

Diverging Banking Sector: New Facts and Macro Implications

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Brief Summary

- Novel Stylized facts regarding heterogeneity in the US Banking sector
 - **Emergence of two kinds of banks:**
 - **Low-rate Banks:** Higher physical branches, low deposit rates, longer maturity assets, Low/No deposit beta, safer assets – lower credit spread, older customers
 - **High-rate banks:** Fewer physical branches, deposit rates close to fed fund rates, shorter maturity assets, higher deposit beta, riskier assets – higher credit spread, younger customers
- Implications for Monetary Policy Transmission:
 - **↑ Interest rates ⇒ High-Rate banks ↑ deposit rates ⇒ Attract deposits away from low-rate banks ⇒ ↓ maturity transformation**
 - And supply - driven increase in short-term personal and C&I loans

The Big Picture

- **Rapid digitization** of the financial sector globally
 - New models of financial intermediation
 - Changes in the structure of the banking industry
 - Fintechs/Neo-banks vs traditional banks
 - Increased competition
 - Market segmentation (Buchak, Matvos, Piskorski, and Seru (2018), Gopal and Schnabl (2022), Liu, Lu, and Xiong (2022)...))
- Implications for banking sector fragility
 - Macroprudential regulations, monetary policy

My Take

- **Novel and insightful** findings on the structure of the banking industry
 - Clean marginal contribution
- **Evidently policy relevant** – monetary policy transmission, macroprudential risk management
- Thoughtful about alternate explanations
 - Pre-empts many concerns (91 pages and 5 appendices)
- **Recommend reading!**

My Take...

- Pretty convincing evidence regarding the emergence of the two bank types
- But, when and why?
 - What precipitated the divergence?
 - When did it really start?
- Macroeconomic implications!

Empirical Design

- Resembles a difference-in-differences design

$$Y_{i,q} = \delta_q + \beta \cdot \mathbb{1}_{\text{High rate},i} \times \text{Post}_q + \gamma \cdot \mathbb{1}_{\text{High rate},i} + \text{Controls}_{i,q-1} + \varepsilon_{i,q}.$$

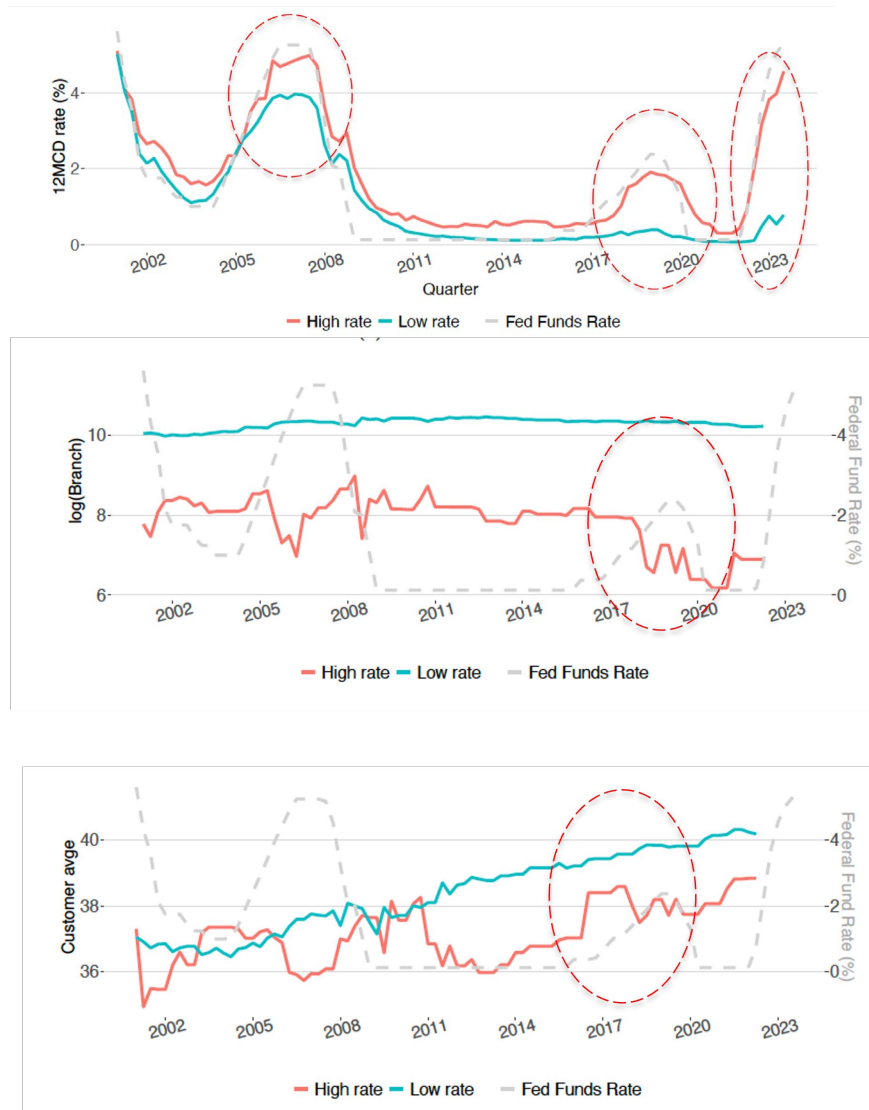
- Post_q denotes the post-2009 period.

