

Silicon Valley Bank: What (Should Be) Next for Banks

Raise Bank Capital – A Form of Private Deposit Insurance

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Banks manufacture tail risks...

- Liquidity management: *"We account for idiosyncratic liquidity risks. We do not plan for aggregate liquidity risks"* – Survey of Bank CFOs/CROs, post GM-Ford downgrade (Acharya-Schaefer, 2005)
- Interest-rate risk management: *"One last point about holding risk matched assets. There is no such thing. The duration and convexity exposure of a bank deposit is not known ex-ante. They are hedged using a non-causal behavioral model which has been fit to historical data. Art, not science."*

– Former Top-4 US bank Chief Investment Officer (CIO)

- Leveraged carry trades: Example – Dexia (BeNeLux, failed in 2008, then 2012)

*"And of course, the deterioration of the Euro zone situation and particularly the sovereign crisis in the peripheral economies hit very badly the group. And that's of course not a surprise for a group that still had very important short-term funding needs that was mainly present in strong exposures in peripheral countries. [...] Before 2008, it was the group's high rating granting easy access to wholesale funding that led to the situation of October 2008 with **short-term funding need of €260 billion outstanding in October 2008, i.e. 43% of total balance sheet.** [...] with very significant acceleration and buildup of the **bond portfolio was amounting at €203 billion** at the end of 2008. **Mostly carry-trades** with marginal improvement of customer access [...] that led to a very significant gearing ratio because the portfolio size was, at that time, 25 times the group equity."*

- Pierre Mariani, Chairman-Management Board & CEO, Dexia SA, Earnings Call, February 23rd, 2012

Government guarantees encourage tail-risk seeking...

- Such behavior encouraged by a variety of economic forces:
 - (Market failure) Spillovers or externalities: “not all that is to come of me is my problem”
 - (Regulatory failure) Government guarantees for banks that are mis-priced
 - Too big to fail, too many to fail, too interconnected to fail, too systemic to fail
 - Deposit insurance: With reserves less than 1.3% of insured deposits, no large bank run can be managed by the FDIC and uncertainty of resolution will likely precipitate runs by insured too
- Quantitative easing chipped in ([Acharya, Chauhan, Rajan and Steffen, 2023](#))
 - Not just an expansion of Fed balance-sheet but also of commercial banks
 - Flooded with uninsured deposits, backed by low-yielding reserves, search for yield
 - For a while it looks a profitable franchise, until the tail risk of runs materializes
 - *Liquidity dependence*, as Fed starts QE all over again: “Hotel California”, no exit, ...

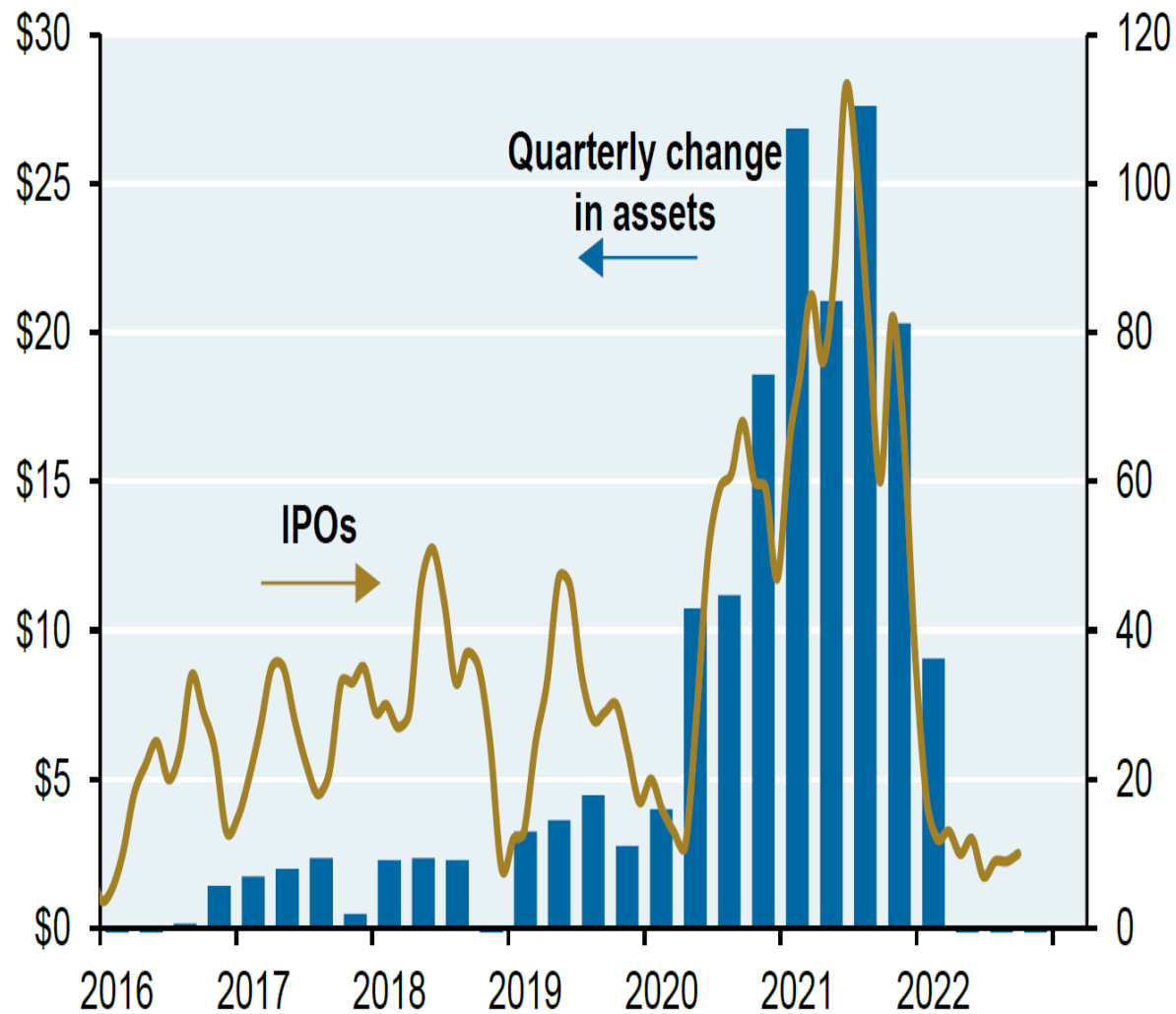
SVB and other banks

- SVB situation at hand concerns unsecured depositors and a (tail-)risk-seeking or search-for-yield strategy based on duration mismatch
 - Corporate loans and credit lines tied in to unsecured deposits via “bundling”
 - Franchise collapsed all at once triggered by tech sector losses/withdrawals, rising rates

