Discussion of "Liquidity Dependence: Why Shrinking Central Bank Balance Sheets is an Uphill Task" by Acharya, Chauhan, Rajan, and Steffen (2022)

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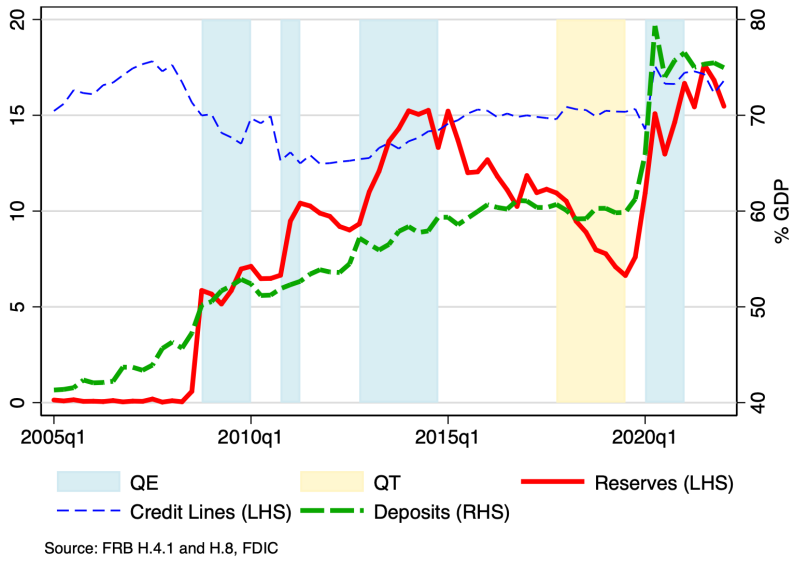
The views expressed in this presentation are those of the discussant and not those of the Federal Reserve Bank of New York or the Federal Reserve System.

Overview

Figure 1: Reserves, Deposits and Credit Lines



Source: FRB H.4.1 and H.8, FDIC

Overview of The paper:

- Short-term demandable deposits and bank credit lines rise with QE, but do not shrink with QT.
- Banks can be more prone to liquidity shocks during a tightening cycle after QE due to **liquidity mismatch**.

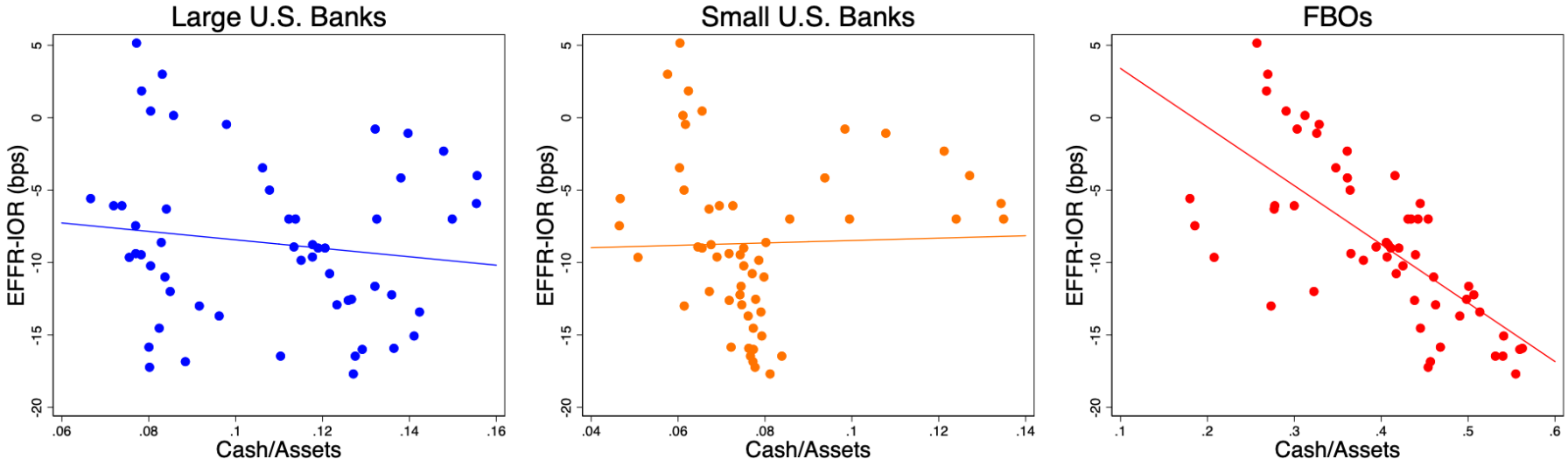
Overview of My Remarks:

