Discussion: Interest Rate Risk in Banking by Peter DeMarzo, Arvind Krishnamurthy, and Stefan Nagel

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Banks and Interest Rate Risk

Do interest rate movements pose a threat to financial stability?

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- Banks are in the business of financial products so *obviously* interest rate plays a role
- Monetary policy moves interest rates

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2. An intense academic debate in previous 5 years or so

This Paper

Measurement of bank interest rate risk

- Basic finance principle: measure cash-flows, compute net present value and duration
- No built in view of what banks *should* be doing
- Banks have positive duration: lost 5.8% of assets as result of rise in interest rates $\rightarrow$ $\approx 58\%$ of equity

Discussion

- **Big picture**: what everyone agrees about regarding bank interest rate risk
- **Tracking risk**: how this paper does it
- **Challenges for the regulatory and monitoring framework**

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A common theme:

$$\infty - \infty = 0?$$

Basic Economics of Bank Risk

Interest-rate risk for non-financial firms

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- Nobody seems to worry that this will lead to large waves of bankruptcy

Why you might think banks are different

- Large leverage: Equity/ Assets $\approx 10\%$
- Long-term assets (loans, bonds) financed with short-term financing (deposits)

$\Rightarrow$ interest-rate risk comes from mismatch between duration of the assets and liabilities

- Like a 10-times levered investment in 5-year bonds: $\infty - 0 = \infty$
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- A ballpark value: **1%** increase in rates lead to a **50%** drop in value.
- Banks should go bankrupt all the time ... thankfully they don't

Why banks are not that different

- Deposits look like long-term liabilities: they stay in the banks a long time and receive approximately fixed rates

$\Rightarrow$ Back to non-financial firms: whatever interest-rate risk comes from duration of *profits*

- profits = selling financial products at a different price from "fair market value"
- the whole point of a bank is to make profits this way ... but competition pushes profits down
- expect similar magnitude of duration as on non-financial firms, $\infty - \infty = C$

So why is there a debate?

- I'm not quite sure.
  - I thought this was at least heuristically the view among industry, regulators, and (some) research when we wrote Haddad Sraer (2021). Of course, measurement and understanding much sharper today.

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- Most optimistic guess: debate about what is C in:

$$\infty - \infty = C$$

- Can write theories of optimal C (sometimes 0), or just do **measurement**.

Measuring Bank Risk

How they do it

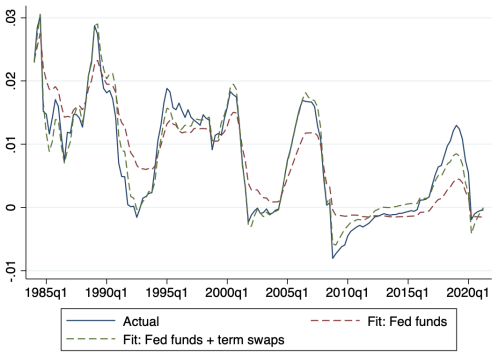
Just look at data

- What matters for duration is fixed payoff (like long-term bonds) vs proportional to short rate (like short-term bonds)
- Fit the various pieces of income of the bank, and net it out
- Find C relatively big: **1%** increase in rates lead to a **10%** drop in value.

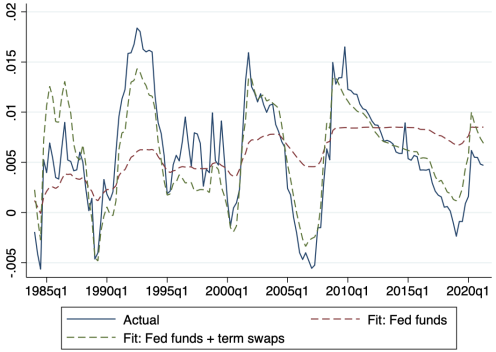
$\Rightarrow$ **Main reaction**: great to be down-to-earth and reasonable assumptions

How well does it fit?

(A) Aggregate deposit spread



(B) Aggregate lending spread

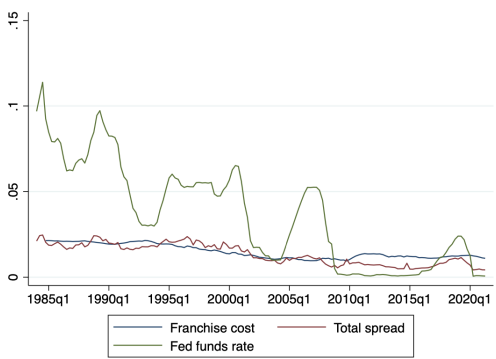


A first curse of ∞: Measurement

$$\infty - \infty = C$$

- Measuring each ∞ well does not mean measuring their difference precisely
  - Compare to alternatives: e.g. Hirtle and Plosser (2025)

(B) Total spread and franchise costs



Challenges for Risk Monitoring

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- **Naturally unstable**: if something changes with one of the ∞ the difference can blow up
  - Deposits leave
  - Balance sheet composition shifts: QE, ample reserve framework, one bank deviates (see regulatory warnings to SVB) ...

Depositors leave?

Depositors can run on themselves (Haddad Hartman-Glaser Muir 2023, Drechsler Savov Schnabl 2023, Jiang Matvos Piskorski Seru 2023)

- Deposits are a source of profits for the bank
- If depositors leave, the value of the bank drops, and the bank can fail
- Provides incentives to run in the first place
- Particularly relevant if value of relationship with banks is in the future (when rates will be low again)

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  - many interest rate hikes without runs
  - high share of uninsured deposits always a feature of banking system

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- Facilitated by high interest rates, but ...
  - many interest rate hikes without runs
  - high share of uninsured deposits always a feature of banking system
- **Why was March 2023 different?**
  - Heterogenous banks: SVB and similar banks quickly acquired many new depositors that were the "easy-switching" type
  - Systematic change: Financial and information technology progress facilitates bank switching for everybody?

Conclusion

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- What next?

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  - Lots of interesting economics: risk beyond interest rate, regulatory capital vs economic capital, income vs value, what does the stock market care about, ...