

Hedging Securities and Silicon Valley Bank Idiosyncrasies

by Raymond Kim

Discussion: **Daniel Fricke**



EBA 2023 Policy Research Workshop
November 8, 2023

Classic Bank Runs are Still Possible! Diamond/Dybvig (1983)

The image shows two news articles side-by-side. On the left is a Reuters article from March 10, 2023, titled "After Silicon Valley Bank's shutdown, uninsured depositors face tense wait" by Pete Schweder. It features a photograph of the Silicon Valley Bank building in Santa Clara, California, with people gathered outside. The article text discusses the bank's high level of uninsured deposits and the impact of its closure. On the right is a Financial Times article titled "How crazy was Silicon Valley Bank's zero-hedge strategy?" by Robin Wigglesworth, dated March 17, 2023. It includes a photograph of a traditional Japanese garden with a pond and a pagoda. The article text discusses the bank's strategy of amassing a large bond portfolio without hedging against rising interest rates.

Large portfolio losses meet information-sensitive depositors Jiang et al. (2023b)
→ What to do? Accounting, deposit insurance, **risk management**, ...

This Paper

Summary:

- Banks with **total assets below \$250B** display differences in the **timing** of their i) hedging and ii) trading activities.
- ad i): hedging activity related to bank-level risks.
- ad ii): trading activity related to macroeconomic factors.

Important research question! How do bank manage their risk exposure over the cycle?

Main comments:

- #1. Sample Selection + Data
- #2. Empirical Setup
- #3. Policy Implications

#1. Sample Selection + Data

" This paper focuses on banks with less than \$250 billion in assets [...]" (p. 11)

	(1)	(2)	(3)	(4)
	All Banks	Asset <10B	Asset [10B,250B]	Asset >250B
Assets of FDIC-insured banks	23.7T	3.4T	7.1T	13.2T
Assets of banks required to report rate swap	22.2T	1.9T	7.1T	13.2T
# Banks required to report rate swap	1288	1129	146	13
Assets of banks with non-zero rate swap	17T	0.7T	3.9T	12.4T
# Banks with non-zero rate swap	296	206	79	11

Table 1: Summary Statistics (as of 2021:Q4) [Jiang et al. \(2023a\)](#)

→ Add more on the economic relevance of these banks! How important are they in terms of SME credit?

#1. Sample Selection + Data

" This paper focuses on banks with less than \$250 billion in assets [...] As Figure 2 shows, banks over \$250 billion in assets use derivatives for hedging at a much greater level than banks below \$250 billion in assets." (p. 11)

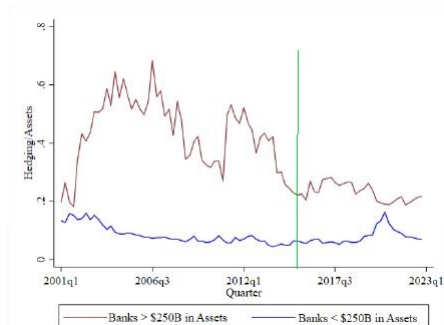


Figure 2. Hedging IRD in Banks Over/Under \$250B (average values)

→ **Conduct (formal) tests at the bank-level! Is there a convergence?**

#1. Sample Selection + Data

" This paper focuses on banks with less than \$250 billion in assets [...] As Figure 2 shows, banks over \$250 billion in assets use derivatives for hedging at a much greater level than banks below \$250 billion in assets." (p. 11)

	(1) All Banks	(2) Asset <10B	(3) Asset [10B,250B]	(4) Asset >250B
Assets of FDIC-insured banks	23.7T	3.4T	7.1T	13.2T
Assets of banks required to report rate swap	22.2T	1.9T	7.1T	13.2T
# Banks required to report rate swap	1288	1129	146	13
Assets of banks with non-zero rate swap	17T	0.7T	3.9T	12.4T
# Banks with non-zero rate swap	296	206	79	11
Hedge/Asset (%)	5.4 (4.8)	5.3 (4.8)	5.0 (4.7)	8.7 (3.7)
Hedge/Security (%)	36.1 (40.5)	43.9 (47.6)	28.4 (32.7)	30.6 (15.8)
Hedge/AFS Security (%)	44.9 (46.4)	52.2 (52.6)	36.6 (39.8)	46.9 (31.3)
Duration	4.6 (1.4)	4.6 (1.2)	4.5 (1.0)	5.9 (3.6)

