

How Interest Rates Affect U.S. Commercial Banks

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Abstract:

This article explores how interest rate fluctuations impact U.S. commercial banks, focusing on the 2022–2023 period when the Federal Reserve sharply raised the federal funds rate to combat inflation. This article finds that rising rates widened net interest margins, boosting banks' net interest income (NII). However, higher rates also brought challenges. Exemplified by Silicon Valley Bank (SVB)'s collapse, this article notes that the market value of banks' long-term fixed-rate assets plummeted, leading to widespread unrealized losses. Moreover, deposit flows shifted, with large banks gaining deposits post-SVB failure, while regional and mid-size banks faced outflows and had to raise deposit rates to compete. By early 2023, funding costs rose and loan growth slowed, pressuring NII. The article further examines banks' interest rate risk management strategies, including asset-liability management (ALM), financial derivatives, and regulatory stress tests, noting gaps in pre-2023 stress scenarios. It highlights that effective governance and diversified operations can mitigate risks, while poor risk management led to failure. The 2022–2023 experience also underscores that prudent rate risk management turns rate hikes into opportunities, while mismanagement increases vulnerability.

Keywords: Interest Rates; U.S. Commercial Banks; Net Interest Income; Interest Rate Risk; Asset-Liability Management; Unrealized Losses; Deposit Flows; Silicon Valley Bank

1. Introduction

Banking revolves around interest rates, since the way banks make money is by borrowing -- through deposits or wholesale funding -- and lending money. When interest rates change, it directly impacts the

earnings and balance sheet of a bank. For example, higher rates can bring more income to the banks from loans, but they also make it more expensive to collect deposits and to borrow from other sources. As rates change, so too does the market value of a bank's fixed-income holdings, like bonds and mortgages.

This interest rate risk – the possibility of the change in rates adversely affecting a bank's earnings or capital – is central to such matters in banking, and should be managed prudently (FDIC, 2025). The FDIC reports that outsized interest rate risk can pose risks to a bank's earnings, capital, liquidity, and even its solvency. That is why banks require robust policies and risk-management frameworks to help identify, measure, and mitigate this risk." In brief, interest rates significantly impact the profitability and stability of banks, thus bankers and regulators need to know their effect.

2. How Changes in Interest Rates Affect U.S. Commercial Banks

In 2022–2023, the Federal Reserve raised interest rates sharply to fight inflation, increasing the federal funds rate by about 4.25 percentage points in 2022 alone, the fastest rise in decades (Forbes, 2023). Figure 1 shows the Federal Funds Effective Rate. Short-term rates even climbed higher than long-term rates, inverting the Treasury yield curve. Such rapid increases had mixed effects on banks, mainly manifested in two aspects: net interest income (NII) and deposit flows.

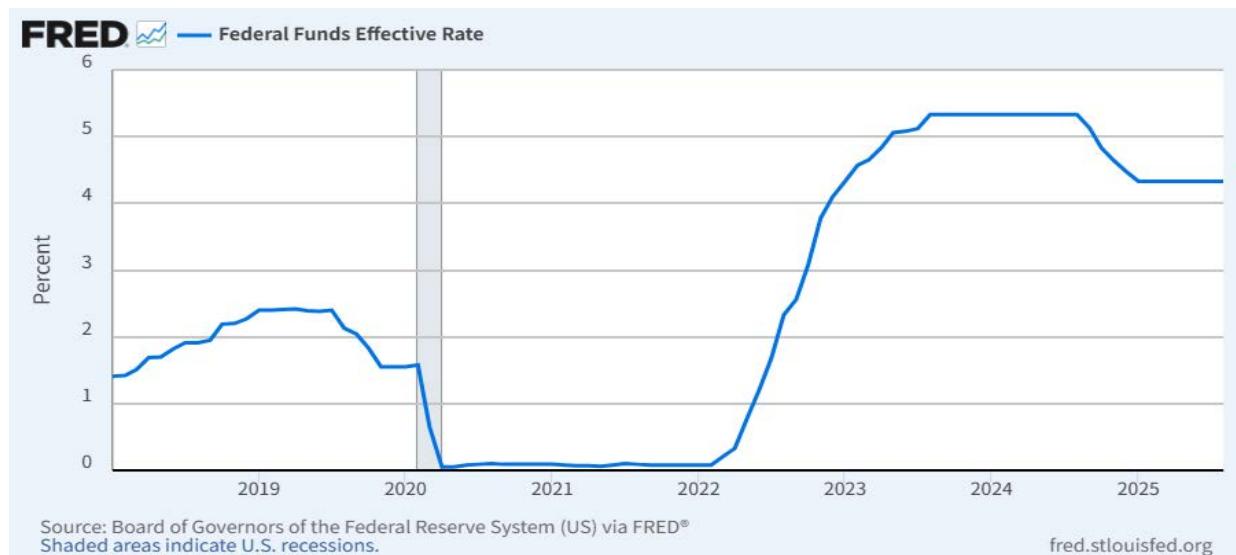


Figure 1. Federal Funds Effective Rate (2019–2025)