SIVB asset growth tracks the IPO cycle

US\$, billions

Number of IPOs

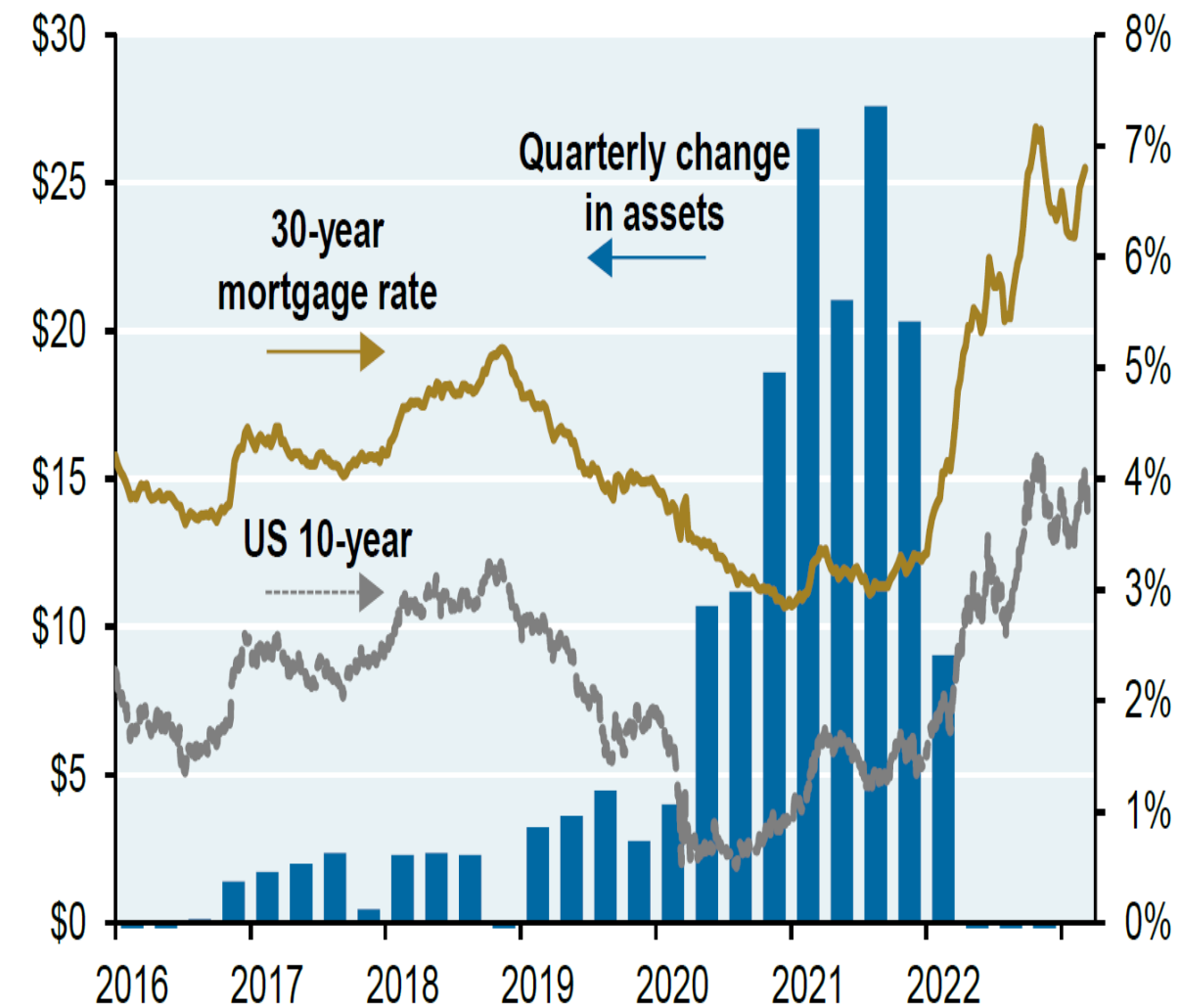


Source: Bloomberg, JPMAM. December 2022.

SIVB asset growth coincided with low yields

US\$, billions

Percent



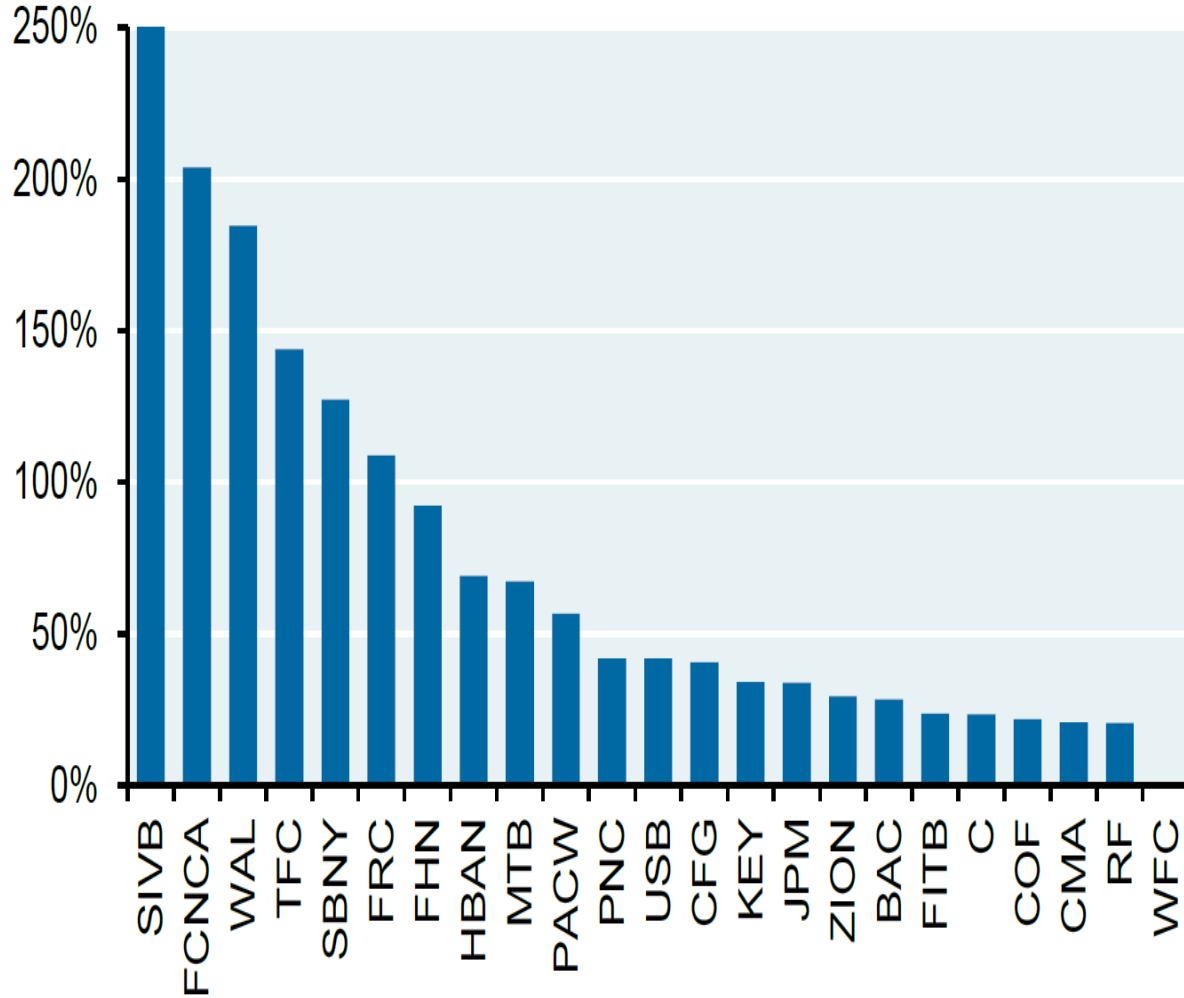
Source: Bloomberg, JPMAM. March 14, 2023.

SVB versus other banks

- SVB situation at hand concerns unsecured depositors and a (tail-)risk-seeking or search-for-yield strategy based on duration mismatch
 - Corporate loans and credit lines tied in to unsecured deposits via “bundling”
 - Franchise collapsed all at once triggered by tech sector losses/withdrawals, rising rates
- Not all banks financed themselves with uninsured deposits
 - Nevertheless, the number of banks at risk of runs remains high
 - Unrecognized equity losses, *en masse* demand for liquidity, fire sales and loss of economic stability, ... can all feed into such runs creating a loss of confidence

