Discussion of "Stop Believing in Reserves"

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# Motivation: Why Studying Monetary Policy Transmission

From ChatGPT:

- Understanding economic impacts of monetary policies.
  - ► ... influence *borrowing costs*, impact *consumer and business spending*, and ultimately affect the *output of the economy*.

- Policy implementation and communication.
  - ► Help central banks in effectively communicating their policy decisions and expectations to market participants.

- Financial stability considerations
  - ► ... impact overall risk appetite in financial markets.

- International spillovers
  - ► promote coordination and cooperation among central banks.

Summary

- Where does this paper fits in? Understanding the economic impacts of monetary policies in the post-crisis ample-reserve framework.

- A two-period equilibrium model that has rich descriptions of reality:
  - Agents: banks, MMF, households, firms, broker-dealers, central bank, and the government.
  - Markets: repo market, government bond market, bank deposit market, and MMF deposit market.
  - Policy instruments: IOER, QE/QT, and RRP.

- Questions to answer:
  - How do various policies transmit to different markets?
  - How large the Fed balance sheet should be maintain the ample-reserve regime?
  - What is the role of the RRP facility?

Overview of the Model
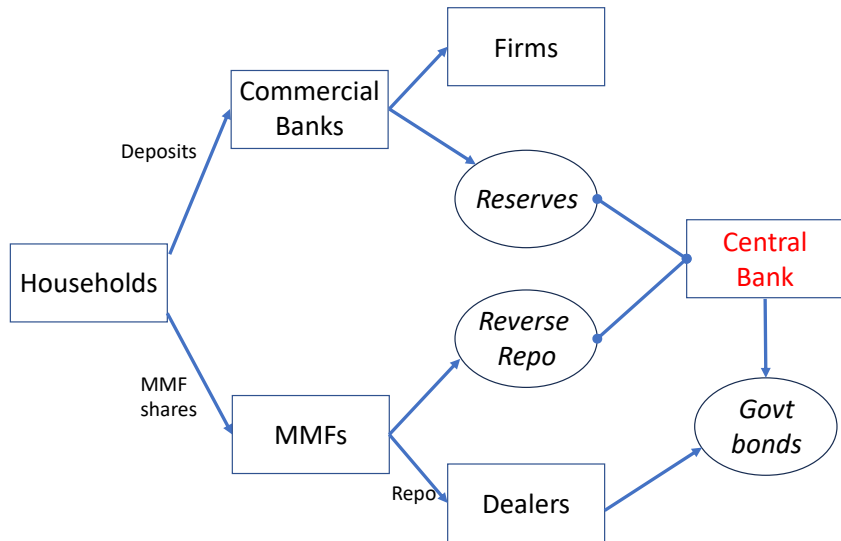
Model Setup

- One period, two times, $t = 1$ and $t = 2$.

- Both government debt and reserves can be converted into "commodity money" for consumption at $t = 2$ (think as continuation value).

- Optimizing agents: households, commercial banks, MMF
  - Household preference: $u(\text{firm product}) + \text{commodity money consumption}$
  - Commercial banks and MMF are maximizing profits.

- Policies: IOER, RRP rate, balance sheet operations (QE/QT).

- Frictions:
  - Bank lending is subject to a convex cost $\chi(\ell)$ for ℓ amount of loans.
  - Bank and MMFs have linear balance sheet cost k^b and k^m (social costs)
  - Banks and households bargain over deposit surplus.

Mechanism: interest rate policy

- Higher interest rate

$\rightarrow$ banks get higher return on reserves

$\rightarrow$ reduced lending (with smaller marginal cost) and partial passthrough to a higher deposit rate

$\rightarrow$ households increase bank deposit holding but reduce MMF share holding

$\rightarrow$ less repo financing

$\rightarrow$ higher equilibrium govt bond yield.

- The same mechanism regardless of whether reserve is abundant or not.