Data source: Board of Governors of the Federal Reserve System (US) via FRED ([https://fred.stlouisfed.org/series/FEDFUND\\$#](https://fred.stlouisfed.org/series/FEDFUND$#))

Rising rates initially helped banks' NII because they could charge more on loans while many deposit rates rose more slowly. In late 2022, banks (e.g., JPMorgan and Bank of America) generally saw strong loan growth and higher net interest margins as the gap between loan rates and deposit rates widened (FDIC, 2023; JPMorgan, 2023). However, higher interest rates also brought challenges. As rates climbed, the market value of banks' existing fixed-rate assets fell, causing *unrealized losses* in securities portfolios. The FDIC noted that the sharp rise in 2022 caused "wide-

spread depreciation in securities portfolios," especially for banks holding many long-term assets (FDIC, 2023). As shown in Table 1, the asset growth rate in 2022 turned negative, indicating a significant decrease in the total assets. These unrealized losses are on paper, but they reduce a bank's liquidity because the bonds are worth less and may require the bank to hold more capital if it sells them. For example, Silicon Valley Bank (SVB) invested heavily in long-maturity bonds, and when interest rates went up, it faced huge losses. A Federal Reserve study found that SVB "*did not heed the early signs of market risk, removed its hedges, and had significant unrealized losses on its held-to-maturity investment securities*" as rates rose.

Table 1 Indicators of FDIC-Insured Community Banks

Year	2024	2023	2022	2021	2020
Return on assets (%)	0.95	1.01	1.15	1.26	1.09
Return on equity (%)	9.56	10.67	11.93	11.69	9.70
Asset growth rate (%)	1.80	-0.71	-1.42	9.03	12.19
Net interest margin (%)	3.33	3.39	3.45	3.28	3.39
Net operating income growth (%)	-4.30	-11.88	-3.68	30.14	-2.29

Data source: FDIC (<https://www.fdic.gov/quarterly-banking-profile>)

Another effect has been on *deposit flows*. As the Fed raised rates, many depositors moved money to higher-yielding accounts or took cash out, reducing some banks' deposits. The FDIC reported that deposit levels fell for the industry overall in 2022–2023, particularly affecting banks that lost market share (FDIC, 2023). However, large banks actually saw deposit inflows after mid-2022. When the Silicon Valley Bank and other regional banks failed in March 2023, worried customers shifted money to the biggest banks. For instance, JPMorgan Chase gained about \$50 billion in deposits in Q1 2023 as customers fled troubled smaller banks. By the end of that quarter, JPMorgan's deposits had grown 2% from the end of 2022 (JPMorgan, 2023). In contrast, regional banks and even some mid-size banks experienced outflows and had to raise their deposit rates

to compete.

Overall, the recent rate hikes first boosted bank earnings by widening margins on new loans, but this has started to reverse. Although the net interest margin remained at a high level in early 2023 (see Figure 2), the FDIC observed that funding costs were rising, banks were having to pay more to attract deposits, and loan growth was slowing, which began to cut into net interest income (FDIC, 2023). Rating agencies also pointed out that banks' net interest margins were under pressure as customers demanded higher interest on deposits. In summary, rising interest rates helped banks' net interest income in 2022 but also exposed them to losses on long-term investments and deposit competition. Analysts warned that prolonged high rates and a possible recession could weaken loan demand and hurt asset quality, even if earnings rose in the short term.

