

Rewiring Repo

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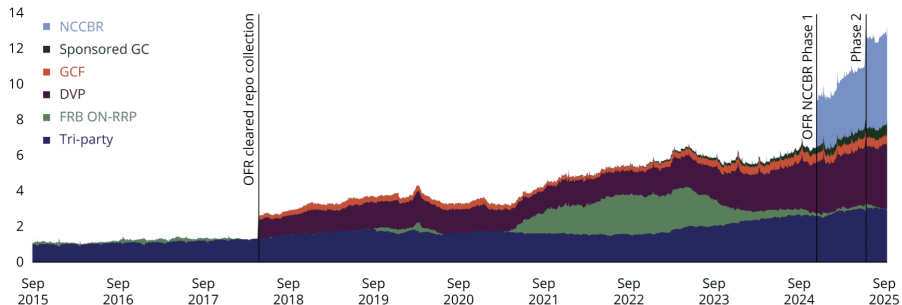
Columbia Business School

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The Repo Market is Big

- 2025 Q3: \$12.6 trillion in daily exposure (OFR estimates)
- Compare: Fed balance sheet size: \$6.6 trillion
- Compare: Commercial bank balance sheet size: about \$25 trillion

Figure 1. Outstanding Repo Exposures by Segment (\$ trillions)

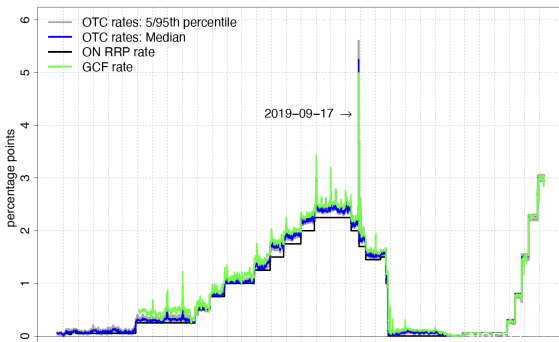


Note: Federal holidays and Good Friday religious observances removed. FRB ON-RRP: Federal Reserve Overnight Reverse Repo facility. NCCBR: non-centrally cleared bilateral repo.

The Repo Market is Key in Monetary Policy Transmission

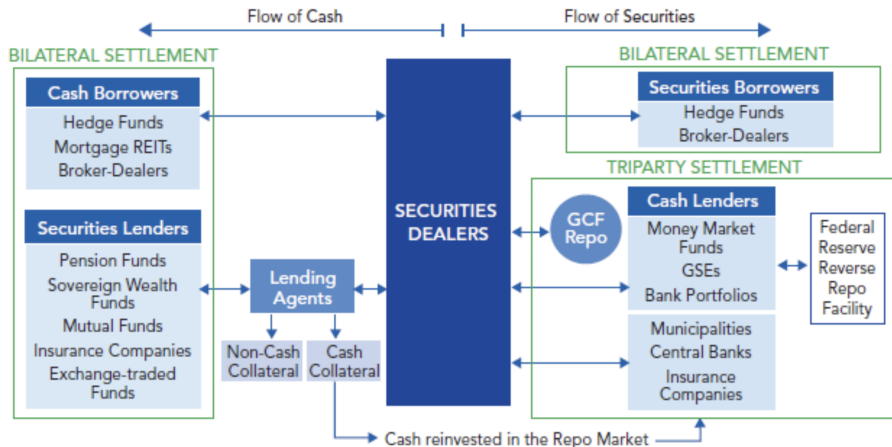
- The Fed sets Interest on Reserves for banks, but do banks transmit these rates to the economy?
- The Secured Overnight Funding Rate (SOFR) is based on repo rates
- SOFR replaced LIBOR as the primary interest rate benchmark
- Hence, repo market dysfunction are concerning!

Figure 9: Distribution of government repo rates



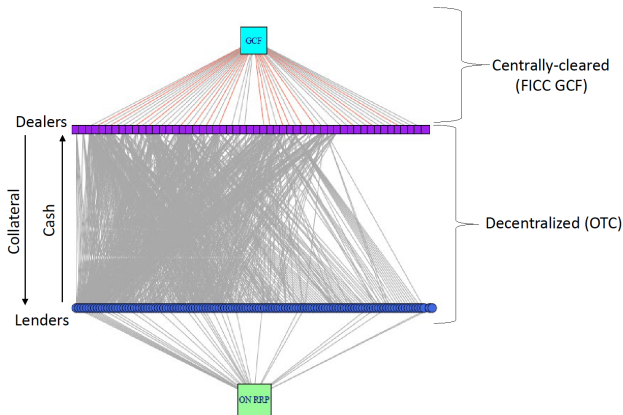
Understanding Repo Market Structure is Important

- Very roughly: Hedge Funds $\leftarrow$ Dealers $\leftarrow$ MMF



This Paper focuses on the Tri-Party Repo Market

- Dealers trade in a centrally cleared market with each other
 - Demand from borrowers in the bilateral market, e.g., hedge funds, are collapsed with the dealers
- Dealers borrow from lenders, e.g., MMFs, in an OTC market
 - Lenders can also lend to the Fed's ON RRP



Main Results

- ① Model of the inter-dealer and dealer-lender OTC market
 - ② Empirical decomposition and analysis of dealer demand and lender supply
 - ③ Counterfactuals, e.g., Standing Repo Facility (SRF) provides liquidity buffer but crowds out dealer-lender OTC relationships
- Overall: Centrally-clearing in the inter-dealer market and dealers' strategic behaviour in the OTC market influence the propagation of supply and demand shocks and the effect of Fed facilities
 - Rich set of insightful results (59 pages) - please take a look!

