Wholesale Funding Runs

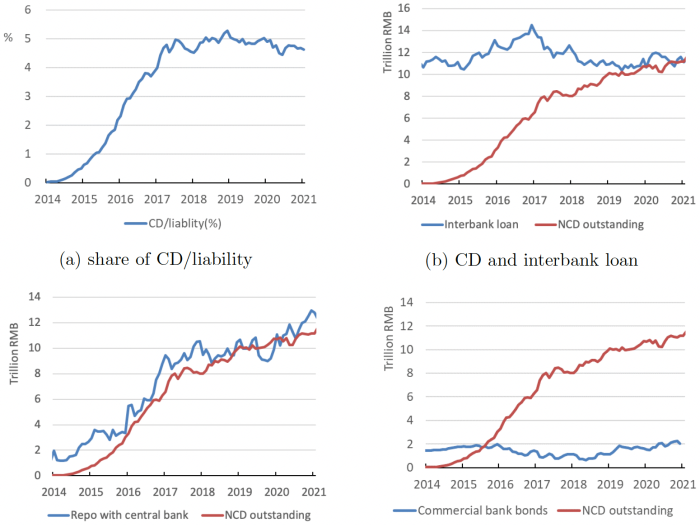
Discussant: Yiming Ma

Columbia Business School

June 1, 2023

This Paper Studies Runs in an Important Market

Figure 1: Size of the CD market



(a) share of CD/liability

(b) CD and interbank loan

Novel Data + Interesting Event

- Data:
  - Bank fundamentals
  - CD issuance, including the planned issuance amount and failed issuance/realized issuance amount
    - $\rightarrow$ runs through roll-over risk – key for wholesale funding markets
    - Conceptually equivalent to depositor withdrawals
- Event:
  - "In 2017, Baoshang's annual financial statement reported a non-performing loan ratio of just 1.68 percent. However, in May 2019 Baoshang was taken over by the government because of its serious credit risk...The government explicitly extended guarantees on Baoshang's interbank debt, but only up to RMB 50 million per lender. This has widely been interpreted as a break of the implicit guarantee on payments in the interbank market."

Key Findings and Interpretation

1. Offers without subscriptions, i.e. failure, increase by 10 times together with and despite increases in borrowing cost
2. Runs increase and become more correlated with bank fundamentals
   - Run = failure of more than 90% of issues in a week
3. Data can fit a quantitative dynamic bank-run model based on He and Xiong 12, similar to Schroth et al. 14

- Interpretation: the run was cause by fundamentals-driven coordination failure

What is a Fundamentals-driven Coordination Failure?

- Coordination failure: Diamond and Dyvbig 83
    - Bank holds illiquid assets backed by demandable debt
    - Good equilibrium: no one withdraws, assets held to maturity
    - Bad equilibrium: everyone withdraws, assets are sold
        - Just the **belief** that others withdraw makes me want to withdraw
        - Because if others withdraw, banks sell illiquid assets at a discount and may run out of assets before I withdraw

What is a Fundamentals-driven Coordination Failure?

- Coordination failure: Diamond and Dyvbig 83
  - Bank holds illiquid assets backed by demandable debt
  - Good equilibrium: no one withdraws, assets held to maturity
  - Bad equilibrium: everyone withdraws, assets are sold
    - Just the **belief** that others withdraw makes me want to withdraw
    - Because if others withdraw, banks sell illiquid assets at a discount and may run out of assets before I withdraw
- Fundamentals-driven coordination failure: Goldstein and Pauzner 05, He and Xiong 12
  - The two equilibria are coordinated by fundamentals
  - When fundamentals are bad enough, the bad/run equilibrium kicks in

What is a Fundamentals-driven Coordination Failure?

