The Central Bank's Balance Sheet and Treasury Market Disruptions

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This Paper

- This paper: a unified framework connecting and rationalizing recent episodes in Treasury and repo markets
  - Treasuries held by the Fed, hedge funds, and deposit-taking banks
  - Hedge funds funded by repos from households/MMFs and banks intermediated by dealers

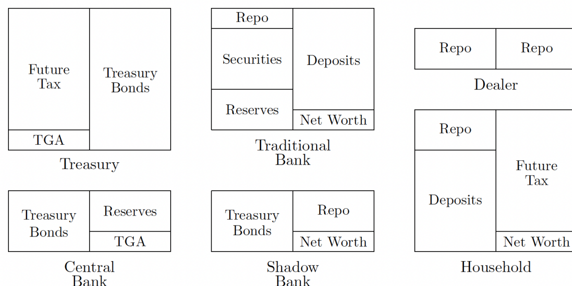


Figure 1: Chart of Sectors' Balance Sheets

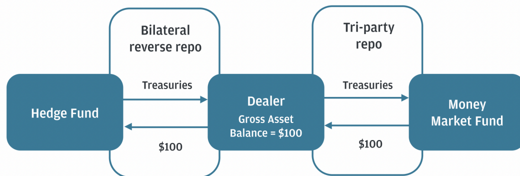
Realistic inputs + Many Interesting Results

- Lots of interesting findings, e.g.
  1. Both sides of central banks' balance sheets matter
     - $\uparrow$ Fed Treasuries, $\downarrow$ repo demand by shadow banks, $\downarrow$ repo spikes
     - $\uparrow$ Reserves, either $\uparrow$ reserves to lend out as repo when reserves are scarce, OR $\downarrow$ repos because reserves crowd out balance sheet space
     - Net effect of QE/QT depends!
  2. Necessary conditions for repo market spikes
  3. Treasury versus repo market disruption depends on duration of strains
- A fundamental paper that connects the dots + yields novel predictions

Comment 1: Reframe Conditions for Repo Market Spikes

- The paper provides necessary conditions for repo market spikes when dealer capacity is constrained:
  1. Bank balance sheet costs
  2. Bank reserve requirements
  3. An RRP Facility
- But does that mean we can get rid of repo spikes by simply removing the RRP Facility? There were also repo spikes before the RRP...

Comment 1: Reframe Conditions for Repo Market Spikes



Source: J.P. Morgan

- What the model actually shows: when dealers intermediation capacity is shocked, the **bilateral** repo rate from dealers to shadow banks may rise above the IOR if there is an RRP Facility.
- This is actually really cool!
  - The ON RRP was introduced to set a floor on the triparty repo rate
  - A subsidized price floor in the triparty repo market distorts "upstream" prices to trigger rate spikes in the "downstream" bilateral repo market
- Spikes in the **tri-party repo rate** from MMFs to dealers may be caused by different reasons not necessarily related to the RRP

Comment 2: Who are the Marginal Investors in Treasuries

- Model assumes that Treasuries are held either by the Fed, banks, or hedge funds
- Implicitly, this assumes that Treasuries the Fed sells have to be bought by hedge funds or banks

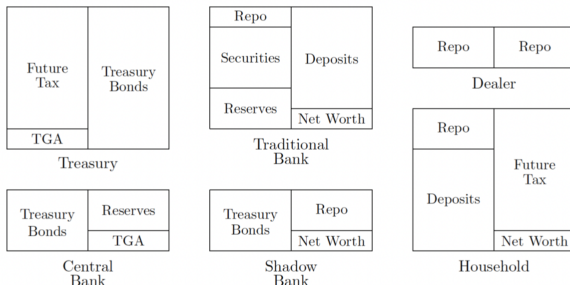


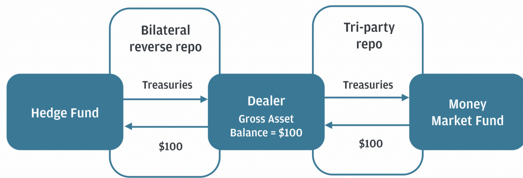
Figure 1: Chart of Sectors' Balance Sheets

Comment 2: Who are the Marginal Investors in Treasuries

- In practice, there are many other institutions that hold US Treasuries. For 2023Q3, e.g.,
  - Insurance companies + Pension funds: 4.0%
  - Mutual funds + ETFs: 2.8%
  - Foreign investors: 29%
- This affects the mapping of the model predictions to the data, e.g.,
  - March 2020 versus September 2019 is interpreted as driven by difference in shock duration
  - But much more selling of Treasuries by non-banks like mutual funds in March 2020 than in September 2019
- For the model's results, what matters most is the extent Treasuries sold by the Fed are absorbed by non-repo and non-deposits funded institutions → suggest to allow for this margin

Comment 3: Repo Market Design

- Key friction: repos from households/MMFs are intermediated through balance sheets of constrained dealers banks to shadow banks that hold Treasuries



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- Do repo markets have to function in this way? What if we removed the dealer?

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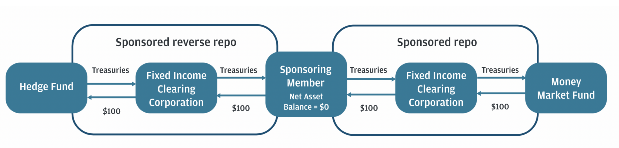

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- This is already being done through sponsored repos

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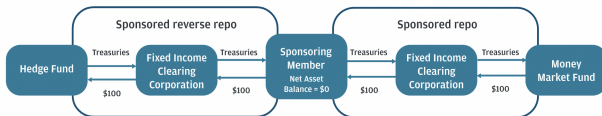

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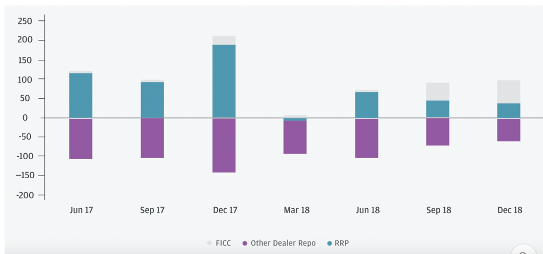
- This is already being done through sponsored repos
- Volume spikes up at quarter-ends when dealers are constrained



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Comment 3: Repo Market Design

- An on-going discussion about how repo markets should be designed
- Sponsored repos could help reduce dealer's market power and trading frictions in OTC repo markets (Eisenschmidt, Ma, and Zhang 23)
- This paper could contribute by showing how sponsored repo affects the fragility in repo and Treasury markets
  - sponsored repo = direct MMF to hedge fund repos
  - More Treasuries held by shadow banks?
  - Reduce effect of dealer balance sheet shocks to repo and Treasury markets?

Conclusion

- Great paper!
- A much-needed framework for the interaction between banks, dealers, hedge funds, and investors to affect Treasury and repo markets
- Important lesson: considering both sides of balance sheets matter
- Suggestions
  - Reframe the discussion on repo spikes
  - Consider Treasuries bought by non-repo-funded non-banks
  - Consider the effect of non-dealer-intermediated repo