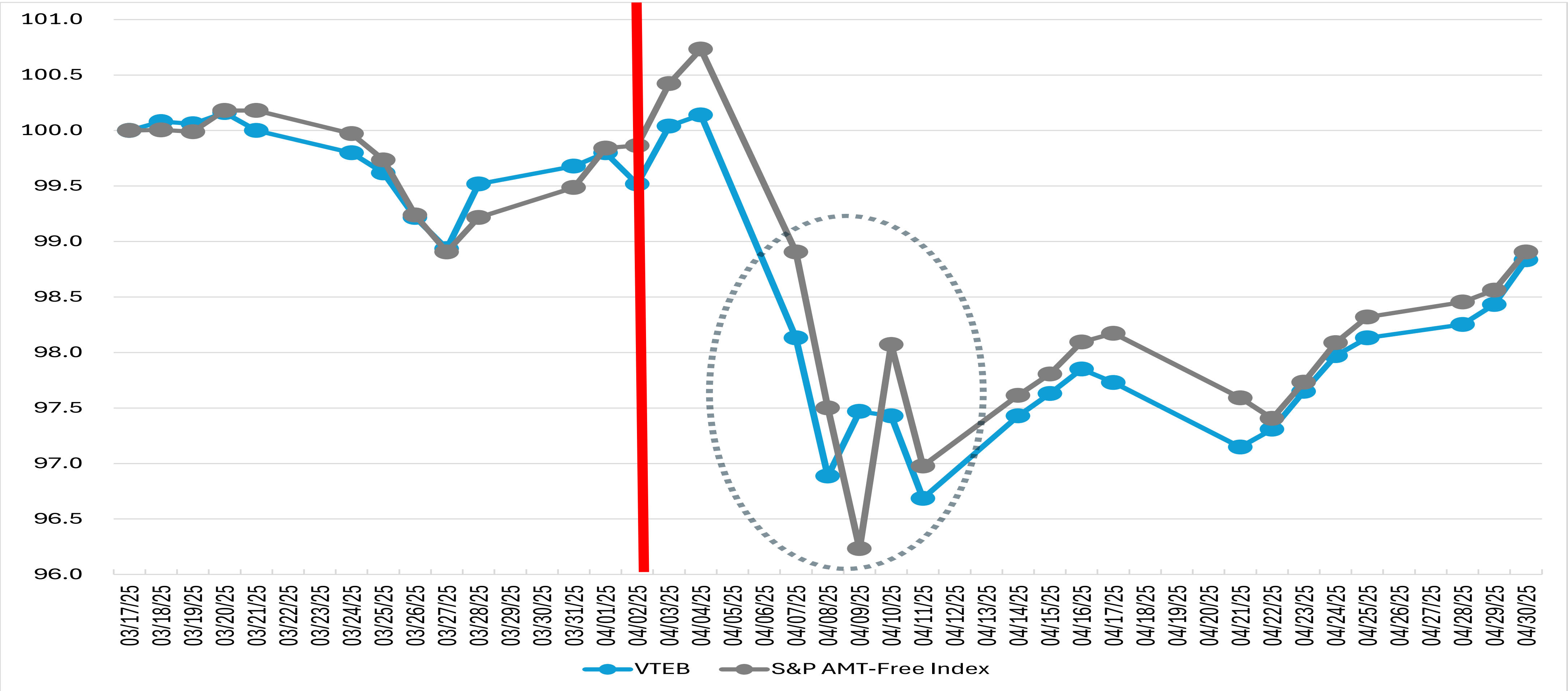
Other Thoughts

- Federal reserve actions other than MLF during COVID
  - Primary and secondary market support for investment-grade corporate bonds
  - Investment-grade corporate bonds performed better than municipal securities in terms of the recovery in liquidity (bid-ask spread), though high-yield corporate bonds lagged
  - See https://www.msrb.org/sites/default/files/MSRB-Trading-Costs-During-COVID-19.pdf
- Did April 2025 have the same impact on municipal bond ETFs?

What About April 2025? VTEB vs Index



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What About April 2025? MUB vs Index