	log(# Branches)		log($\frac{\text{Branches}}{\text{Deposit}}$)		Branch-weighted County Average Age	
	(1)	(2)	(3)	(4)	(5)	(6)
1(High Rate) × Post	-1.072*** (0.298)	-1.049*** (0.303)	-0.477** (0.229)	-0.547** (0.238)	-0.568*** (0.215)	-0.567*** (0.214)
1(High Rate)	-0.785*** (0.218)	-0.861*** (0.208)	-1.120*** (0.192)	-1.151*** (0.194)	-0.470** (0.197)	-0.557*** (0.185)
Post	0.443*** (0.126)		-0.779*** (0.121)		1.820*** (0.213)	

What is unique about 2009?

- Do the two bank types emerge suddenly after 2009?
 - Or was there a gradual progression
 - The cut-off is not critical for the study and seems arbitrary!
- **Suggestion:**
 - Event study design: introduce leads and lags
- **Learning by banks?**
 - Did banks learn about their depositor types during the crisis episode?

What happened post 2017?



What happened post 2017?

- **Divergence** appears to be driven by the **recent episodes of fed rate hikes!**
- Are there cycles of divergence and convergence?
 - Across low-rate vs high-rate regimes
 - **Persistent or temporary** divergence?
- **Puzzle:**
 - Age profile of high-rate banks goes back to 2009 levels?
 - In stark contrast to the 2005-2008 period!
 - Bank branches – surprisingly fast response?

What happened post 2017?- A potential explanation?

Figure 2: Types of interbank turnover

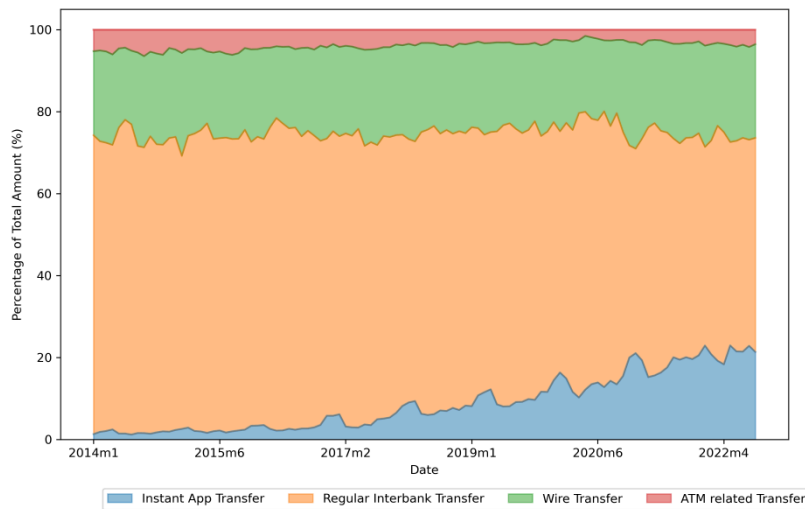
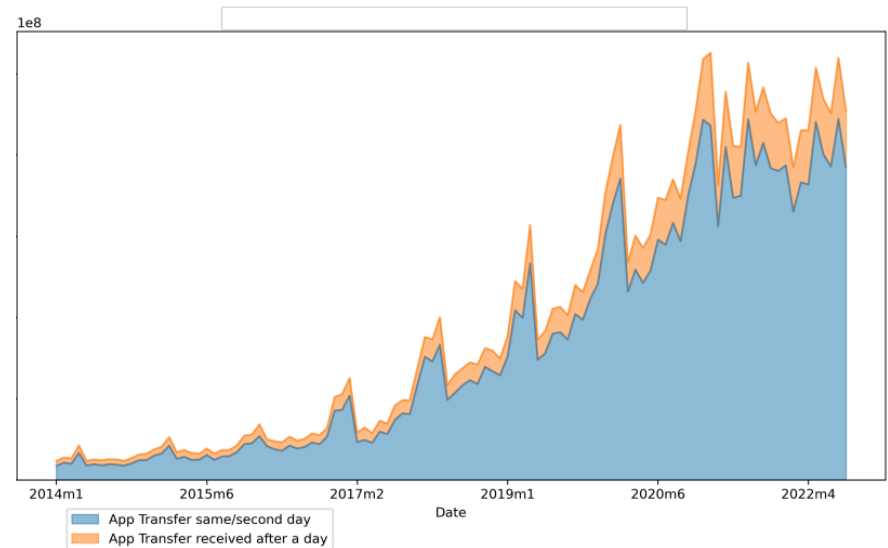