- Banks' **balance sheet constraints** to intermediate are at the center of liquidity problems post-GFC.
- Foreign banking organizations (FBOs) in the US offer important clues on liquidity conditions and policy implementation.

Reserves vs. Price of Liquidity

- The paper does not find a robust relationship between aggregate reserves and the EFFR-IOR spread without adjusting for deposits or credit lines.
- However, the EFFR-IOR spread is in fact strongly negatively correlated with reserves for FBOs (foreign branches and agencies in the US).

Figure 2: The EFFR-IOR Spread and Reserves/Total Assets (2009Q1-2022Q2)

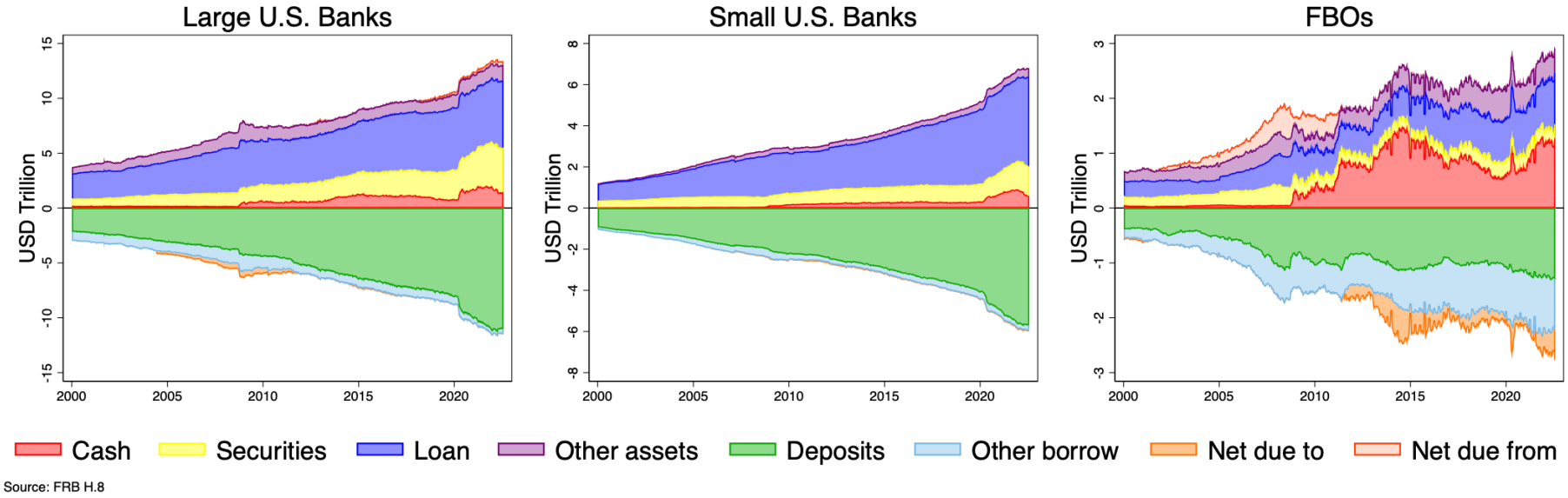


Source: H.8 and FRED

FBOs as Important Marginal Price Setters for Dollar Liquidity

- FBOs have a significantly higher share of reserves in total assets, lower reliance on deposits, no access to FDIC-insured deposits, more volatility/flexibility in balance sheet adjustments, and larger intra-office positions with foreign affiliates.

