Money market funds and the pricing of near-money assets

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Disclaimer: The views expressed in this presentation are those of the speaker and do not necessarily represent the views of the Board of Governors of the Federal Reserve System.

Why do money market funds hold (lots) of assets with similar risk but different returns?

	Jan 2023		Jan 2019	
	Holdings ($B)	Yield (%)	Holdings ($B)	Yield (%)
Treasury bills	629.20	4.38	501.62	2.37
ON RRP	1,692.13	4.31	0.76	2.25
Private repo	750.17	4.31	948.93	2.53

This paper: Strategic tradeoff between holding bills and repo.

As fund market power increases in repo, repo decreases, repo rates rise, *bill yields fall.*

- Meanwhile, funds continue to hold bills as well as RRP because of illiquidity in bills.

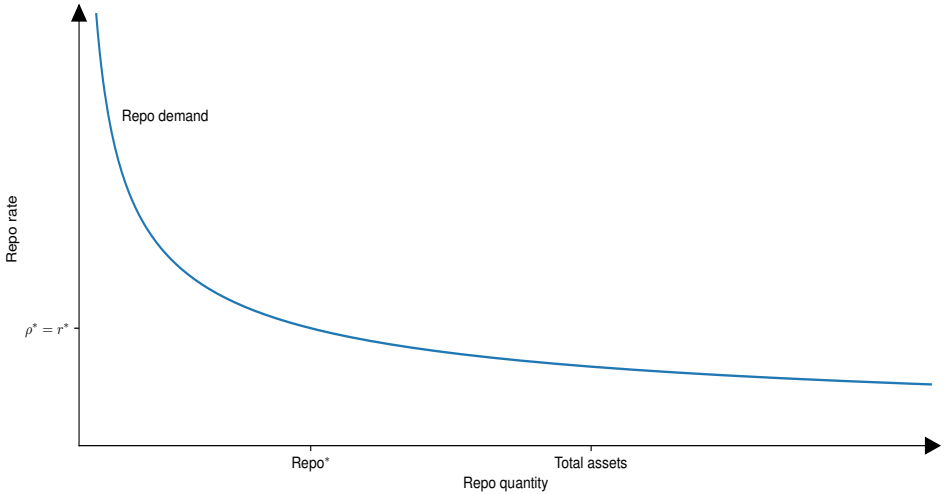
Present litany of empirical tests in two flavors:

- **Aggregate:** When less MMF cash goes to repo, Bills - RRP falls and Repo - Bills rises.
- **Micro:** Repo rates higher when funds have higher share of total bank repo, *lower* share of bills.

What I'm going to do today:

1. Do a simplified version of the model in figures and discuss a key assumption.
2. Talk about the aggregate results, make a suggestion on identification.

Basic insight is simple and general



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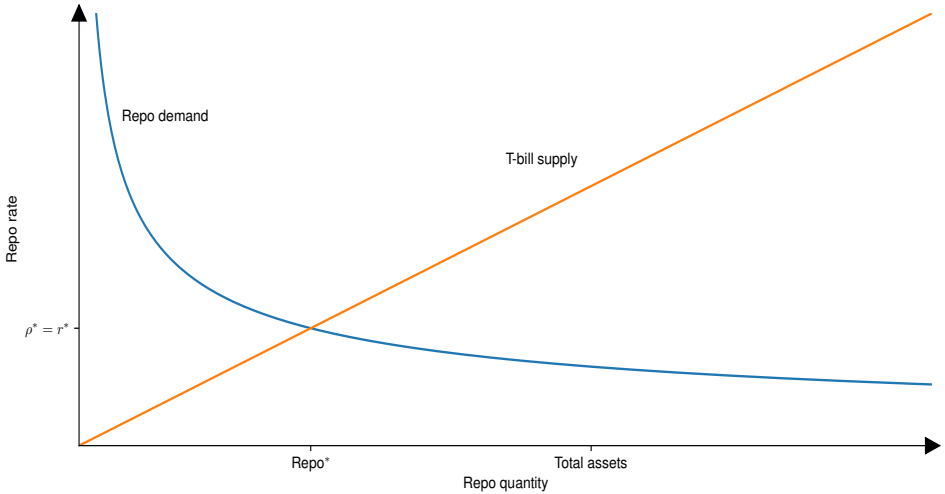