Figure 5: Transfer Delays and Fast Payment Applications



Source: Lu, Song, and Zeng (2024)

- **Payment technology-induced changes in depositor stickiness/alertness** (Lu, Song, and Zeng (2024)).
 - *“Depositor alertness is particularly pronounced during periods of rate hikes but diminishes when rates fall”*
 - Cyclical depositor behavior induces cyclical divergence in business models?

Who borrows from high-rate banks?

- *“High-rate banks have notably increased their allocations to personal loans by approximately 7.5%, C&I loans by about 3.1%...post-2009”*
- ↑ Interest rates
 - ⇒ High-rate banks increase riskier short-term personal and C&I loans
 - ⇒ But decrease lending rates (Suggestive evidence against demand channel)
 - But, then, who is borrowing? Why were they not borrowing earlier during the lower rate regime?
 - Are banks expanding credit to underserved marginal borrowers?
 - Evidence of higher charge-offs and lending rates points to it!
 - But can you provide more direct evidence?
 - Is there a commensurate sharp drop in the proportion of unserved borrowers post-2009?
 - Are banks lending to entrepreneurs and enabling entrepreneurship? (ala SVB)

Determinants of banks' business model?

- How and why do banks choose different models of banking?
 - Changes in the demographic composition of regions they serve?
 - A map showing the spatial variation of high and low-rate banks would be helpful.
 - And/Or Introduction of new payment technology
- High-rate banks tend to be newer banks?
 - American Express (2008), Ally Bank (2008), Capital One (2005)
 - In contrast, JP Morgan Chase (1969), US Bank (1968), Bank of America (1968)

Do banks switch on and off?

- At any point, there is likely to be heterogeneity in banks' assets
 - Some banks have invested more in low-risk, long-term assets
 - They may need time to change their asset composition
- The results are robust to applying a stability criterion
 - But, it would be useful to see the list of high and low-rate banks year by year

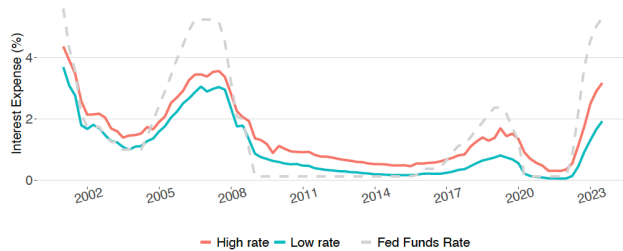
Efficiency and welfare?

- **Admittedly, it's a tough ask!**
- However, it is important to understand trade-offs given macroeconomic implications.
- What is the optimal composition of short-maturity/risky and long-maturity/low-risk credit in an economy?
- Emergence of high-rate banks => lower maturity transformation
 - Optimal or Sub-optimal?
- **If** High-rate banks lend to new firms/underserved borrowers
 - Borrow short-term, build reputation, and graduate to long-term loans (minimizes adverse selection costs)

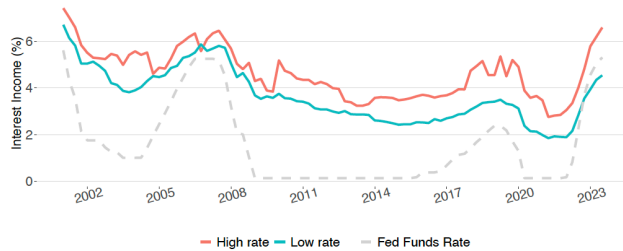
Are high-rate banks more profitable?