Mechanism: reverse repo rate

Case 1: RRP is slack (RRP rate < repo rate):

- no effect.

Case 2: RRP is tight (RRP rate = repo rate):

- higher reverse repo rate
- $\rightarrow$ higher repo rate due to perfect substitution
- $\rightarrow$ higher govt bond yield and also higher MMF rate
- $\rightarrow$ households increase MMF holding but reduce bank deposit holding
- $\rightarrow$ banks reduce lending.

Mechanism: balance sheet operations

- Larger Fed holding of Tsy (QE)

$\rightarrow$ reduced demand of financing via repo

$\rightarrow$ lower MMF yield and outflows of funds from MMF

$\rightarrow$ inflows of bank deposits that drive lower deposit rate

$\rightarrow$ lower loan rate and expanded bank lending.

- Silent on reserve side. "Stop believing in reserves"?
  - ▶ The above mechanism is not about expansion of reserves, but purchase of Treasury securities.
  - ▶ In the model, the Fed can "costless produce general good at no cost". Reserves are backed by this "production technology".
  - ▶ How to account for the balance sheet identity: more Treasuries on assets, more reserves on liability.

Comment 1: Model Structure

- Non-banks are not allowed to hold Treasuries in the model.
  - However, Treasuries are critical for liquidity provision and crowds out bank deposits (Li, Ma, and Zhao 2023).
  - See the aggregate estimation of substitution among Treasuries, bank deposits, and shadow bank deposits in Krishanmurthy and Li (2022).

- Banking regulation is missing in the model.
  - Critical for understanding post-crisis monetary transmission to various markets. Balance sheet costs matter for Treasury pricing (Du, Heber, and Li, 2022).
  - In crises, bank regulation is key for monetary passthrough (Blank, Stein, Hanson, and Sunderam 2020)
  - Liquidity regulation drives up bank demand of public liquidity (Bech and Keister 2017).

- The model can treat broker-dealers and MMF as one sector absent from broker-dealer frictions.
  - In reality, MMF directly holds T-bills.

Comment 2: Alternative Demand of Treasuries and the Role of Repo

- In the model: total Treasury supply = Fed holding + broker-dealer holding (financed by repo).

- Given Treasury supply, one dollar reduction of Fed holding implies one dollar needed for repo!

- This is unrealistic. Broker-dealer total Treasury holding is about 200 billion v.s. 18 trillion marketable Treasuries (excluding Fed holding).

- Stress in the repo market critically depends on who else demand for Treasuries.

Comment 2: Alternative Demand of Treasuries and the Role of Repo

- Here is a rough decomposition of Treasury holdings for 2020 (Jansen, Li, and Lukas 2023):
  - ▶ Foreign investors: 30%
  - ▶ Fed: 30%
  - ▶ MMF: 10%
  - ▶ Pension funds: 6%
  - ▶ Insurance companies: 6%
  - ▶ Mutual funds: 5%
  - ▶ Commercial banks: 6%
  - ▶ Broker dealers: 1%
  - ▶ Rest: 6%

- MMF holding/(total Tsy - Fed holding) is about 14%. Repo market is NOT the dominant form of financing for holding Treasuries.

Comment 3: Quantification

- Model parameters: (1) policy-related; (2) preference related.

- Currently, all of these parameters are targeted to quantities and rates based on data from March 2022 to October 2022.

- Problem: preferences are stable and should not be inferred from a short-horizon of data.
  - Households utility function.
  - Bank operational cost
  - Bank market power

- Suggestion: use a much longer horizon to infer preference parameters.

Summary

- Understanding monetary policy transmission is critical for central banks and the government.

- This paper provides a framework to understand the transmission, particularly focused on balance sheet operations and the repo market.

- Suggestions:
  - Clarify the key mechanism and highlight the main contribution.
  - Adjust model structure to reflect regulation and non-financial sector demand of Treasuries.
  - Better quantification via matching moments based on longer horizons.