Balance sheet growth, Q1 2019 to Q4 2022

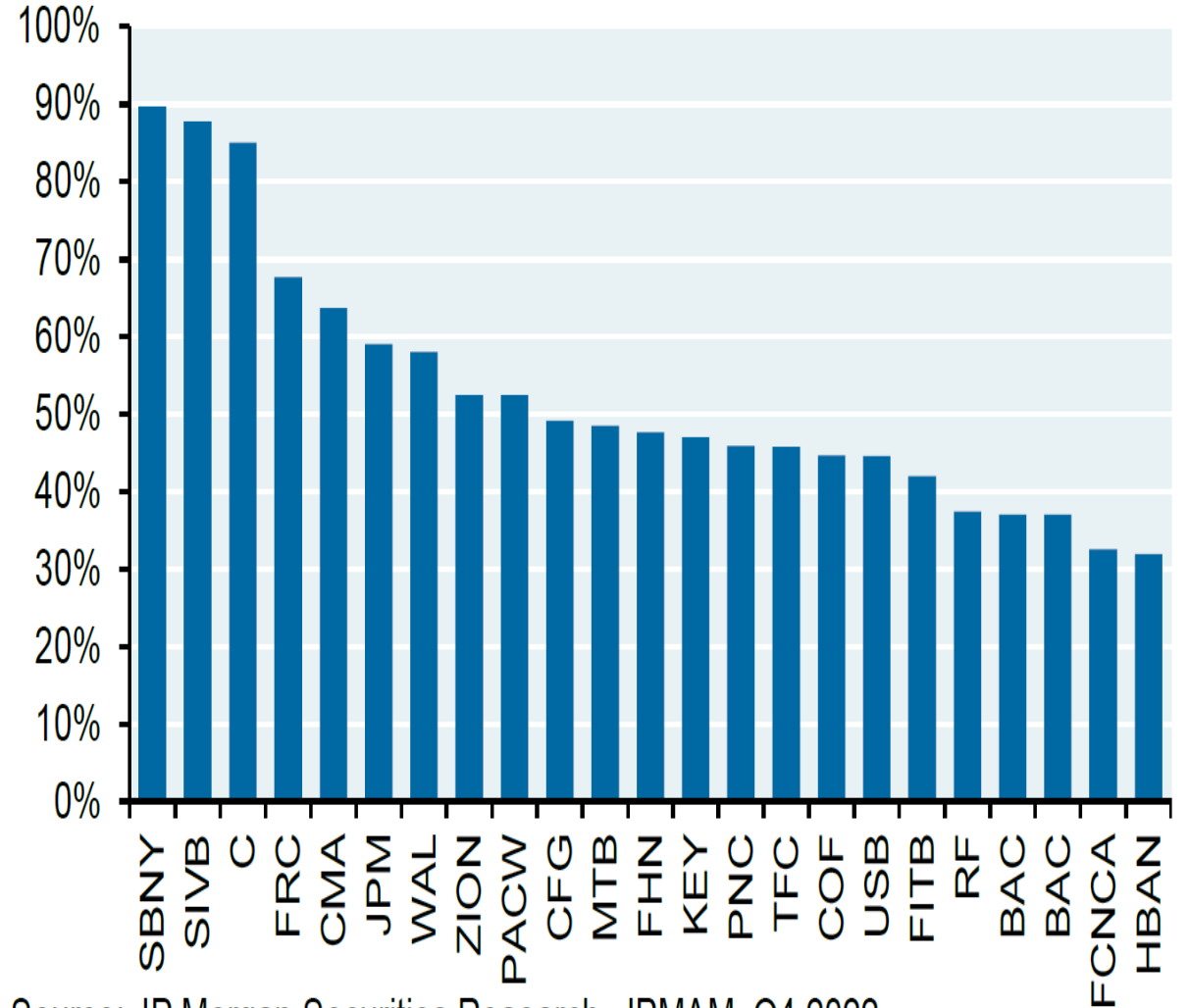
Percent



Source: JPMAM. Q4 2022.

Uninsured share of customer deposits

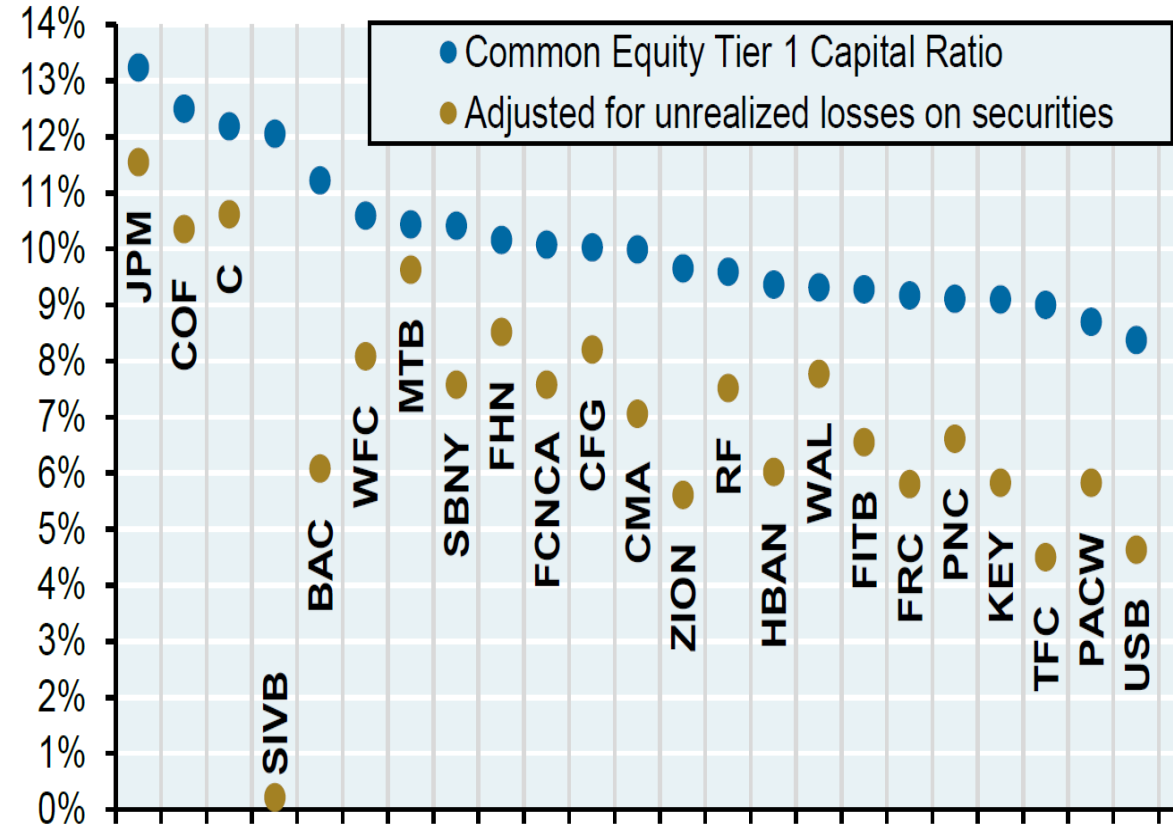
Percent above FDIC guarantee threshold



Source: JP Morgan Securities Research, JPMAM. Q4 2022.

Impact of unrealized securities losses on capital ratios

Percent

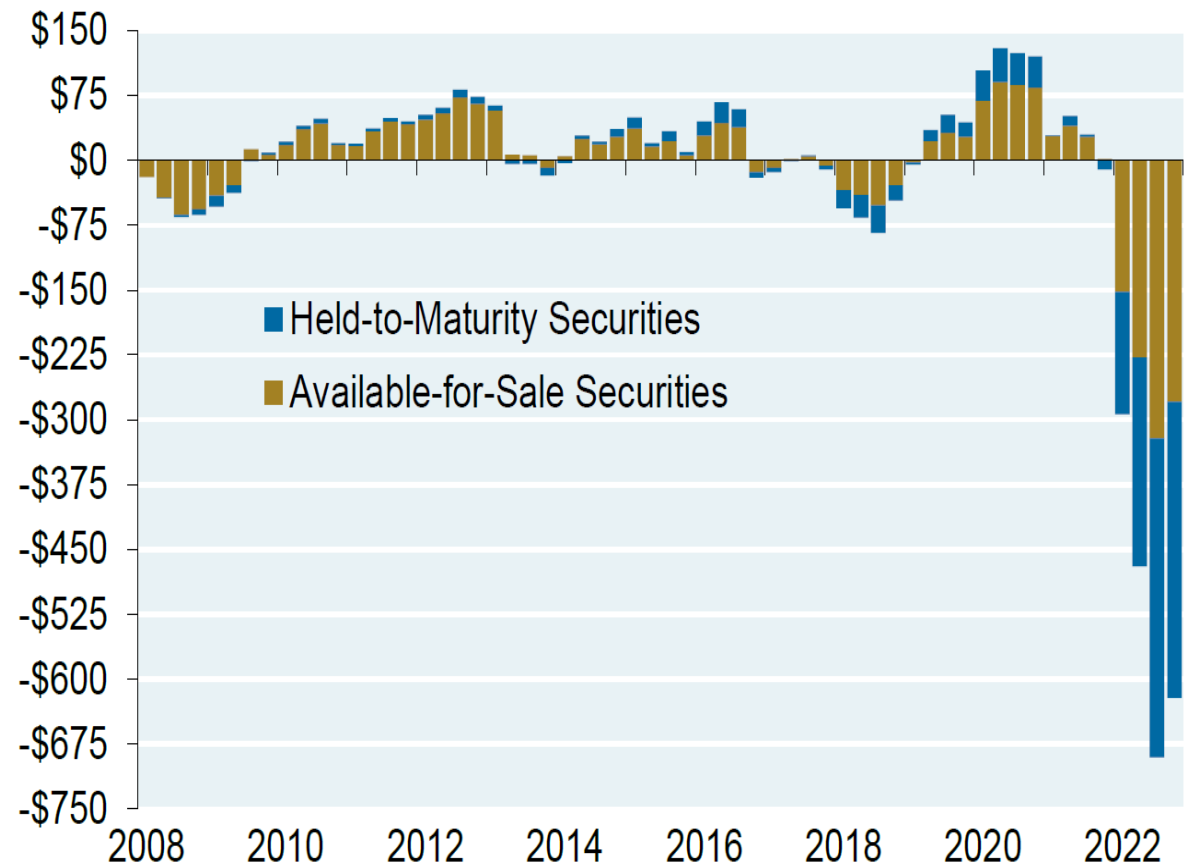


Source: JPMAM, Q4 2022. See page 3 for methodology

For many banks: Mark-to-market capital, which reflects liquidation value of securities (without fire-sale discounts), is already below comfort zone of 8-10% Common Equity Tier 1 Capital Ratio