Figure 3: Assets and Liabilities of Commercial Banks in the US



Source: FRB H.8

Price of Liquidity in the Ample/Abundant Reserves Regime

- **IOR Arbitrage**: Borrow at EFFR (or equivalent) $<$ Lend at IOR
  - Cash-rich lenders without access to the IOR are willing to lend at a rate below the IOR.
  - Balance sheet constraints prevent banks from closing down the arbitrage.
  - FBOs account for most of the IOR arbitrage activities, in part due to differences in leverage constraints and FDIC deposit insurance fees.

Figure 4: IOR, ONRRP and EFFR

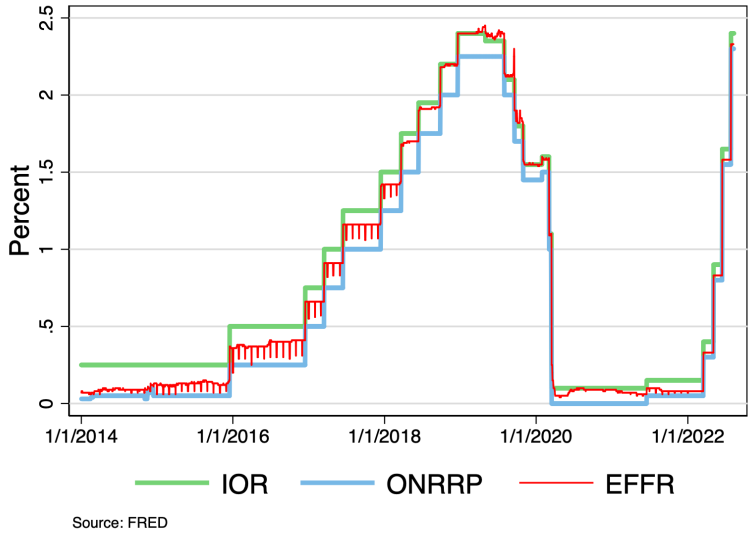
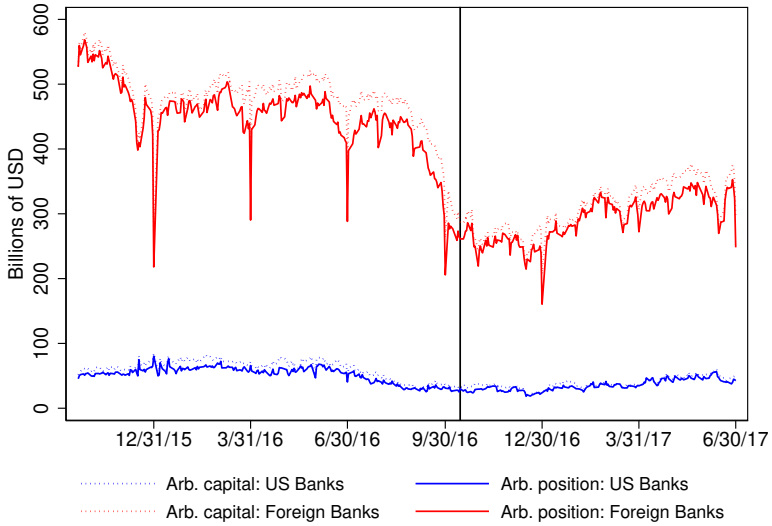


