

# **Precautionary Reserves and the Interbank Market**

**Ashcraft, McAndrews and Skeie**

38th Konstanz Seminar

**Discussed by Valeriya Dinger**

# Idea

- What is the paper about?

## Precautionary reserves

## Interbank market

- 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

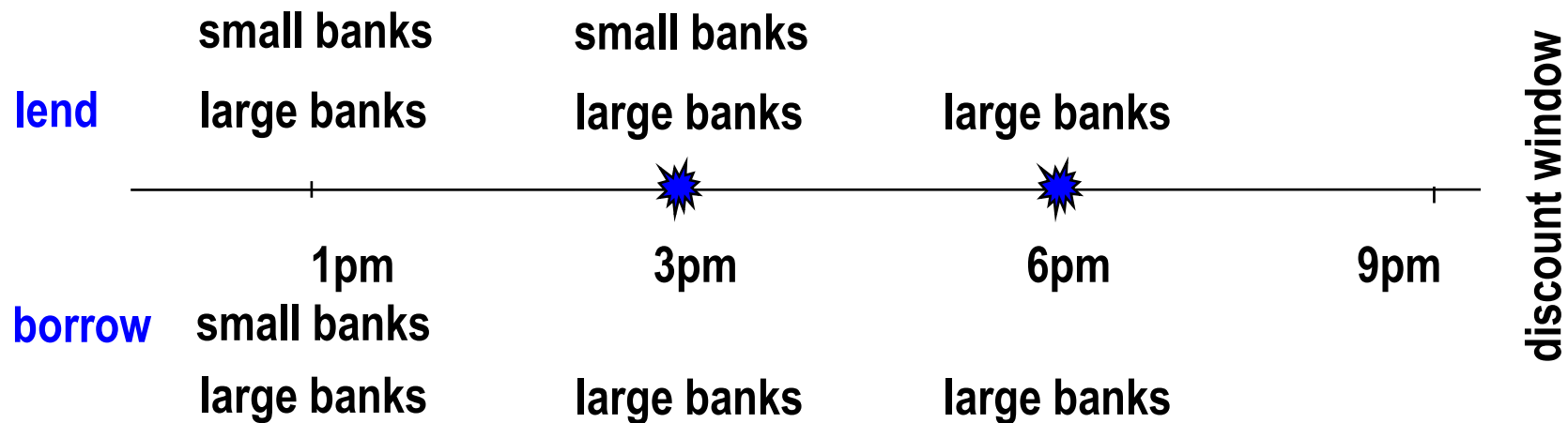
- Earlier studies have modeled banks' fed funds market behavior with mandatory reserve requirements
- Furfine (2000) introduces payment shocks into the analysis
- The recent literature concentrates on:
  - risk aversion (Furfine, 2001; Ashcraft and Bleakley, 2006)
  - search frictions (Ashcraft and Duffie, 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 3pm 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 ...

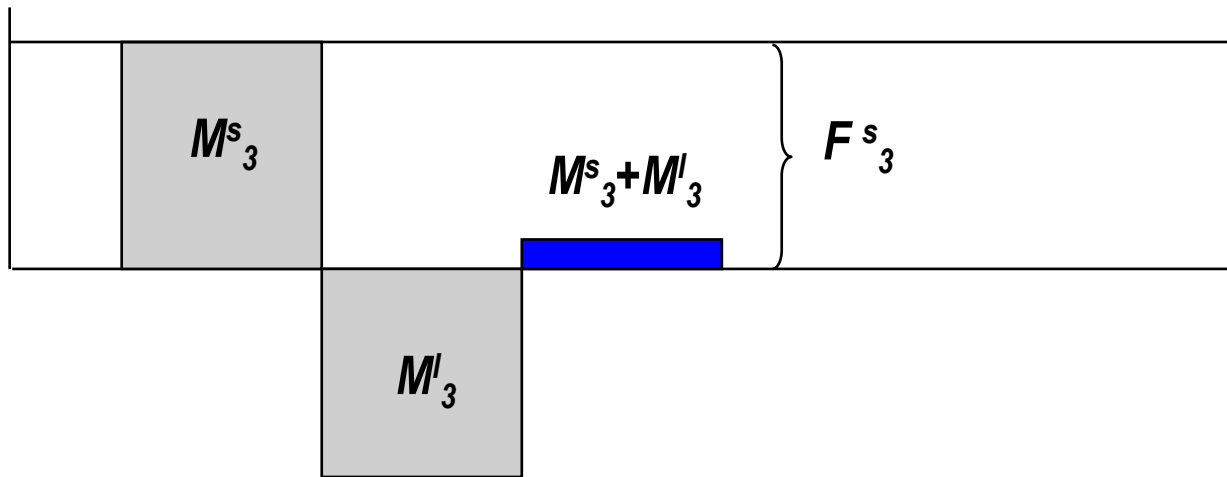
- Do these facts represent a friction or are themselves the results of other market frictions
  - A deeper discussion of the origin of these observed features of small banks' market participation is needed
  - In particular, why do small banks behave different from large banks in the late afternoon?
    - higher perceived credit risk
    - fixed costs of late market participation
    - cooperation with correspondent banks
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## 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)