FDIC Q4 unrealized bank losses on investment securities

US\$, billions

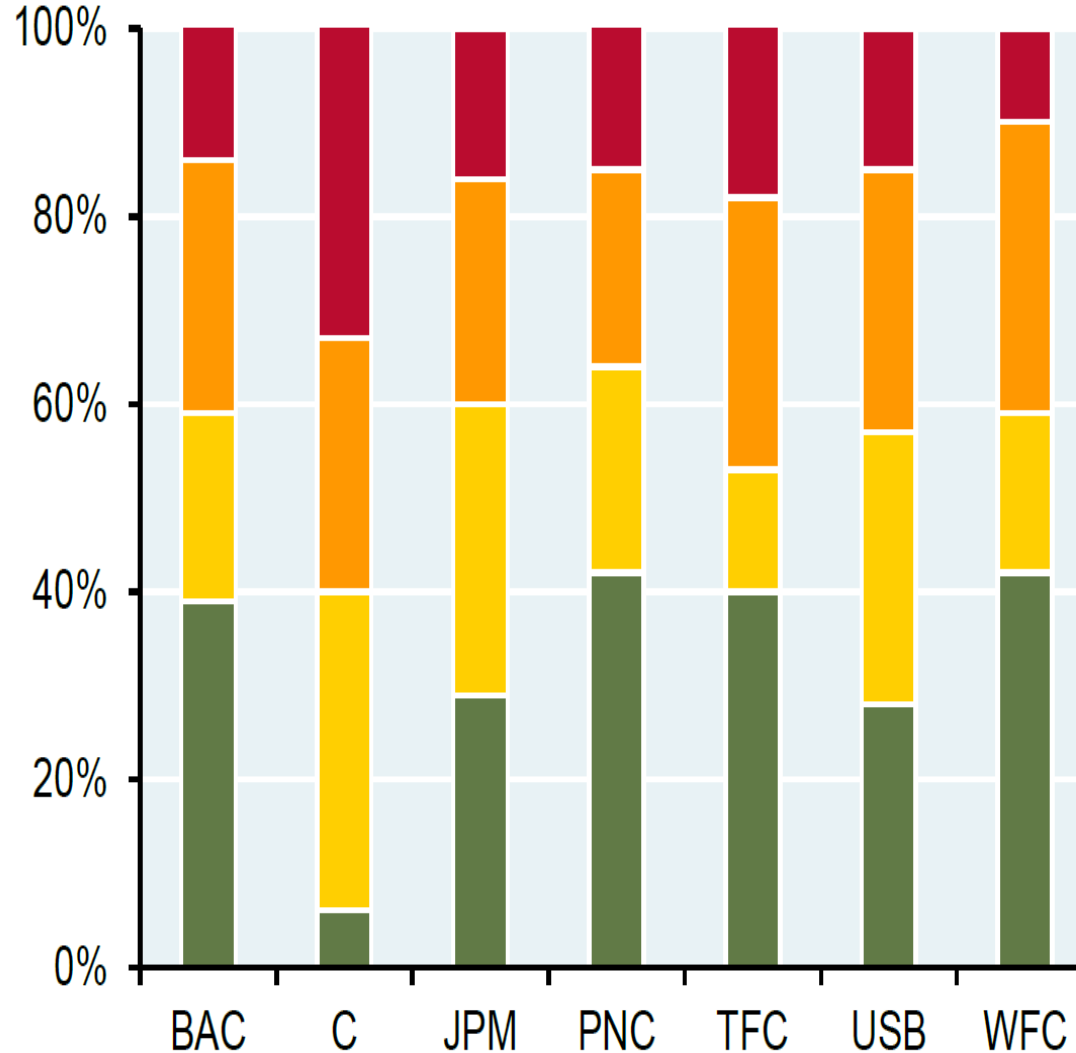


Source: FDIC. Q4 2022.

Total unrealized losses in this rate-hike cycle relative to the previous highlight saliently the “scale” of the problem

Deposits by type for large select banks

Percent



■ Non-operational wholesale

■ Other retail

■ Operational wholesale

■ Stable retail

Other retail: foreign retail deposits, accounts that exceed FDIC insurance limits, CDs when client doesn't have relationship, some wealth management deposits

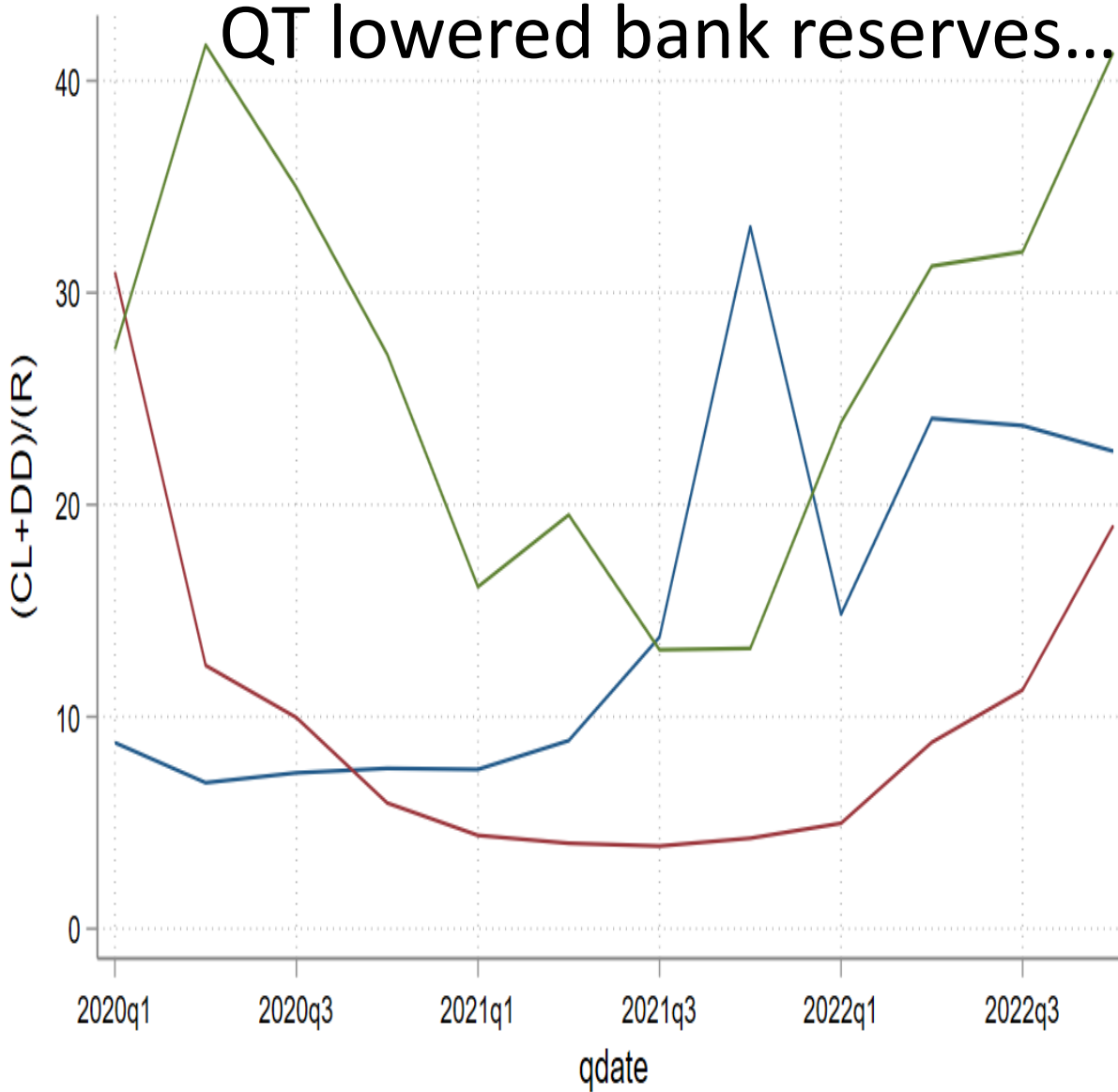
For largest banks, which is where we care the most about failure risk...

At least 60% of deposits would need to be assumed to be runnable in stress.

For some, much more...

Source: JP Morgan Securities Research, Vivek Juneja. 2023.