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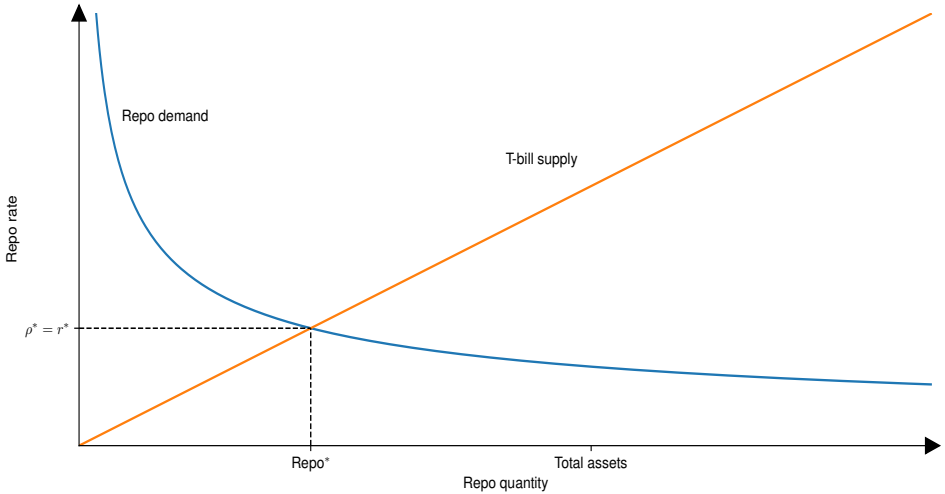

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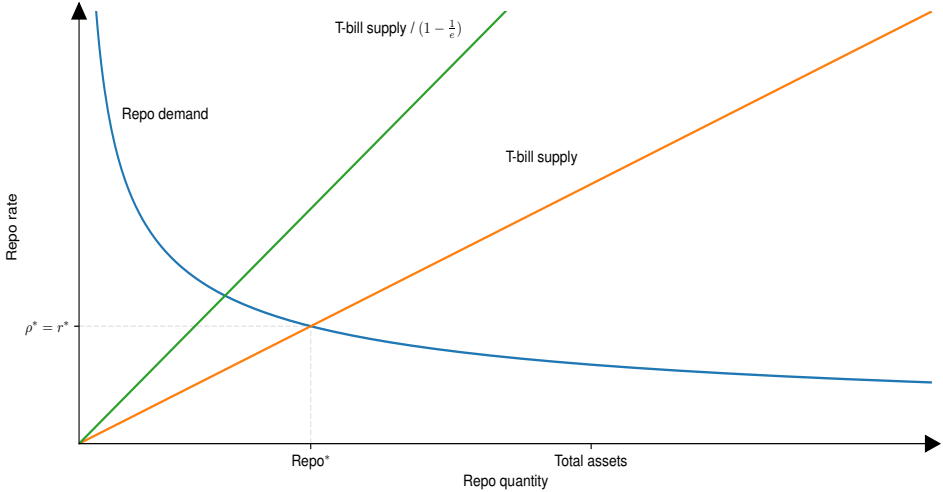