- Coordination failure: Diamond and Dyvbig 83
  - Bank holds illiquid assets backed by demandable debt
  - Good equilibrium: no one withdraws, assets held to maturity
  - Bad equilibrium: everyone withdraws, assets are sold
    - Just the **belief** that others withdraw makes me want to withdraw
    - Because if others withdraw, banks sell illiquid assets at a discount and may run out of assets before I withdraw
- Fundamentals-driven coordination failure: Goldstein and Pauzner 05, He and Xiong 12
  - The two equilibria are coordinated by fundamentals
  - When fundamentals are bad enough, the bad/run equilibrium kicks in
- Fundamentals run
  - Fundamentals are bad enough such that it is optimal to withdraw regardless of others' withdrawal

1. Money is Fungible on Balance Sheets

- Current definition: 90% of failures to rollover CDs in a week
- $\neq$ 90% of investors are running from the bank
- "CD funding as a share of banks'total liabilities is 5% for the banking sector and 15% for frequent borrowing banks."
- CDs are unsecured = backed by entire asset book of the bank
- This is different from ABCP as in Schroth et al, 14, which is short term debt held by bank conduits secured using a segmented pool of assets

1. Money is Fungible on Balance Sheets

- Suggestion
  - Embrace it! This could help to provide novel economic insights relative to Schroth et al 14
  - Consider to explore how other types of bank funding reacted e.g. retail deposits, other institutional depositors
  - How did different types of lenders run? Who ran first? Did some trigger others to run? Understanding how deposit and wholesale funding interacted in the run could be a big contribution
  - If data is not available, consider motivating using Gorton and Pennachi on the info sensitivity of debt

2. Interpretation of the Baoshang Failure

- Current interpretation: removal of implicit guarantees
- "In 2017, Baoshang's annual financial statement reported a non-performing loan ratio of just 1.68 percent. However, in May 2019 Baoshang was taken over by the government because of its serious credit risk...The government explicitly extended guarantees on Baoshang's interbank debt, but only up to RMB 50 million per lender. This has widely been interpreted as a break of the implicit guarantee on payments in the interbank market."

2. Interpretation of the Baoshang Failure

- But how about an actual deterioration in fundamentals? That may not be well measured by standard measures if credit risk?
- *"In 2017, Baoshang's annual financial statement reported a non-performing loan ratio of just 1.68 percent. However, in May 2019 Baoshang was taken over by the government because of its serious credit risk...The government explicitly extended guarantees on Baoshang's interbank debt, but only up to RMB 50 million per lender. This has widely been interpreted as a break of the implicit guarantee on payments in the interbank market."*
- And, '*'other small bank failures occured in the following months"*

2. Interpretation of the Baoshang Failure

Chinese business & finance   + Add to myFT

China allows first commercial bank to go bankrupt in almost 20 years

Decision was taken after regulators found ‘severe insolvency’ during a review of the business

This month China Finance, an official publication of the PBoC, reported that Tomorrow Group, the troubled financial conglomerate controlled by disappeared billionaire Xiao Jianhua, had used more than 200 shell companies to borrow Rmb156bn ($22.5bn) from Baoshang.

There have been at least six bank runs in five provinces over the past 12 months in China, as slowing economic growth and disruption from the coronavirus pandemic have strained the balance sheets of local lenders.

Many local banks have also struggled with failures in corporate governance, and Beijing has bailed out four regional banks since beginning a crackdown on off-balance sheet financing in 2018.

2. Interpretation of the Baoshang Failure

- Key Question: Could there have been credit risk exposures systematic to the banking sector that were not well captured by financial ratios but discovered during the event?
- Recent example: Silicon Valley bank uncovered the extent of banks' liquidity mismatch/duration risk $\rightarrow$ subsequent runs on Signature Bank, First Republic etc...
- Suggestions:
  1. Discuss + plot measures of credit risk over time for Baoshang and sample banks
  2. Were people more reactive to credit risk or were measures of credit risk simply not capturing the true exposures? Are they maybe lagging e.g. non-perfoming loans?

3. Fundamentals versus Coordination

- The interpretation of the Baoshang event really matters for the interpretation of the "run"
- If it was just a deterioration in fundamentals, the run may have been efficient
- Important to show that fundamentals in the sample of banks was "sound enough" to establish coordination failure as the mechanism
  - Suggestion: Look at performance of
    - bank assets
    - the firms that borrow from banks
    - other debt that these firms issue
    - in the longer run - did the banks do well? Bad fundamentals would have persisted.

,

Conclusion

- Very nice paper with lots of interesting findings about runs in an important market
- Identifying runs and run incentives is challenging $\rightarrow$ potential for even more interesting findings going forward!
    1. Refine interpretation considering the fungibility of bank balance sheets + unsecured nature of CD
    2. Rethink interpretation of the Baoshang failure
    3. Try to rule out fundamentals-only runs