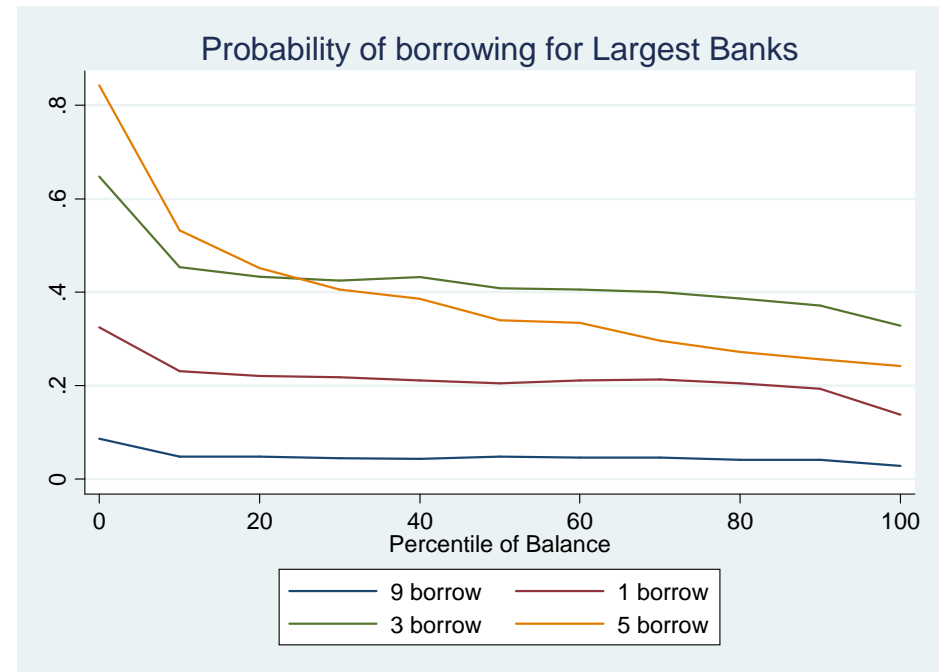
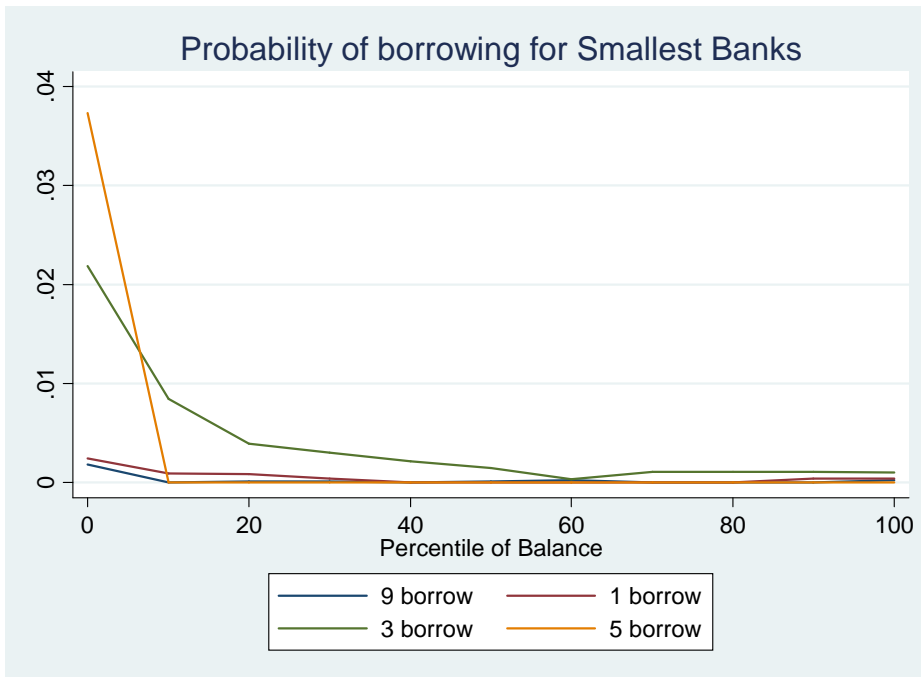
## ...minor comments

- $F_3^s > M_3^s + M_3^l$  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



# ...Fed funds lending

