Precautionary Reserves and the Interbank Market

Ashcraft, McAndrews and Skeie

38th Konstanz Seminar

Discussed by Valeriya Dinger
Idea

• What is the paper about?

<table>
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<th>Precautionary reserves</th>
<th>Interbank market</th>
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• Ashcraft, McAndrews and Skeie employ the concept of precautionary reserves in constructing a theoretical model that explains a number of key stylized facts about fed funds market

• The model is based on frictions of small banks’ fed funds market participation
Earlier literature

• Earlier studies have modeled banks’ fed funds market behavior with mandatory reserve requirements

• Furfine (2000) introduces payment shocks into the analysis

• The recent literature concentrates on:
  - risk aversion (Furfine, 2001; Ashcraft and Bleakley, 2006)
  - search frictions (Ashcarft and Duffie, 2007)
  - timing frictions (synchronization) (McAndrews, 2002)
Background

• Key facts about the fed funds market:
  ▪ Small banks hold large excess reserves overnight
  ▪ Small banks lend large amounts to large banks overnight
  ▪ Small banks lend smaller proportions during the day
  ▪ Fed funds lending is huge relative to bank reserves
  ▪ High fed funds rate volatility in the late afternoon

• The model explains all these by introducing a single friction in the fed funds market
Key assumptions

• Payment shocks at 3 pm and 6 pm

• The assumed friction of the fed funds market:

- Small banks only lend at 3 pm and neither lend nor borrow at 6 pm.
Model

• Bank optimization problem

• Banks define their optimal holdings of precautionary reserves at t=6 pm are defined (to avoid discount window borrowing)

• Large banks know t=3 pm is the last chance to borrow from small banks and adjust their t=3 pm borrowing accordingly

• Small banks know they will not trade at t=6 pm and behave accordingly at t=3 pm
Results

- Small banks hold large excess reserves overnight
- Small banks lend large amounts to large banks overnight
- Small banks lend smaller proportions during the day
- High fed funds rate volatility in the late afternoon
- Fed funds lending is huge relative to bank reserves
The friction

• The paper motivates the friction with 3 key observations:
  - Small banks **borrow** less than large banks in the afternoon (stylized at 3pm)
  - Small bank **borrow** much less than large banks shortly before the market closes (stylized 6pm)
  - Small bank **lend** much less than large banks shortly before the market closes (stylized 6pm)
The friction …

• Do these facts represent a friction or are themselves the results of other market frictions

• A deeper discussion of the origin of these observed features of small banks’ market participation is needed

• In particular, why do small banks behave different from large banks in the late afternoon?
  ▪ higher perceived credit risk
  ▪ fixed costs of late market participation
  ▪ cooperation with correspondent banks
Minor comments

• A few times in the paper “size” is not actual banks size (total assets) but is proxied by:
  - the percentile of average send orders
  - the max t=6 pm payment shock size

• These are reasonable proxies but may confuse terminology: a ”small” bank may actually be a large one that does not exclusively rely on the federal payment system (although Fedwire is a major system but private alternatives exist: CHIPS)
...minor comments

- $F_3^s > M_3^s + M_3^l$ can partially explain why fed funds overnight lending can be multiples of the amount of aggregate reserve balances

- $F_3^s > M_3^s + M_3^l$ is derived by negative $M_3^l$

- The question is: is $M_3^s$ high enough to justify the $2.3$ trill daily fed funds lending relative to the $17.3$ bill average aggregate reserves
...Fed funds borrowing

Probability of borrowing for Smallest Banks

Probability of borrowing for Largest Banks
...Fed funds lending