Figure 5: Estimated IOR Arbitrage

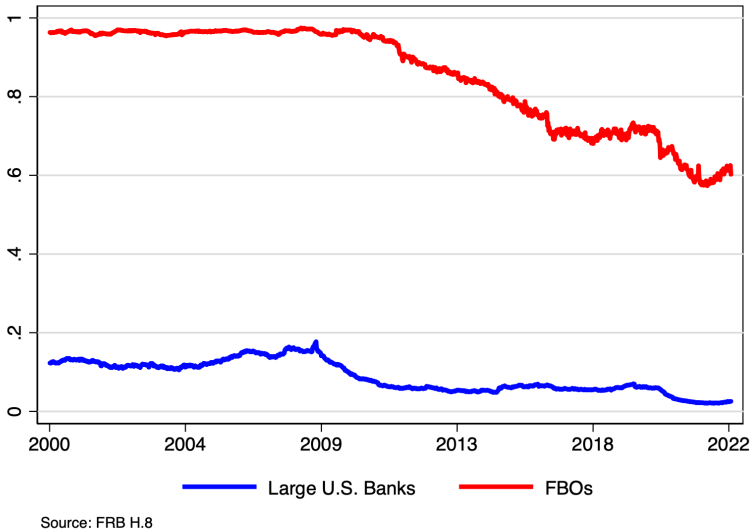


Source: Anderson, Du and Schlusche, 2021

Can Banks Withstand Large Funding Withdrawals?

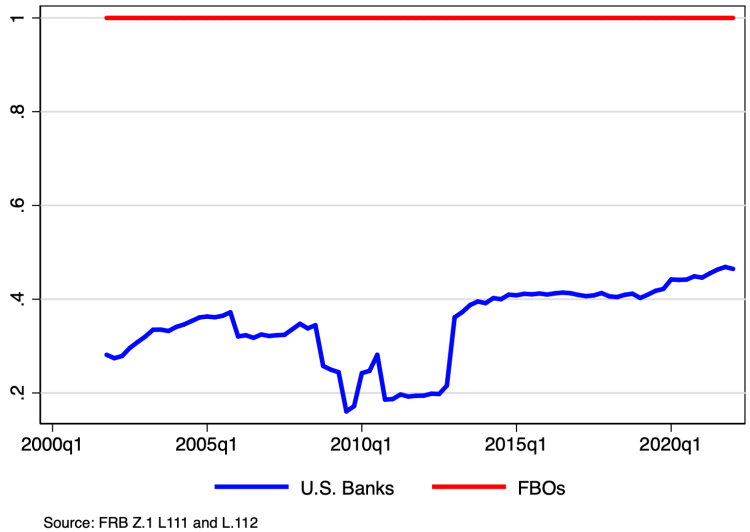
- The IOR arbitrage provides an example of potential "concern" in the paper where the reserves are entirely funded by overnight unsecured wholesale funding.
- The ratio of large time deposits to total deposits declined significantly post-GFC for FBOs. All FBO deposits are uninsured.

Figure 6: Ratio of Large Time Deposits to Total Deposits



Source: FRB H.8

Figure 7: Ratio of Uninsured Deposits to Total Deposits



Source: FRB Z.1 L111 and L.112

Can Banks Withstand Large Funding Withdrawals?

- Case study: The 2016 U.S. MMF Reform resulted in a $700 billion loss of unsecured wholesale funding for foreign banks from prime MMFs.
- FBOs simply cut back IOR arbitrages without contracting credit supply.