Figure 7: Net Interest Margin

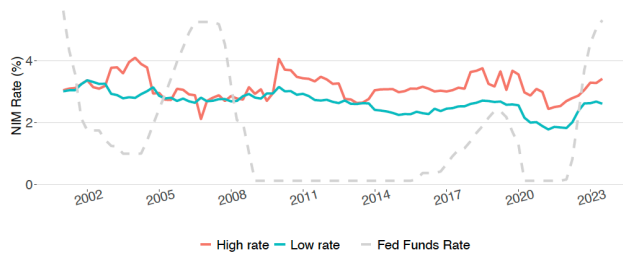
(a) Interest Expense



(b) Interest Income



(c) NIM



- Divergence in interest income more than interest expense?
- Higher NIM
- Fewer physical branches => Lower operation costs?
- Higher cash flow may serve as a cushion against adverse shocks?

Implications for Banking Sector Fragility

- **Net positive or negative?**
- Episodes of interest rate hikes
 - Migration of deposits away from low - rate banks
 - To money market funds
 - May increase banking fragility (Drechsler et al (2023))
- But this paper – deposits moving within the banking sector
 - May reduce fragility
 - Counterfactual deposit outflows from the banking sector may be higher.
 - If there were no high-rate banks

Implications for Inflation

- Has the rise of high-rate banks fueled inflation?
 - Excess credit supply => ↑ in consumption
- Blunts monetary policy as a tool to control inflation
 - Tightening monetary policy may worsen inflation
 - As high-rate banks increase the credit supply in response
- Worth examining?

Minor Comment – many alternate subsamples

Table 1: Deposit Rates on Savings Accounts

Financial institution	Savings deposit rate (APY)	Minimum opening balance
PNC	4.65%	\$0
Marcus by Goldman Sachs	4.50%	\$0
Citi Bank	4.45%	\$0
Ally Bank	4.35%	\$0
Capital One	4.35%	\$0
TD Bank	0.02%	\$0
JP Morgan Chase	0.01%	\$0
U.S. Bank	0.01%	\$25
Wells Fargo	0.01%	\$25
Bank of America	0.01%	\$100

Stability criterion



Table C.5: Classification of Banks

High rate banks	American Express, Ally Financial
Low rate banks	Charles Schwab, SVB, M&T Bank, JP Morgan, KeyBank, Huntington, PNC, Fifth Third Bank, BOA, State Street Bank, U.S. Bankcorp, Wells Fargo, Citizens Bank, Northern Trust, Bank of Montreal, Regions Financial, Bank of New York, First Republic Bank

Notes: This figure displays kernel density plots of the demeaned logarithm of branch deposits by the top 25 banks at the peak of each interest rate hiking cycle. Figures a, b, c, and d illustrate the kernel density at the following quarters: 2007Q3, 2019Q1, and 2022Q2 (the last quarter available in SOD database), respectively. The top 25 banks are determined based on bank size at the beginning of each quarter. To ensure that the results are not influenced by banks primarily engaged in businesses other than retail deposits, we limit our analysis to banks with a minimum of 15 branches (the sample average is 1214). This restriction excludes Charles Schwab, J.P. Morgan & Co (before 2000), State Street, Merrill Lynch, Morgan Stanley, Bank of New York Mellon, Goldman Sachs, Ally Financial, and ING. The first seven of these banks focus on broker or investment banking businesses, while the latter two are fintech banks that have emerged in recent years. In the Appendix Figure D.4, we provide density plots that include these banks without any exclusions.

Figure 4

Minor Comment

- Would help if you create a summary table listing all the filters and criteria for the main sample.
 - Restrict attention to this subsample across key tables and figures.
- Stylized static model – current empirics do not test the model's mechanism
 - May need a dynamic model

Overall

- **Interesting Paper!**
- Well written
- Thoughtful about potential concerns!
 - Many robustness tests
 - May get confusing
- I look forward to seeing it in print!