Table 1: Summary Statistics (as of 2021:Q4) [Jiang et al. \(2023a\)](#)

- Why (hedging IRD/total assets) instead of (hedging IRD/securities)? Net notional instead of gross notional? (Who are the counterparties?)
- Why not keep large banks as control group?

#2. Empirical Setup

Hypothesis 1. *Hedging IRD and Trading IRD have different approaches in how banks utilize them in response to changes in interest rates.*

	<i>Dependent Variable: $\Delta IRD_{i,t}$</i>			
	<i>Rising Rates_t</i>		<i>Falling Rates</i>	
	<i>Trading</i>	<i>Hedging</i>	<i>Trading</i>	<i>Hedging</i>
	(1)	(2)	(3)	(4)
$\Delta Rates_t$	-0.007*** (-4.1)	-0.002 (-0.35)	-0.02*** (-3.75)	-0.057*** (-9.31)
$\Delta Rates_{t-1}$	-0.002 (-0.76)	0.003 (0.6)	-0.002 (-0.47)	0.006 (0.95)
$\Delta Rates_{t-2}$	0.007** (2.14)	-0.004 (-0.48)	-0.004 (-0.46)	-0.022** (-2.05)
$\Delta Rates_{t-3}$	-0.003 (-1.33)	0.003 (0.78)	0.001 (0.35)	0.005 (1.09)
Observations	4,632	23,114	2,837	14,482
Interest Rates	10Y Swap	10Y Swap	10Y Swap	10Y Swap
Bank FE	✓	✓	✓	✓
Bank Clusters	✓	✓	✓	✓
Time Clusters	✓	✓	✓	✓
Adjusted R^2	0.02	0.02	0.02	0.07
Within R^2	0.01	0.00	0.05	0.09

→ Why is only t of interest? Why not EFFR (or MP shocks)? Why no controls (low R^2)? Why no significance test on interaction term? Economic magnitudes?

→ Also, more details on cross-section/time-series?

#2. Empirical Setup

Hypothesis 2. *Banks increase hedging activity to mitigate losses in their fixed-income portfolios.*

As a corollary, if banks increase hedging activity when losses increase, banks may also decrease hedging activity when gains increase.

Hypothesis 3. *Banks reduce hedging activity when there are gains in their fixed-income portfolios.*

$$\frac{\text{Hedging IRD}_{it}}{\text{Assets}_{it}} = \alpha_i + \lambda_t + \frac{\text{Held-to-Maturity Security Losses}_{i,t}}{\text{Assets}_{it}} + \frac{\text{Available-for-Sale Security Losses}_{i,t}}{\text{Assets}_{it}} + \frac{\text{Maturity Gap}_{it}}{\text{Assets}_{it}} + X'\beta + \varepsilon_{it} \quad (1)$$

→ **Why is only t of interest? Why not use interaction term (Rising vs. Falling) in full sample?**

→ **Reverse causality/alternative perspective: Do banks with higher IRD display lower HTM/AFS losses? Effect on overall profits/losses?**

#3. Policy Implications?

The paper could provide more specific policy implications.

- What can we learn from the analysis? Should banks hedge/trade more? What are the relevant trade-offs?
- How do hedging/trading activities matter for bank performance (over the cycle)? More broadly, are there implications for bank lending (and thus the real economy)?
- Systemic perspective: Who are the counterparties? Who ultimately bears interest rate risk ([Hoffmann et al. \(2018\)](#))?

→ I look forward to reading the next version! Good luck!