Figure 8: Prime Fund Funding vs. Reserves

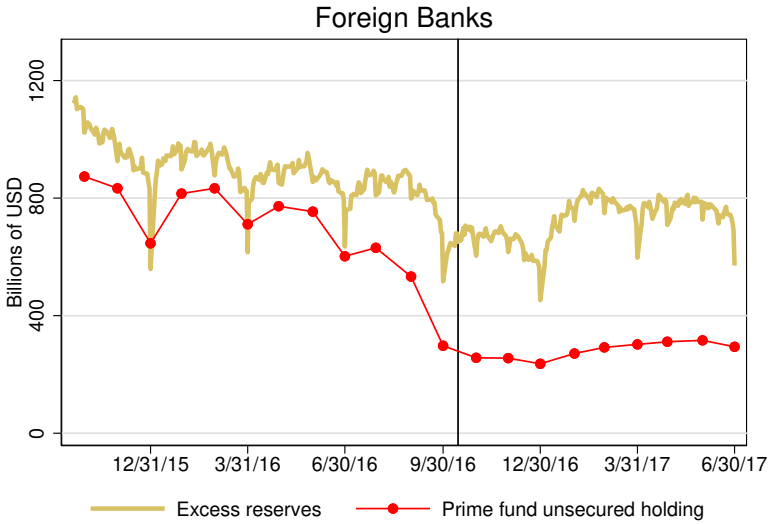
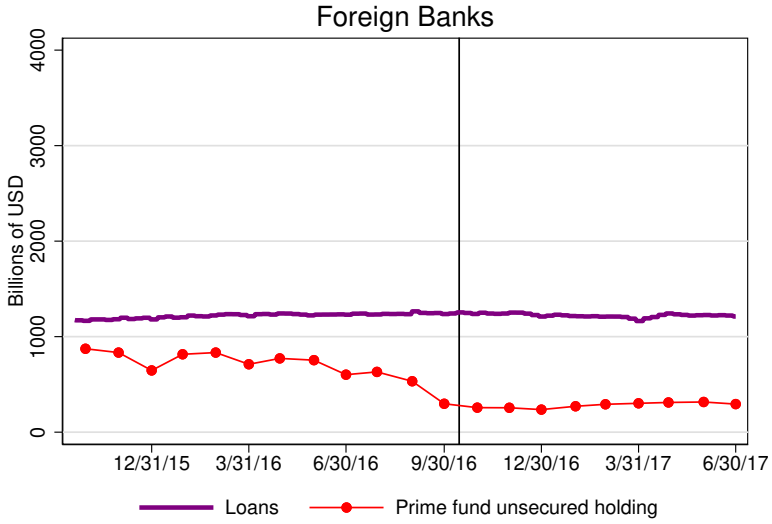


Figure 9: Prime Fund Funding vs. Loans



Source: Anderson, Du and Schlusche, 2021

Price of Liquidity in the Scarce Reserves Regime

- When reserves become scarce, the IOR arbitrage is no longer profitable. Instead, large banks can drain reserves to finance lending in the repo market.
  - The price of liquidity depends on banks' balance sheet constraints regarding intraday liquidity, and the distribution of liquidity across entities and jurisdictions (Copeland, Duffie, and Yang, 2022, Correa, Du and Liao, 2022).

Figure 10: IOR, ONRRP and GCF Tsy Repo

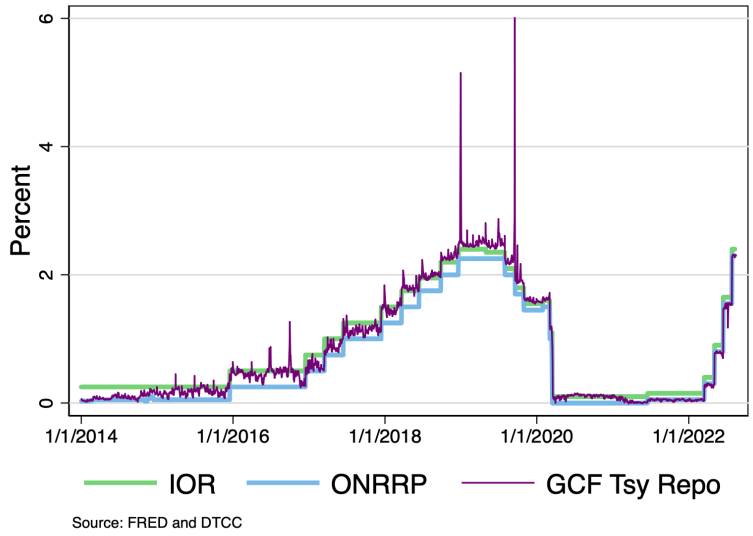
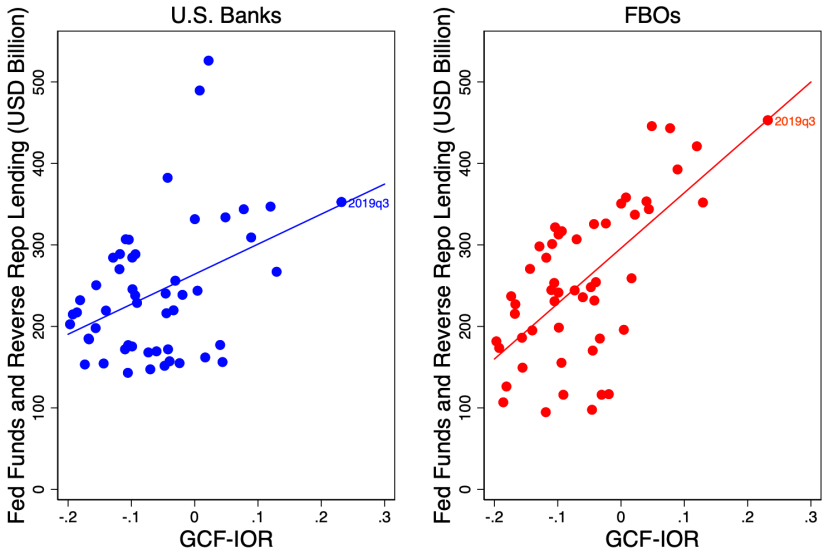