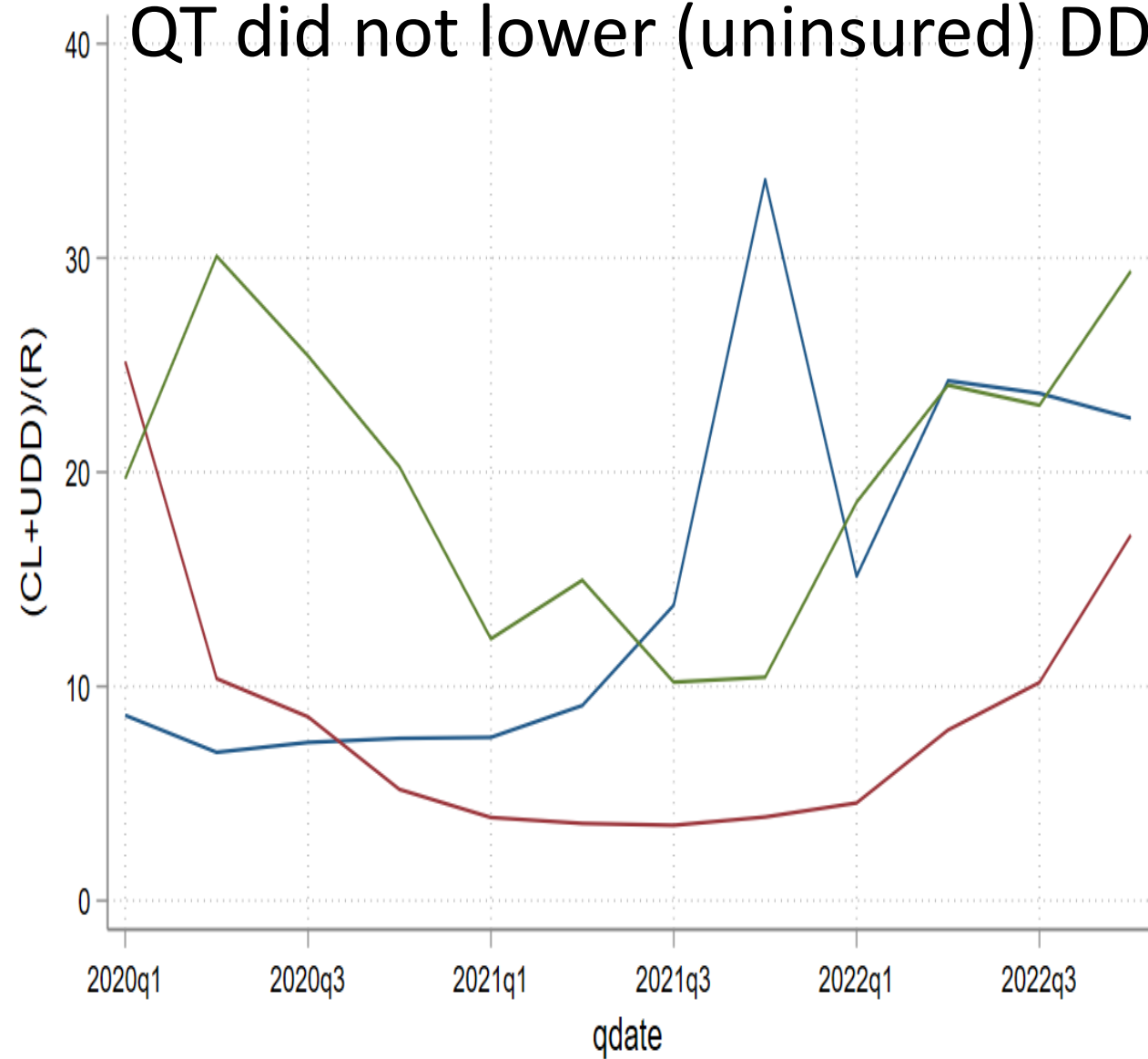
QT lowered bank reserves...



— SVB Financial Group — Signature Bank — First Republic

CL: Credit Lines, DD: Demandable Deposits, R: Reserves, EL: Eligible Assets, UDD: Uninsured Demandable Deposits