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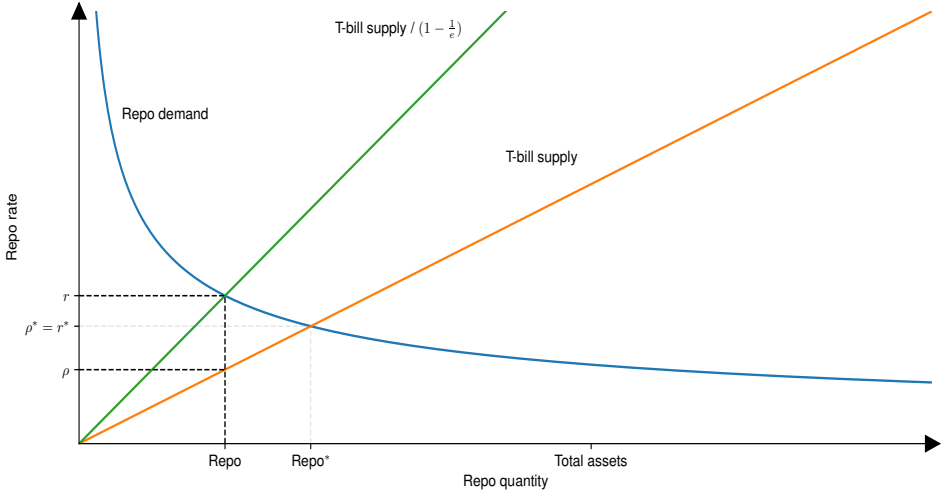
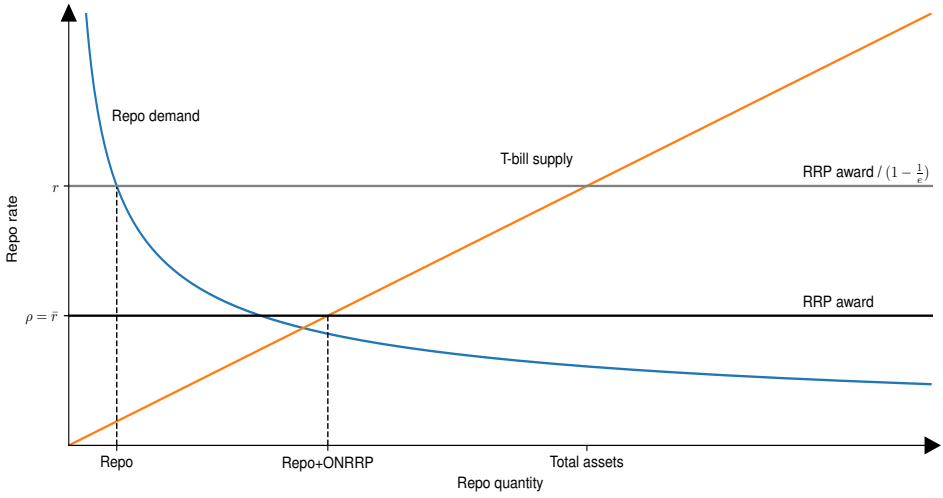


What about with the RRP facility? (My naive version)



It's *crucial* that bills and RRP are not perfect substitutes.

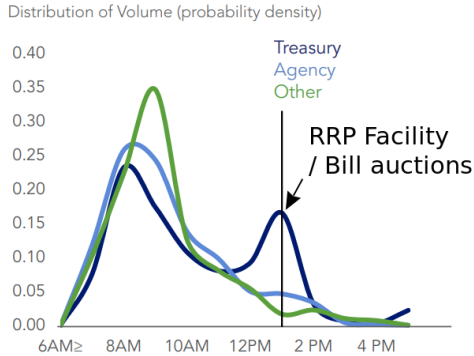
This is fine!

- Bills differ from RRP in maturity*, elasticity of supply, liquidity, and (sometimes) counterparty risk.
- Use Bloomberg Liquidity Index as motivation.
  - I'm a little leery of this measure...

Key variable is residual cash share:

$$1 - \frac{\text{Repo}}{\text{RRP} + \text{Repo} + \text{Bills}}$$

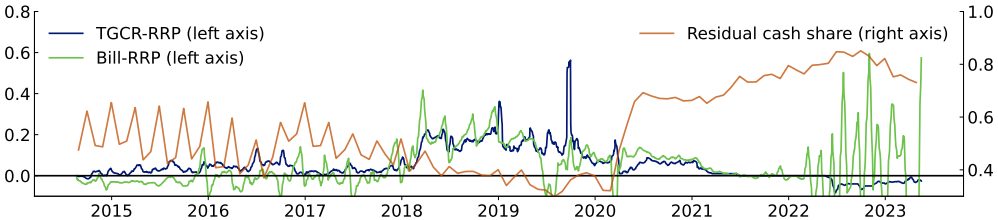
- Focus is funds have market power in repo.
- But also: Bill auctions and RRP later in day.
  - By 1PM >80% of tri-party transactions have taken place: Paddrik et al. (2021).



Note: The credit quality/liquidity of collateral play an important role in intraday trading behavior. This figure presents average hourly transaction volumes for overnight funding. Plot (a) presents the aggregate dollar volume (in billions of dollars) by type of collateral. Plot (b) presents the intraday probability density function per collateral group.

Sources: Authors' calculations, which use data provided by Bank of New York Mellon and the Federal Reserve Bank of New York.