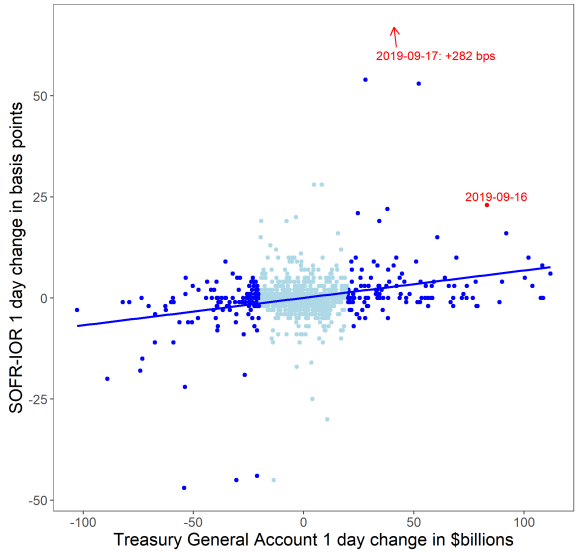
Figure 11: Repo Lending vs. GCF-IOR Spread



Liquidity Risk During QT (1)

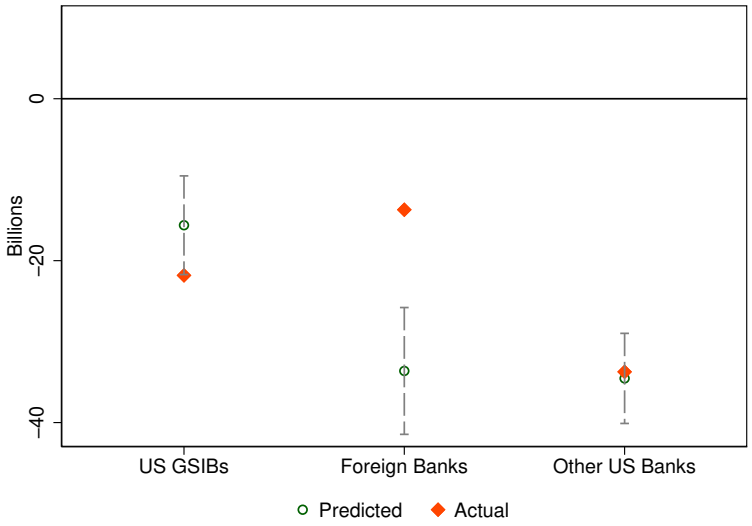
- When the aggregate reserve level becomes too low, banks may be reluctant to drain reserves further. The price of liquidity can spike in response to funding demand shocks.

