

Interest Rate Risk and Cross-Sectional Effects of Micro-Prudential Regulation (by Begenau, Elenev and Landvoigt)

Discussion by Maxi San Millán

Workshop on The Micro and Macro of Financial Intermediation
Central Bank of Chile

October 6, 2025

Disclaimer: The views presented here are my own and do not necessarily reflect those of the Central Bank of Chile or its Board Members.

Brief overview of the paper

- ▶ Research question(s):
 - ▶ What are the connections between bank interest rate exposure, the cross sectional heterogeneity in bank portfolios and funding choices, and financial stability?
- ▶ Strategy: Build a two period **heterogeneous** bank model which can replicate important features of the cross sectional distribution of bank balance sheets.
 - ▶ Large banks → use **more uninsured** funding → **more run** risk → hold more securities as **insurance** → more exposure to **interest rate risk**.
 - ▶ **Policy implications:** size dependent capital requirements are effective from a **micropru** perspective.

Key model elements

- ▶ Banks choose funding mix and portfolio: (D^U, D^I, S, K, B) .
- ▶ Capital and liquidity requirements:

$$D^U + D^I \leq \theta^K K + \theta^B B \quad (1)$$

$$\theta^D (D^U + D^I) \leq B \quad (2)$$

Simplified balance sheet

Loans: K	Insured: D^I
Bonds: B	Uninsured: D^U
	Equity: S

Key model elements

- ▶ **Heterogeneous productivity** + decreasing returns to scale:

$$\underbrace{A_i}_{\text{productivity}} \underbrace{R_k}_{\text{agg. risk}} \underbrace{\epsilon_i}_{\text{idios. risk}} (K_i - \underbrace{\hat{K}_i}_{\text{liquidations}})^{1-\kappa} \quad (3)$$

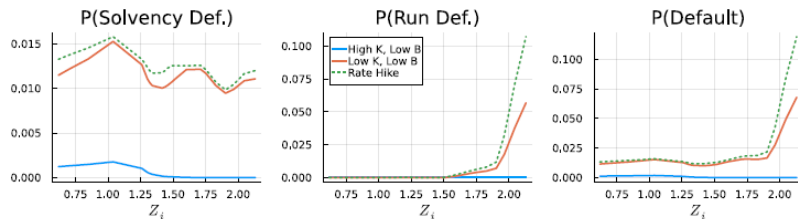
⇒ heterogeneity in bank sizes.

- ▶ **Local market power** in insured and uninsured deposits.
- ▶ **Small** bank: relatively unproductive in loan business → invest relatively more in securities, use cheap insured funding.
- ▶ **Large** bank: very productive in loan business → **use also uninsured deposits** (runnable) in the funding mix (intuition of a monopolist in both insured and uninsured with $\neq$ elasticities). → **Higher exposure to runs.**

Key model elements

- ▶ Costly loan liquidations (fire sale discount δ).
- ▶ Multiplicity of equilibria for some realizations of $\epsilon_i \rightarrow$ sunspot coordinates a run.
- ▶ Securities B do not suffer from a fire sale discount and help insure (to some extent) against runs.
- ▶ Large banks hold bonds as insurance against run risk, but makes them **more exposed to interest rate risk**.

Figure 10: Default Probabilities After Rate Hike



Comment 1: What about other liquid assets?

- ▶ In the model returns on securities are determined by

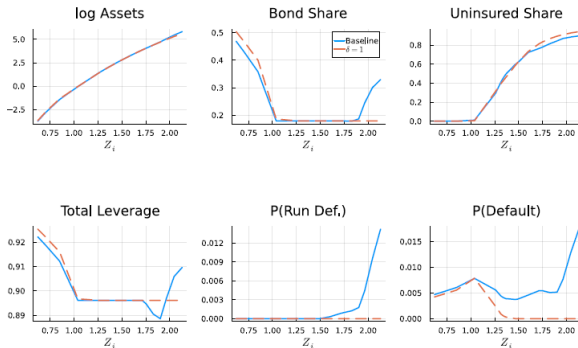
$$\bar{R}_B = \omega \underbrace{R_B}_{\text{risky}} + (1 - \omega)(1 + r). \quad (4)$$

- ▶ If banks liquidate bonds during a run, they get the risky return.
- ▶ ω is treated as exogenous.
- ▶ Possibly important to either show sensitivity with respect to ω or think about endogenizing it.
- ▶ Central bank reserves are absent from the analysis, but they are available to banks.
- ▶ Scantly used, very low yield assets, but: banks do have incentives to insure against risk in bond returns in the model.

Comment 2: Distribution of capital buffers in the model vs data

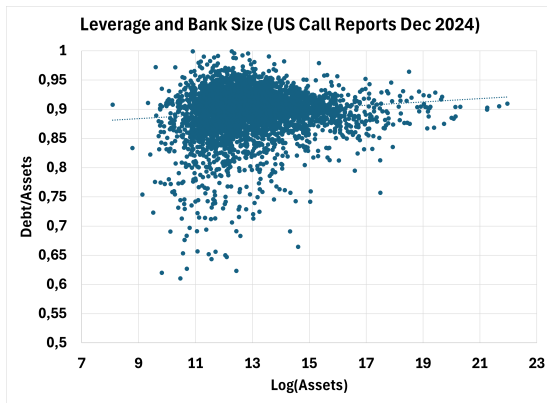
- ▶ Leverage choices are crucial to determine run risk in the model.
- ▶ Does the model yield a realistic distribution of bank leverage, and more importantly a realistic correlation with bank size?

Figure 6: Equilibrium in Baseline and Without Runs



Comment 2: Distribution of capital buffers in the model vs data

- Model predicts binding requirements for small banks, at odds with the data:



- Large banks may be better diversified (sectoral, geography, scope) → somewhat smaller buffers.
- In the model, large, more productive banks are the more likely to default and hold more buffers.

Comment 3: Drivers of bank failure - Runs vs insolvency

- ▶ Recent empirical evidence on the drivers of bank failures:
 - ▶ Most failures are driven by **solvency** issues, even if they become runs at some point (Correia, Luck and Verner, QJE forthcoming)
 - ▶ Moreover: determinants of failure seem to be **similar for large and small banks** (weak fundamentals).
- ▶ Model predicts large banks are more exposed to run risk.
- ▶ **Empirical evidence** supporting this point would strengthen your story.

Additional comments

- ▶ Interesting laboratory to analyze regulation that links liquidity and solvency:
 - ▶ Chilean law: Banks with short term liabilities in excess of 2.5 times their net worth must hold additional reserves at the CB.
- ▶ Dynamic considerations: higher franchise value might lead to more prudent behavior by banks. Quantitative effects?
- ▶ Lender of last resort/ discount window absent in the model. Relevant to include it?

Conclusion

- ▶ Very creative and thought-provoking paper.
- ▶ Would benefit from providing some additional empirical support and showing the fit of untargeted moments.
- ▶ Endogenizing ω would further strengthen the story.
- ▶ Congratulations and looking forward to the next iteration!