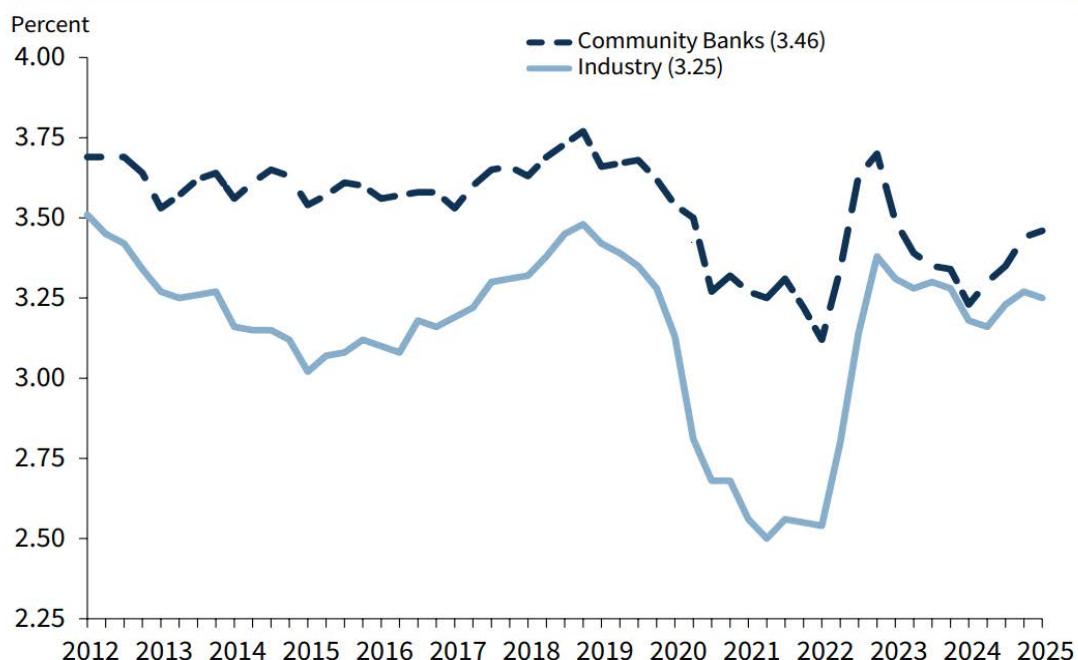


Figure 2. Net Interest Margin

Data source: FDIC (<https://www.fdic.gov/quarterly-banking-profile>)

Commercial banks' interest rate risk is a maturity mismatch in their balance sheets (Bhusan S & Dayanandan A, G N., 2025). Theoretically, interest rate risk can be mainly divided into repricing and market value risks (Al-Abadi M I & Al-Sabbagh O W, 2006; Brewer E & Lee C F., 1986). These two types of risks were exemplified by the cycle of 2022-2023. The aggressive interest rate hikes generated market value risk, and the subsequent rapid increase in deposit costs highlighted the continuous pressure of repricing risk on bank profitability.

3. Managing Interest Rate Risk in Banks

Interest rate changes can have a significant impact on banks, so they rely on formal risk-management processes to manage these risks. One key tool is asset-liability management (ALM). Banks examine when interest rates on their assets—such as loans and bonds—change and compare that timing with rate changes on their liabilities, like deposits and borrowings. For example, if a bank holds many long-term fixed-rate mortgages that won't reprice for years but funds them with short-term deposits that reset monthly, rising rates could squeeze profits. The bank

would have to pay higher interest on deposits while still earning the same low rate on older mortgages. To manage this, banks establish ALM committees and clear policies. According to the FDIC, a firm's ALM policy "ensures that IRR (interest rate risk) exposure is measured, reported, and maintained within tolerable parameters." These policies set risk limits and define specific steps for monitoring and controlling risk. In practice, banks project how net interest income and overall economic value—the present value of all future cash flows—would respond under different rate scenarios. The core theoretical tools of bank management are gap analysis and duration analysis (Chattaa J A et al., 2020; Ausloos M et al., 2020). Hence, they perform gap analysis to measure mismatches in timing between assets and liabilities, and conduct duration analysis to assess how sensitive bond prices are to rate changes. In addition to these measures, banks often use financial derivatives to hedge interest rate risk. As shown in Table

2, the notional amount of derivatives in the fourth quarter of 2023 increased by 22% compared to the fourth quarter of 2022. Interest rate swaps and futures contracts are standard tools. For instance, in a swap, a bank might pay a fixed rate while receiving a floating rate, effectively converting some fixed-rate loans into floating-rate loans that adjust as market rates change. Futures or options can also be used to hedge anticipated rate movements. However, research shows that banks' use of these derivatives varies. A recent study of top U.S. banks found that while banks hold enormous notional amounts of interest rate swaps, many positions offset each other, meaning they do not fully protect the banks' net interest rate risk. In other words, some derivatives serve more to transfer risk between banks than to eliminate it. Nevertheless, many banks do strategically hedge specific exposures—for example, to lock in rates on a large planned loan issuance.

Table 2 Notional amount of derivatives of FDIC-Insured Community Banks

Year	4th Quarter 2023	3rd Quarter 2023	4th Quarter 2022	% Change 22Q4-23Q4
Notional amount of derivatives	125,981	125,349	103,232	22.0

Data source: FDIC (<https://www.fdic.gov/quarterly-banking-profile>)

Beyond internal risk measures, regulators require banks to conduct regular stress tests for interest rate changes. In the U.S., banks face annual stress tests such as the Federal Reserve's Dodd-Frank Act Stress Test, which include scenarios for both rate increases and decreases. These tests aim to ensure that banks hold enough capital to withstand sudden market moves. Following the 2023 bank failures, analysts noted a gap: traditional stress scenarios did not simulate a rapid series of rate hikes. One Federal Reserve report observed that regulators had "been flagging hundreds of billions of dollars in unrealized losses" on bank securities as rates rose in 2022. Yet, the annual stress tests at that time had not fully accounted for such extreme rate movements. This has led to calls for incorporating fast-rising-rate scenarios into future stress tests.