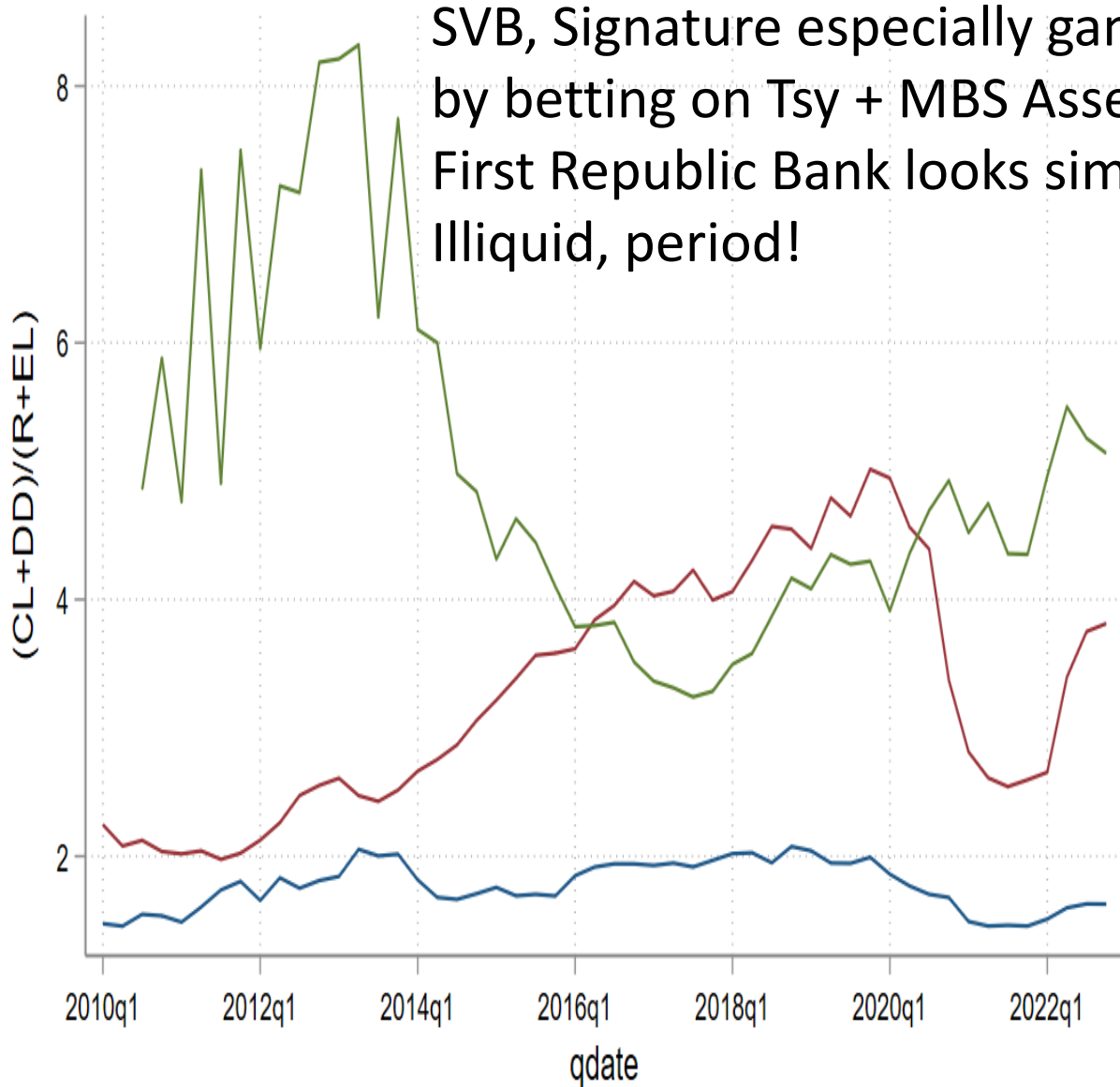
QT did not lower (uninsured) DD



— SVB Financial Group — Signature Bank — First Republic

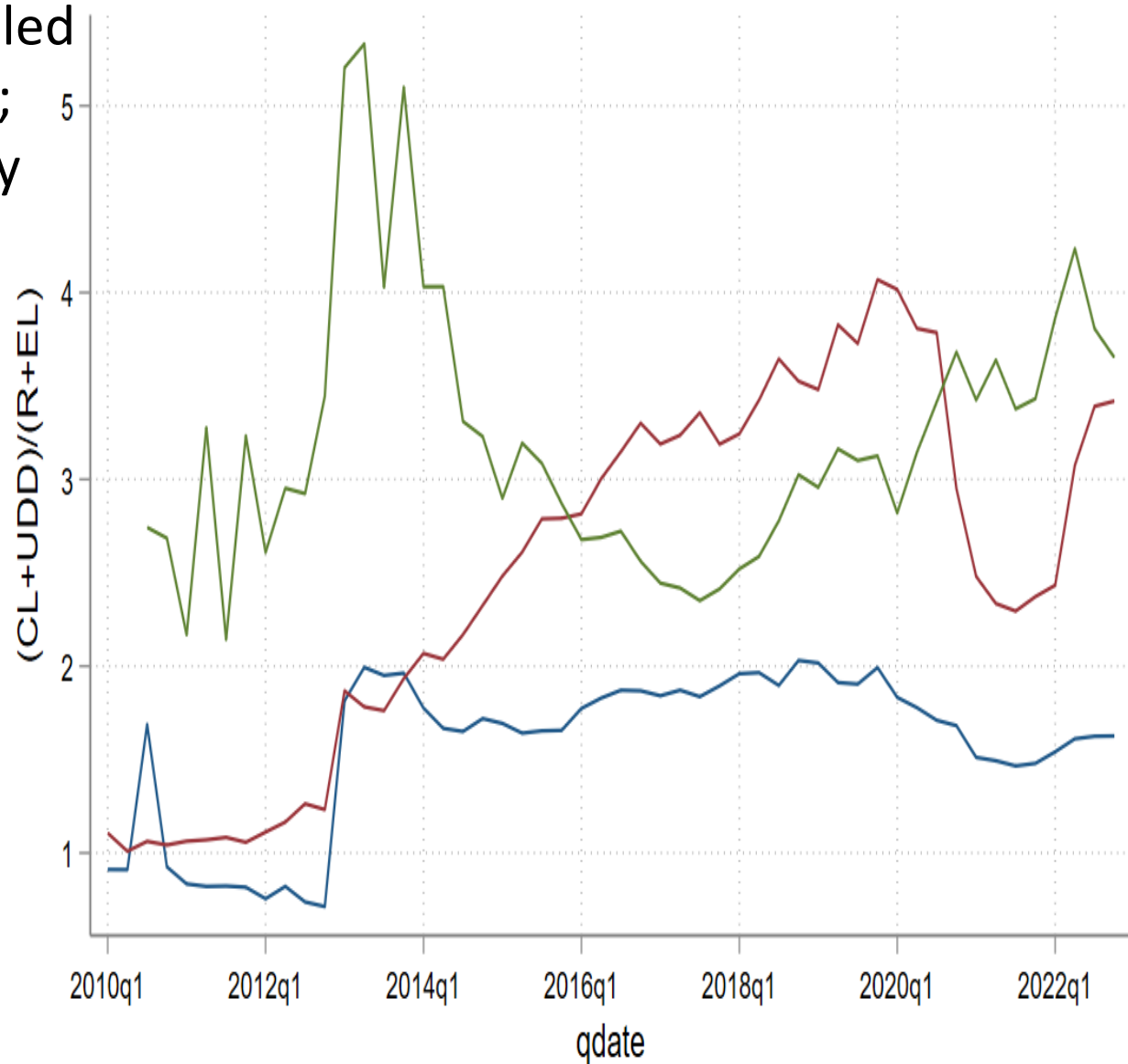
CL: Credit Lines, DD: Demandable Deposits, R: Reserves, EL: Eligible Assets, UDD: Uninsured Demandable Deposits

SVB, Signature especially gambled by betting on Tsy + MBS Assets; First Republic Bank looks simply Illiquid, period!



— SVB Financial Group — Signature Bank — First Republic

CL: Credit Lines, DD: Demandable Deposits, R: Reserves, EL: Eligible Assets, UDD: Uninsured Demandable Deposits



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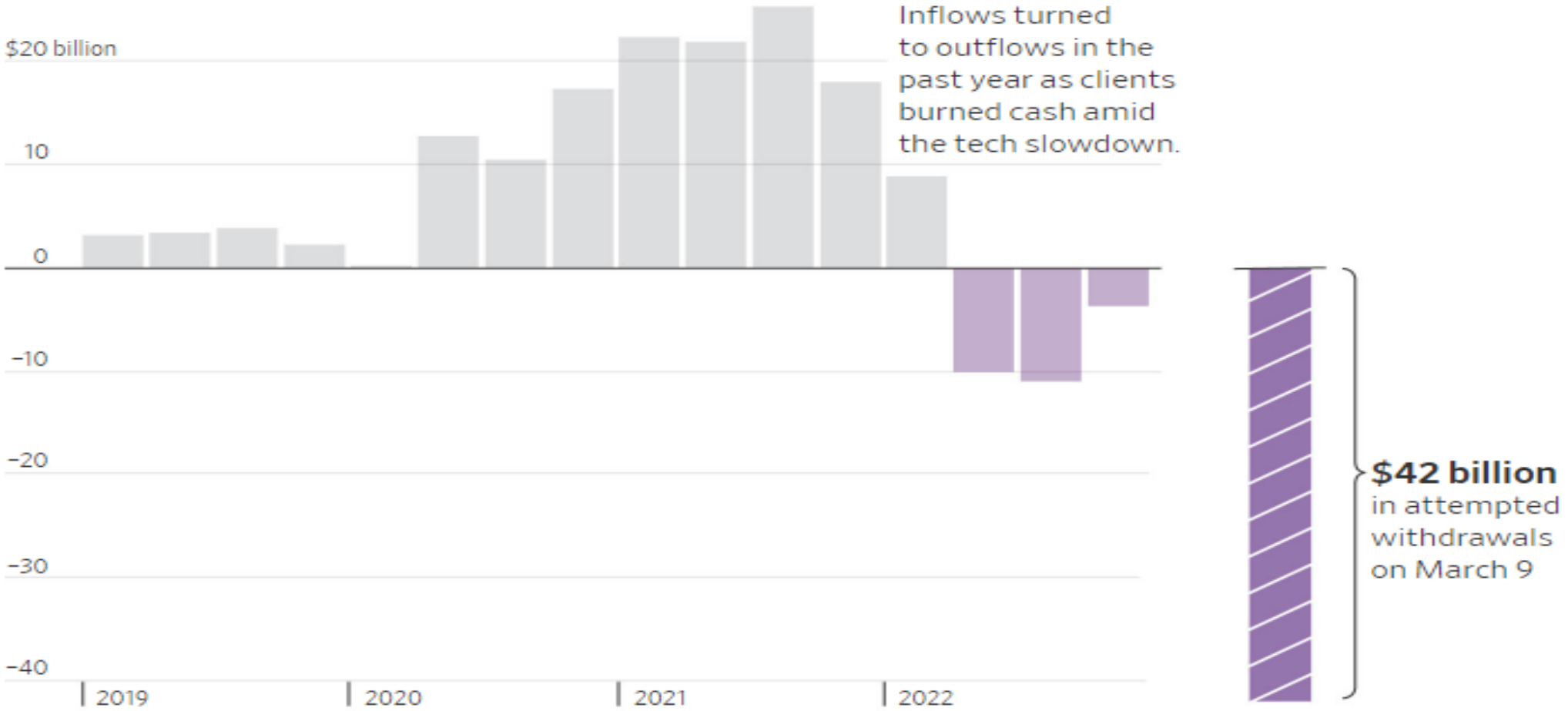
The few hedges in places were VOLUNTARELY taken off in 2022!

