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HOW DO BANKS ACCOMMODATE HIGH-FREQUENCY LIQUIDITY DEMANDS?

- Suppose banks face a demand spike for short-term funding from their clients—e.g., hedge funds want to finance their Treasury holdings.
- Can accommodate one of two ways:
 - Matched-book: bank borrows in tri-party repo market (e.g., from a money fund) and on-lends to the hedge fund. This increases size of its B/S.
 - Reserve-draining: bank draws down on its existing stock of reserves. This keeps B/S size constant.
- Paper's main finding: in a world with binding leverage-ratio constraints (and generally ample reserves), reserve-draining approach plays an important role.



Figure 5: An illustration of different types of dollar intermediation



NICE EMPIRICAL DESIGN

- Look at daily data on intermediation spreads and quantities around quarter-ends.
- Basic idea: foreign banks cut back on intermediation, because their balance sheets are "snapshotted" on those days for leverage-ratio purposes. This leads to significant increases in various spreads (e.g., SOFR-IOR, GCF repo-triparty repo, CIP basis).
- U.S. G-SIBs by contrast are held to leverage ratios based on daily average B/S, not quarter-end, so they can take up some of the slack on quarter-ends. Question is, how do they do so: matched-book or reserve-draining?
- Key finding: as intermediation spreads increase on quarter-ends, U.S. G-SIBs reduce reserve balances by \$50B, increase lending in FX swap market by \$20B, and increase net repo lending (by reducing repo borrowing) by \$30B.
 - Implemented by the depository institution sub of G-SIB reducing its reserves to repo lend on internal basis to broker-dealer sub.
- Where do the reserves go? To smaller domestic banks, who appear to be passive.



WHY DOES THIS MATTER?

- Results suggest that leverage-ratio constraints impede matched-book type intermediation, potentially interfering with functioning of secured funding markets.
- But if reserves are ample, isn't reserve-draining intermediation a perfectly good substitute?
- However, "Reserves Were Not So Ample After All": Copeland-Duffie-Yang (2021).
 - See events of September 2019, March 2020.
 - Huge spikes in intermediation spreads, e.g., SOFR-IOR.
- How can reserves of \$1.4 trillion (September 2019 value) not be enough?
 - Role of various post-GFC liquidity rules and supervisory practices.
 - Not technically the LCR, which treats reserves and Treasuries the same.
 - But supervisory liquidity stress tests (CLAR)
 - And Resolution Liquidity Adequacy and Positioning (RLAP)
 - As well as enhanced supervisory focus on intraday liquidity risks.

A CONSTELLATION OF CONFLICTING POLICIES

Leverage ratio: constrains matched-book intermediation.

- And creates a host of other problems: e.g., in March 2020, dealer banks can't expand balance sheets to make markets in risk-free Treasury securities.
- Liquidity regulations: dramatically increases demand for reserves, makes it harder for banks to substitute towards reserve-draining intermediation.
- QE and other Fed balance-sheet expansions (e.g., central bank swap lines): these help with reserve scarcity. And logic of Friedman rule says there is much to commend an ample-reserves regime. But since reserves go in the denominator of leverage ratio, this can make the leverage ratio even more binding.



WHAT ARE POSSIBLE WAYS OUT OF THE BOX?

Defang the leverage ratio, i.e., make it less binding.

- By dialing back ratio requirement. Or excluding reserves (and Treasuries?) from denominator.
- Or dial up risk-based capital requirement, so it is more likely to bind. Ideally, put some nonzero (but smaller) risk weight on Treasuries.
- Important to ensure that total dollars of capital in the banking system don't fall.
- Fed standing repo facility: to help when reserves are scarce, as in e.g., Sep 2019 and March 2020.
 - Given leverage-ratio constraints, crucial for facility to have broad access—i.e., to non-banks.
 - If Fed lends only to banks, they may be unwilling to on-lend to others, given increase in B/S.
 - May also help reduce bank demand for reserves generally, if banks know they can easily monetize their Treasury holdings at the Fed intraday.
- Central clearing of Treasury repo: netting benefits reduce B/S bloat caused by matchedbook repo intermediation, makes it easier for banks to expand it in times of stress.
 - This is effectively happening with rapid growth of "sponsored" repo—itself a response to LR.
 - Banks sponsor their clients to clear with FICC, without clients having to meet all FICC membership obligations (e.g., fund contribution, loss mutualization).
 - Balances in this market currently in the \$250B range, peaked at over \$500B in March 2020.