Aggregate regressions: spreads on residual cash share

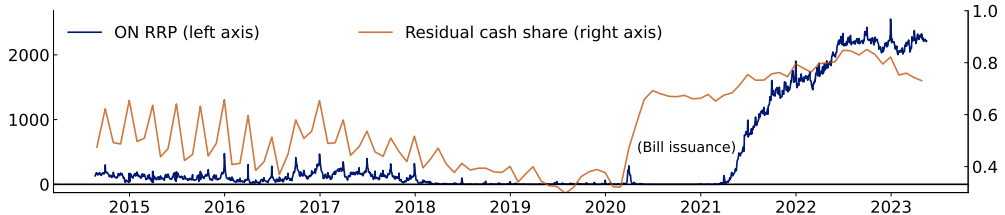


- **Along the channel the authors have in mind:** as concentration increases:

  MMFs restrict supply to repo $\Rightarrow$ higher repo rates (Bill-GC).
  $\Rightarrow$ higher residual cash share
  $\Rightarrow$ lower bill yields (Bill-RRP).

- Naive version: Regress Bill-GC (+) and Bill-RRP (-) on residual cash share.

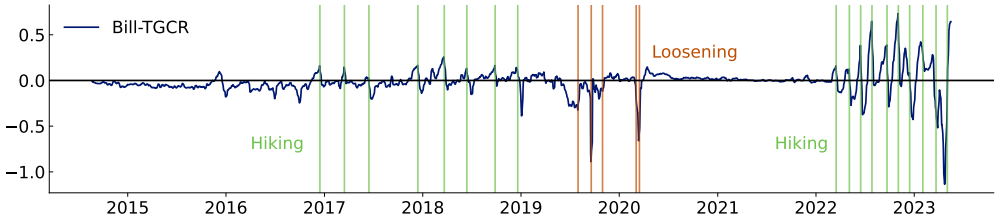
You can think think of some alternative reasons for this correlation:



Alternative channel: as demand for repo decreases, rates fall until they hit the RRP floor, at which point MMFs tilt to RRP, raising the liquid share.

- Problematic *because* MMFs are such large players.
- Residual cash share is highly correlated with RRP.
- **Represents the other side of the market clearing condition.**

Similar concerns for spreads between bills and repo:



A general grievance: T-bills and repo have different maturities.

- During periods of tightening, T-bill rates increase prior to hikes in anticipaion of higher rates.
- Overnight repo rate does not increase until the rate hike goes into effect.
- **Means this spread responds strongly to expected path of monetary policy.**

Authors' solution: MMF repo HHI as an instrument

Calculate this HHI on the fund level.

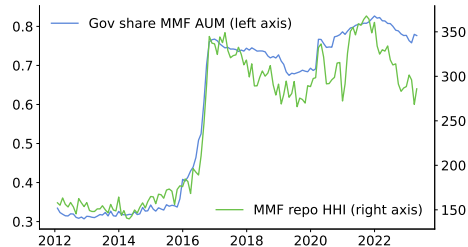
- **Problem:** fund-level HHI highly correlated with government fund share.
  - Post-reform: t-stat ≈ 7 and $R^2 = 0.41\%$.
- Likely reflects macro factors.

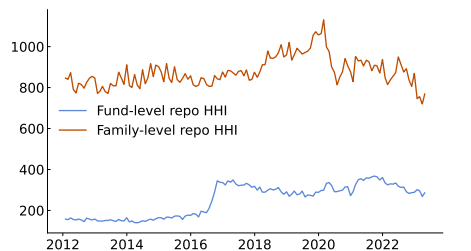
Solution: family-level HHIs.

- MMFs make repo decisions on this level.
- Allows funds to pool cash and reallocate if there are late-day redemptions.
- Higher HHI, very different time-series.
  - Might be useful for micro-level results as well.

Alternative: separate HHI for gov and prime.

- If model is correct, prime HHI should have much smaller effect.





Conclusion

This paper does ***a lot!***

- Extends results on imperfect competition in repo to effects on other assts.
- Presents a new model of strategic interactions between repo and bills.
- Explores tradeoffs between three crucial asset classes.
- Produces both aggregate and mirco-level results.
- Contributes to important debates about monetary policy implementation.

I have discussed ***a little,*** encourage others to read for the rest, and look forward to seeing more!