(Dollars in millions)	December 31, 2022			December 31, 2021		
	Notional or Contractual Amount	Fair Value		Notional or Contractual Amount	Fair Value	
		Derivative Assets (1)	Derivative Liabilities (1)		Derivative Assets (1)	Derivative Liabilities (1)
Derivatives designated as hedging instruments:						
<i>Interest rate risks:</i>						
Interest rate swaps (2)	\$ 550	\$ —	\$ —	\$ 10,700	\$ 18	\$ —
<i>Currency exchange risks:</i>						
Foreign exchange contracts	778	17	—	—	—	—
Foreign exchange contracts	616	—	56	—	—	—
Total derivatives designated as hedging instruments		17	56		18	—
Derivatives not designated as hedging instruments:						
<i>Currency exchange risks:</i>						
Foreign exchange contracts	1,763	42	—	701	16	—
Foreign exchange contracts	2,184	—	29	62	—	2
<i>Other derivative instruments:</i>						
Equity warrant assets	375	383	—	322	277	—
Contingent conversion rights	92	12	—	—	—	—
Client foreign exchange contracts	10,145	262	—	8,245	146	—
Client foreign exchange contracts	9,960	—	257	7,764	—	126
Total return swaps	119	40	—	—	—	—
Client foreign currency options	866	19	—	688	9	—
Client foreign currency options	866	—	19	688	—	9
Client interest rate derivatives (2)	2,391	128	—	2,178	99	—
Client interest rate derivatives (2)	2,709	—	195	2,315	—	101
Total derivatives not designated as hedging instruments		886	500		547	238
Total gross derivatives		903	556		565	238
Less: netting adjustment (3)		(351)	(223)		(137)	(120)
Total derivatives		\$ 552	\$ 333		\$ 428	\$ 118

Interest Rate Swaps

To manage interest rate risk on our AFS securities portfolio, we enter into pay-fixed, receive-floating interest rate swap contracts to hedge against exposure to changes in the fair value of the securities resulting from changes in interest rates. We designate these interest rate swap contracts as fair value hedges that qualify for hedge accounting under ASC 815 and record them in other assets and other liabilities. Refer to Note 16—“Derivative Financial Instruments” of the “Notes to the Consolidated Financial Statements” under Part II, Item 8 of this report for additional information.

SVB Financial deposits, quarterly net change



Sources: company filings (quarterly); California regulators (March 9)

How the bank failed?

The regulatory response

- Friday (March 10, 2023): SVB closed
- Sunday: Signature bank closed
- Sunday: FDIC insured all deposits of both banks
- Sunday: Fed announced Bank Term Funding Program
 - Lend to banks, savings associations, and credit unions
 - Collateral must be government-guaranteed securities (Treasuries and MBS)
 - Securities valued at par with no haircut → loans are undercollateralized
 - Treasury provides a backstop for Fed losses
- Ongoing support measures for the First Republic Bank...
 - Friday (March 17, 2023): Banks putting together funds to deposit into First Republic did not restore confidence in the bank

So what should be done with banks now?

- Backstop it all, provide guarantees?
 - This helps stem runs, but does not restore confidence or bring down the vol, as in 2007-09
 - Another variant of risk-seeking: Remaining under-capitalized. Healthier banks may skip too
 - The social problem is to produce the “optimal” quantity of deposits, so get risks internalized
- What worked in the past can provide some guidance...