Ultimately, managing interest rate risk is not just about models or hedges—it also depends on strong governance. The FDIC emphasizes that senior management and boards of directors must actively oversee interest rate risk. In well-run banks, board meeting minutes often reflect directors questioning how strategies—such as adjusting loan pricing or changing product mixes—would play out under different rate conditions. Banks also set internal limits on how much net interest income or economic value could drop, for instance, under a 300-basis-point rate shock. If those limits are exceeded, management is required to

respond, such as by adjusting the balance sheet or increasing capital. In short, best practices combine regular risk measurement, clear policies, and hands-on oversight to ensure a bank remains prepared for interest rate swings.

4. Strategies of Major U.S. Banks in Response to Rate Shifts

Banks have adopted different strategies to navigate the recent rise in interest rates. Large, diversified banks like JPMorgan Chase and Bank of America have leveraged their broad business operations. Both saw net interest income rise as rates increased, though margins were under pressure. JPMorgan's early 2023 results showed that higher deposit margins—essentially the difference between what it earns on loans and pays on deposits—boosted revenue. Its holdings in government securities were likely protected with hedges to limit losses.

Bank of America took a slightly different approach. In Q2 2023, its net interest income rose 14% thanks to loans and leasing, though margins were squeezed (Azhar & Saini, 2023). Its investment banking and trading arms performed better than expected, while its credit card and deposit units saw roughly 15% revenue growth. BofA relied on a strong deposit base, cautiously raising deposit rates while keeping sufficient cash to meet withdrawals.

Smaller banks faced greater challenges. Silicon Valley Bank, for example, relied heavily on uninsured deposits from tech startups and invested excess funds in long-term bonds. When rates surged, those bonds lost value, and SVB had not hedged against this risk. Withdrawals by clients, combined with the need to sell assets, triggered a rapid bank run. Regulators have since highlighted SVB as a cautionary example of poor risk management. Other

mid-sized banks responded by offering variable-rate loans or raising deposit yields to retain customers. At the same time, regulators set up special facilities allowing banks to borrow against depreciated assets without losses. Table 3 indicates that big banks have more robust business and stronger risk management capabilities and strategies, enabling them to demonstrate greater resilience and stability when facing interest rate cycle fluctuations.

Table 3 Performance Ratios of All FDIC-Insured Institutions

		Asset Size Distribution				
		less Than \$100 Million	\$100 Million to \$1 Billion	\$1 Billion to \$10 Billion	\$10 Billion to \$250 Billion	Greater Than \$250 Billion
Net interest margin	% Change 22-23	15.485%	1.705%	-1.966	9.511%	15.132%
	% Change 21-22	-1.553%	3.179	7.989	7.51%	20.930%

Data source: FDIC (<https://www.fdic.gov/quarterly-banking-profile>)

Overall, the responses of big banks demonstrate the practical application of the diversification theory in the banking industry (Mulwa J M et al., 2015; Asif R & Akhter W, 2019). They have adapted mainly by using strong deposit bases and diversified income streams. Meanwhile, the business diversification provides non-interest income, which can stabilize overall incomes. This integration promotes big banks' resilience during interest rate cycles. Conversely, smaller banks with highly concentrated business may lack business diversification. Hence, they remain more exposed to rate-related risks.

5. Conclusion

To sum up, U.S. commercial banks are susceptible to interest rates. Banks' revenues initially benefited from a rise in interest income and in margins on new loans, after interest rates were lifted in 2022–2023. But the sharp run-up in rates also led to significant unrealized losses on long-term securities and more competition for deposits. Banks that managed these risks effectively — JPMorgan and Bank of America, for example — attracted deposits and diversified their businesses. Others, like Silicon Valley Bank, flopped because they bet too much on long-term assets with uninsured deposits without enough hedges. Banks have turned to asset-liability management, interest-rate hedging, and scenario analysis to help manage their rate exposure throughout. Regulators stress that an effective governance process is essential to interest rate risk management (FDIC 2014; FDIC 2025). The experience of 2022–2023 demonstrates that a bank that uses those higher rates in a prudent enough plan to its advantage can turn them into an opportunity to make a profit — and that failure to do so could make a bank vulnerable.

For students of economics or finance, the lesson is plain: interest rates affect every aspect of banking, and understanding how banks steer through these shifts is vital for financial literacy.

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