- Important questions on an important market
- Rich set of interesting theoretical and empirical findings
- Policy-relevant implications
- Some thoughts:
 - 1 Market Structure Determinants and Bargaining Power
 - 2 Isolating Demand and Supply
 - 3 Rate Dispersion and Sponsored Repo

1. Market Structure Determinants and Bargaining Power

- Generally, a key driver of OTC prices is how many trading relationships are formed, which affects agents' bargaining power
- True in the repo market as well: lenders differ in their number of links

	mean	sd	5	25	50	75	95
Lending (\$mln)	4,510	12,983	6	77	333	1,875	29,936
Number of dealers	5	6	1	1	3	7	20

- Lenders with more relationships obtain better repo rates

	(1)	(2)	(3)	(4)
		Residual Borrow Rates		
Number of Dealers	0.227** [0.089]	0.203** [0.093]	0.272*** [0.100]	0.249** [0.106]

Eisenschmidt, Ma, and Zhang (2025) using European repo market data

- Why don't lenders form more relationships?

1. Market Structure Determinants and Bargaining Power

- In the model, the OTC network structure is exogenous and lenders' supply elasticity does not depend on the number of dealer relationships
- Empirically, supply elasticity is common across lenders (with time-invariant lender FE)
- A pity given the focus on repo market structure
- Especially because counterfactuals could change the OTC market structure, which in turn affects distribution of rates and the spillover of shocks
- Suggest to allow for some choice over relationship formation in the model (even with simplifications) and variation in network density and bargaining power in the empirics

2. Isolating Demand and Supply

- Isolate demand and supply shocks using dealer-time and lender-time FEs:

$$\Delta q_{ikt} = \delta_{it} + \lambda_{kt} + \epsilon_{ikt}, \quad \forall i, k \in E,$$

- Follows Khwaja Mian 2008 intuition, but also subject to its issues
- Example
 - Dealer borrows from MMF A and MMF B at the same time
 - MMF A lends less by 3 units, MMF B lends less by 2 unit
 - Interpret the difference = $3 - 2 = 1$ as lender supply shock
 - But the 2 units could also come from the dealer OR a *common* supply shock affecting both MMF A and B

2. Isolating Demand and Supply

- Current approach uncovers *relative* supply and demand shocks
- Less suitable for uncovering *common* supply shocks across lenders and *common* demand shocks across dealers
- These common shocks are bigger and more market-wide shocks – equally if not more important
- Suggest to try it the IO way: trace out the demand curve using actual supply shocks, trace out the supply curve using demand shocks

3. Counterfactuals: Rate Dispersion

- Current welfare definition: lender surplus - dealer borrowing cost
- What would a social planner do? Would she want to optimize the same welfare?
- It depends on the role of the repo market is - is it just to make dealers and lenders well off?
- E.g., if one goal is monetary policy transmission, then another criterion would be to minimize unequal transmission, i.e., rate dispersion

SECURED OVERNIGHT FINANCING RATE DATA

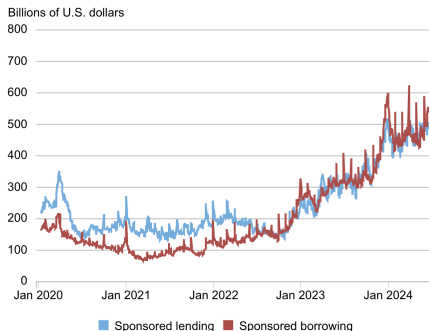
[Chart](#) | [Historical Search](#)

DATE	RATE (%)	1ST PERCENTILE (%)	25TH PERCENTILE (%)	75TH PERCENTILE (%)	99TH PERCENTILE (%)
02/17	3.71	3.65	3.68	3.78	3.89
02/13	3.66	3.61	3.64	3.72	3.75

- Suggest to compute dispersion in repo rates as an additional outcome variable under different counterfactual scenarios

3. Counterfactuals: Sponsored Repo

- Currently consider the absence of inter-dealer central clearing as a counterfactual
- But what if OTC lenders (and borrowers) had direct access to inter-dealer central clearing? This would be similar to sponsored repo
 - Would rate dispersion drop?
 - Would demand and supply shocks be more “diversified away” but more systematic?



Conclusion

- The repo market is an important market that is not well understood
- This paper provides a rich set of insights on how tri-party repo market structure affects shock transmission and Fed policies
- There is a lot more in the paper - do take a look!
- Suggestions
 - ① Allow for more flexibility in the choice of market structure + variation in lender market power
 - ② Better isolate demand and supply shocks
 - ③ Consider rate dispersion and sponsored repo