Discussion of:

“Trade Dynamics in the Market for Federal Funds”

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The views expressed herein are my own and do not necessarily reflect those of the Federal Reserve Bank of New York or the Federal Reserve System.
Why care about the fed funds market?

- An interesting example of an over-the-counter market
  - might be useful for understanding OTC markets in general
  - unusually good data is available (for an OTC market)

*In addition:*

- The Federal Reserve implements monetary policy by intervening in this market
  - FOMC chooses an interest rate it wishes to prevail in this market
  - Open Market Desk needs to implement this decision
- Effective implementation requires understanding how this market works
The “standard” view of the fed funds market

- Banks hold reserve balances to meet requirements, make payments
- Suppose there is a frictionless interbank market
  - each bank chooses \( R_j \), depending on the market interest rate \( i \)
- Aggregate individual demands to obtain total demand for reserves
- Open Market Desk uses OMOs to change supply of reserves
  - aim to hit a “target supply”
This model has served policymakers reasonably well.
We know some aspects of reality are missing, of course

example 1: dispersion of rates on any given day
We know some aspects of reality are missing, of course

example 2: dynamics of rates within a day

We know some aspects of reality are missing, of course.

Interesting to try to understand/model these features:
- studying this market might also teach us about modeling trading frictions
- … but policy makers seemed to have a good working model:
  - could anticipate the effects of different policy actions
  - knew how to achieve desired outcomes in this market
Current situation

- The market has changed dramatically since Sept. 2008
  - importance of trade frictions has become very evident
- Reason 1: counterparty credit risk became a larger concern
- Reason 2: changes in Fed policy, balance sheet
  - facilities and asset purchases have greatly increased reserve balances
    - August 2008: $12 billion
    - August 2010: $1 trillion (increased more than 80-fold)
  - in addition, Fed began paying interest on reserve balances
The standard model has become less useful

- “Puzzle”: Fed pays 0.25% on reserves held by depository institutions
  - arbitrage should imply a market rate of at least 0.25%
  - average market rate has ranged between 0.12% and 0.20%
Dispersion of rates within a day has also increased.

Policymakers no longer have a good working model of this market.
Why it matters

- Suppose the Fed were to raise the interest rate it pays to 1%
- What would happen to the market interest rate?
  - between 0.88% and 0.95%? (constant spread)
  - between 0.50% and 0.75%? (constant ratio)
- This is an critical question for the “exit strategy”
  - when the FOMC decides to raise the target interest rate …
  - … how should this be done?
- Difficult to answer without a good model
Afonso-Lagos

- Paper provides the first model of the fed funds market that takes trading frictions seriously

- Setup is fairly natural
  - decentralized trade
  - friction = takes time to find a counterparty
  - Nash bargaining within a match
  - some initial distribution of reserves across banks

- Solving the model (rigorously) is hard work
For the baseline case of identical banks, solution is clear & intuitive

- banks exit a match with the same reserve position

Captures many things that are missing from the standard model

- dispersion of interest rates, intraday dynamics, intermediation

Extensions: introduce ex ante heterogeneity

- important for many reasons

- large vs. small banks; “natural” lenders and borrowers; banks vs. other participants (GSEs)

- work in progress; seems promising
Comments
(1) Credit risk

- What generates the dispersion of interest rates in the data?
  - model: result of idiosyncratic matches, heterogeneous histories

- Some argue this dispersion actually reflects credit risk
  - lenders demand a risk premium if loan may not be repaid

- How can we tell which mechanism is more important in reality?
  - I think the paper has it right
  - banks do not make “risky” fed funds loans

- Important to have a convincing justification for the basic approach
(2) Credit risk (part b)

- Even if no risky loans are made, credit risk may still be important.

- Participants set restrictions on who they will lend to and how much.
  - These restrictions create at least some of the trading frictions.
  - Need to find a counterparty who is willing to lend to you.

- Could/should this feature be incorporated into the model?
  - Think of credit limits as exogenously specified.
  - Exercise: what happens when credit limits are cut?
  - Is this the same as changing alpha? Or different?
(3) Imperfect arbitrage

- Paper talks about “intermediation”
  - a bank may both borrow and lend over the course of a day
- Can also think of this activity as arbitrage
  - why would a bank with high balances borrow more of them?
  - it might be able to lend the funds later on at a higher interest rate
- Arbitrage here is *imperfect* because of the trading frictions
  - arbitrage opportunities exist, but are difficult to act on
- Model should be able to replicate the “puzzle”:
  - market interest rate < interest rate paid by Fed
(4) What I would like to see

- A quantitative model for policy analysis
- Requires solving the model with a fair amount of heterogeneity, but
  - reasonably good data available for calibrating parameters
  - … and for testing the implications of the model
  - very different policy regimes will also be a good test of the model
- Answer some pressing policy questions:
  - what is the relationship between IOR and market interest rates?
  - what is the most effective way to steer interest rates in this market?