Figure 12: Repo Spread vs. TGA Balance



Source: Correa, Du and Liao, 2022

Figure 13: Predicted vs. Actual Reserve Draining on September 16, 2019



Source: Correa, Du and Liao, 2022

Liquidity Risk During QT (2)

- Greater repo funding needs from dealers and levered investors to finance Treasury bonds during QT can add further strains to the liquidity condition of money and Treasury markets.

Figure 14: Primary Dealers' Treasury Position

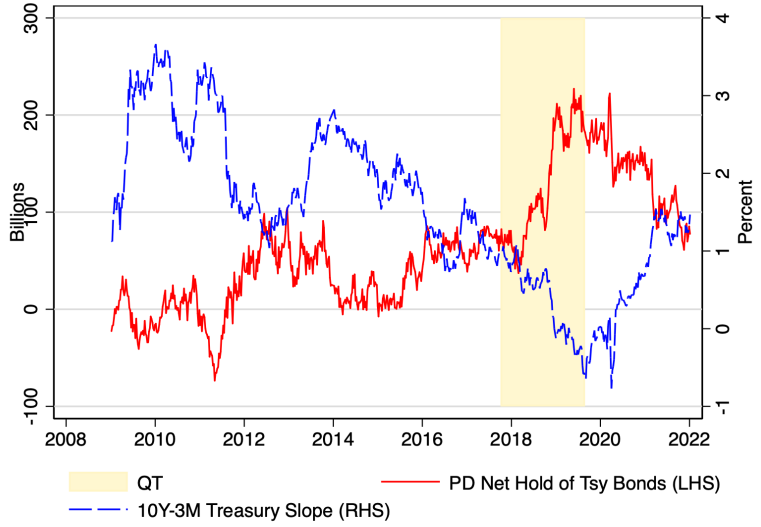
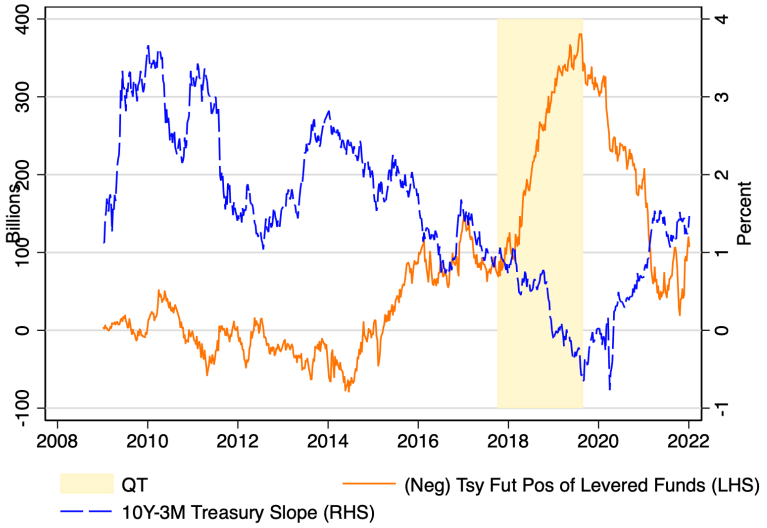


Figure 15: Implied Relative-Value Levered Investors' Treasury Position



Source: Du, Hébert and Li, 2022

Conclusion

- Thanks to the liquidity regulations, banks' own liquidity profile has improved considerably post-GFC.
- The center of the liquidity problem may no longer be banks' own liquidity mismatch, but rather banks' balance sheet constraints that limit their intermediation of others' liquidity needs.
  - In the ample/abundant reserves regime, money market rates have downside risks if the supply of reserves is greater than banks' balance sheet space to do the IOR arbitrage. Large take-ups in the ONRRP help relieve the balance sheet constraint.
  - In the scarce reserves regime, money market rates have upside risks if the supply of reserves is lower than banks' demand for reserves arising from regulations or risk management motives.
- The good news is that various intermediation spreads and bank activities help policymakers monitor potential liquidity excess and strains in real time.
- Understanding regulations and plumbing of financial markets is of first-order importance for monetary policy.