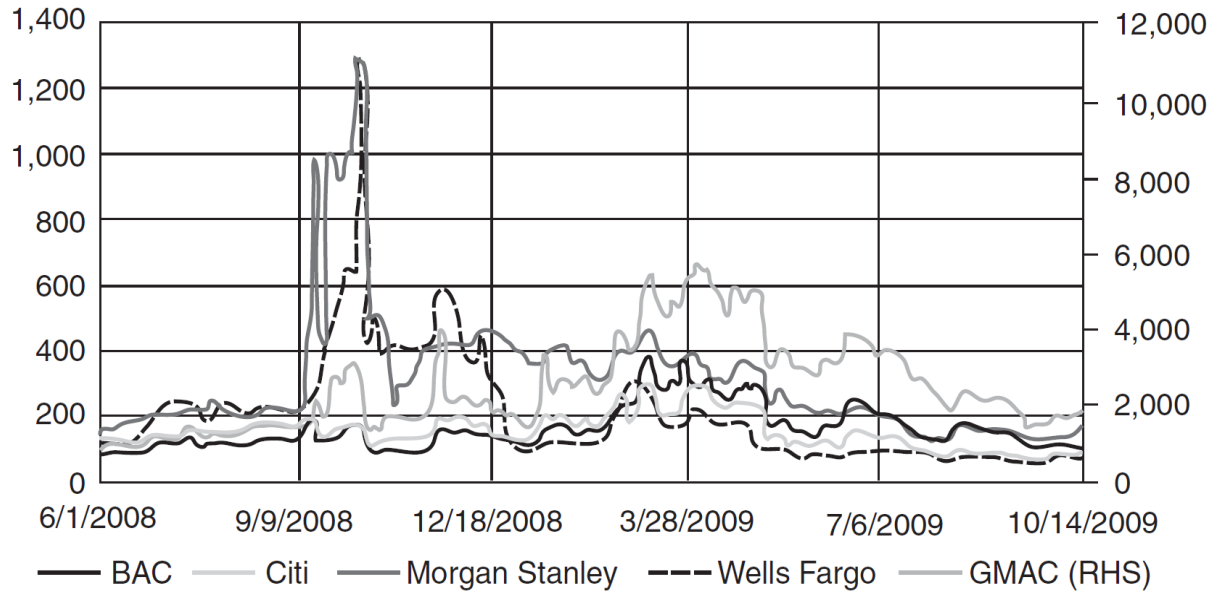


FIGURE 4.1 Five-Year Maturity Senior CDS Spreads, G1

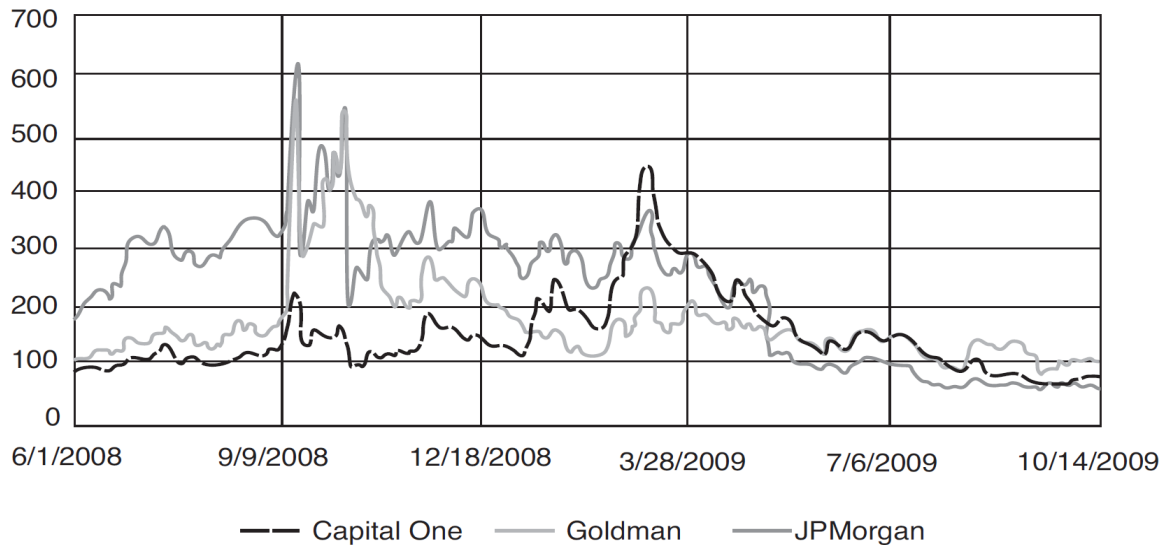


FIGURE 4.2 Five-Year Maturity Senior CDS Spreads, G2

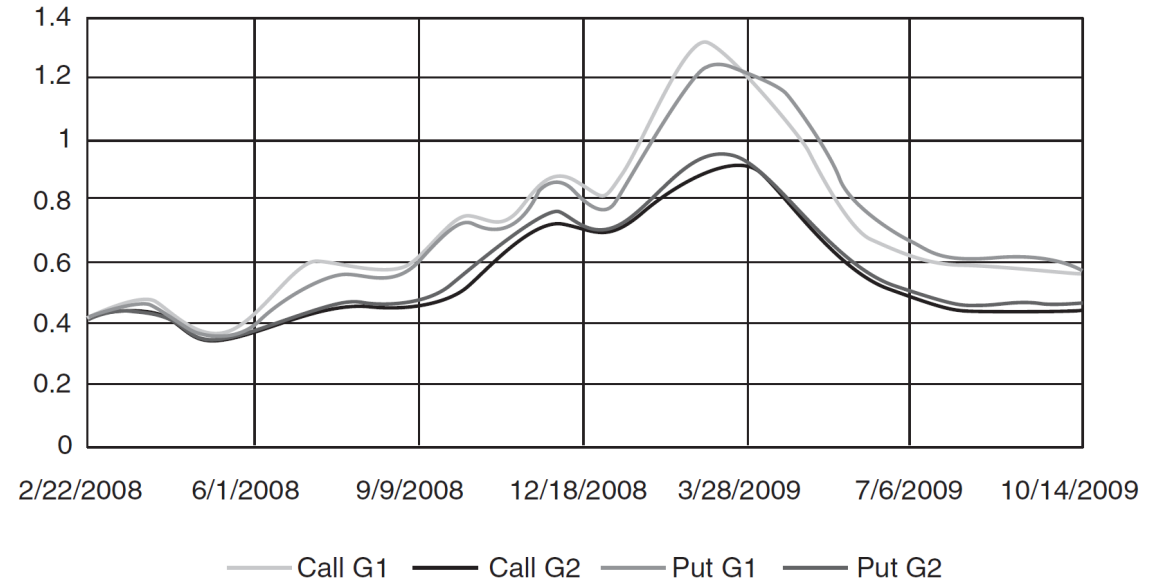


FIGURE 4.3 Average Groupwise Implied Volatilities

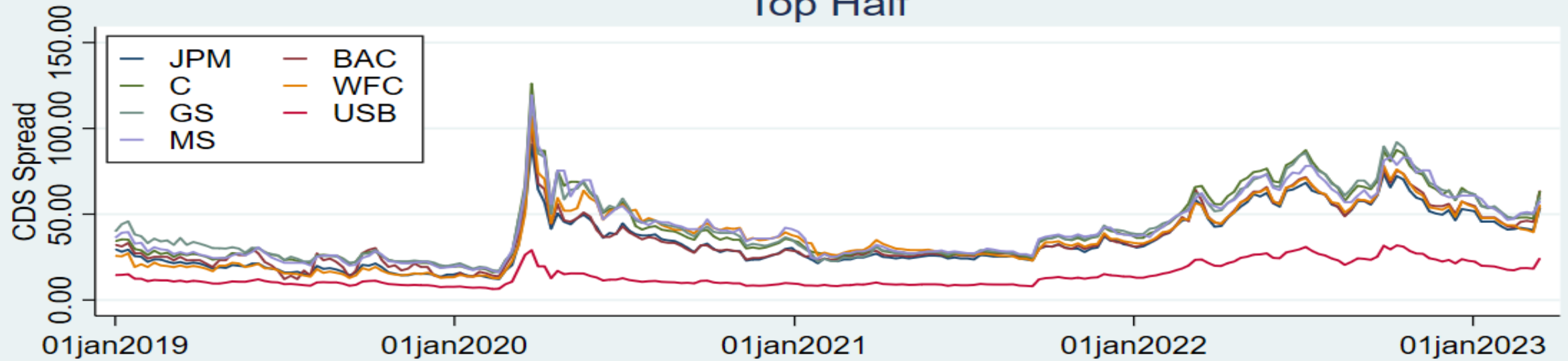
G1: Required to raise capital after stress test of Feb-May 2009

G2: Not required to raise capital after stress test

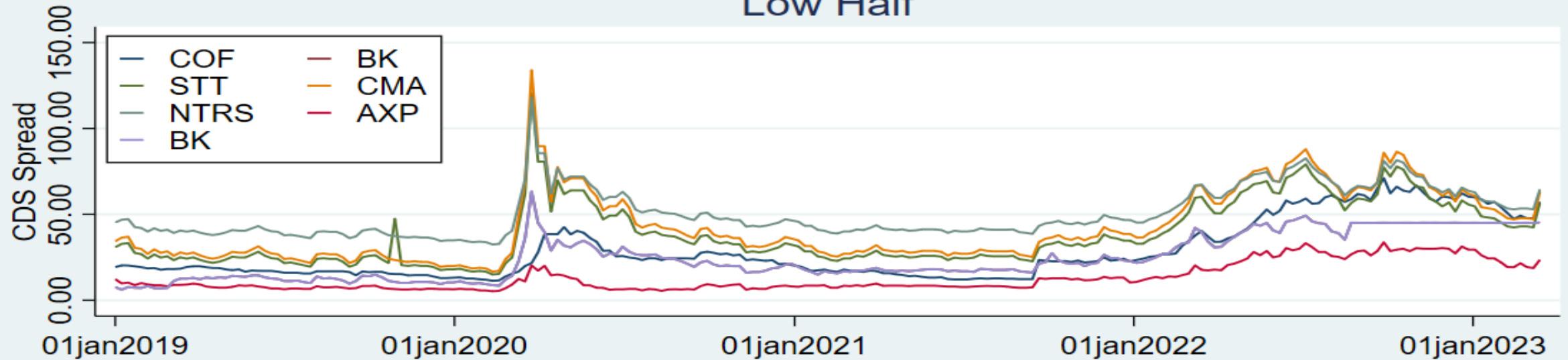
Source: Chapter 4, "Measuring Systemic Risk", Viral V. Acharya, Christian Brownlees, Robert Engle, Farhang Farazmand, and Matthew Richardson, in *Regulating Wall Street*, NYU Stern (Wiley), 2011.

1-Year CDS Spread for Top US Banks by Assets

Top Half

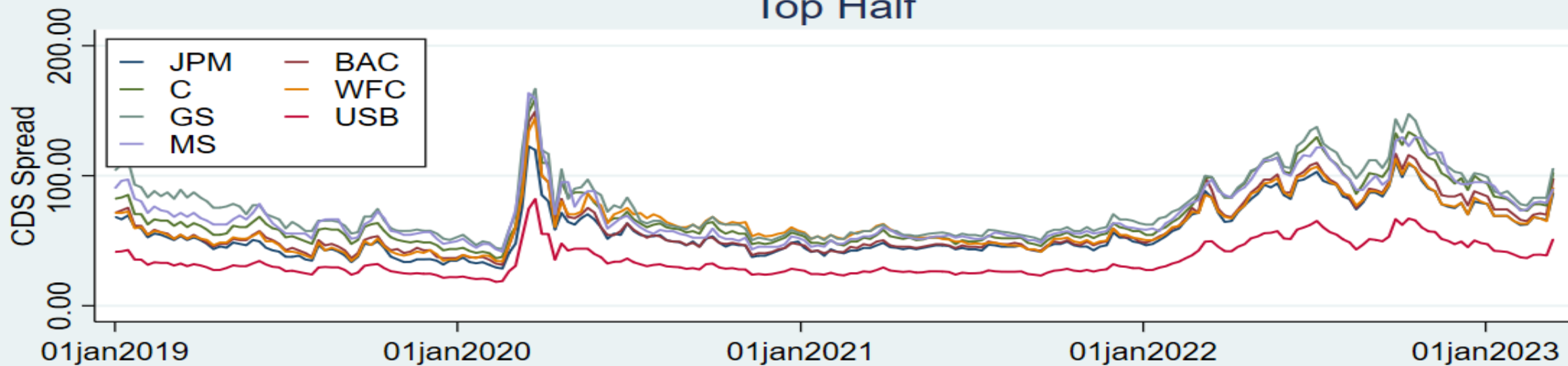


Low Half

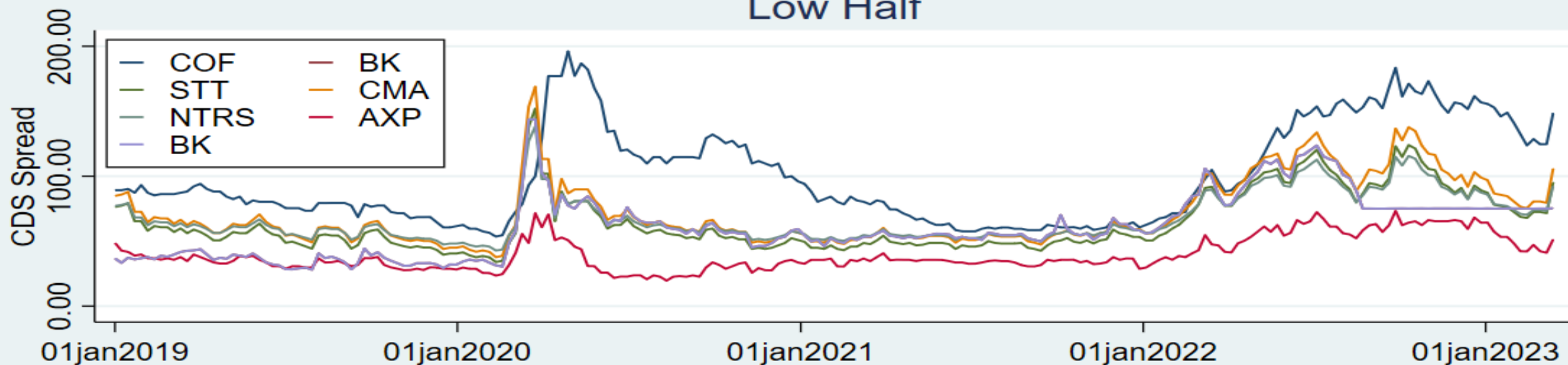


5-Year CDS Spread for Top US Banks by Assets

Top Half

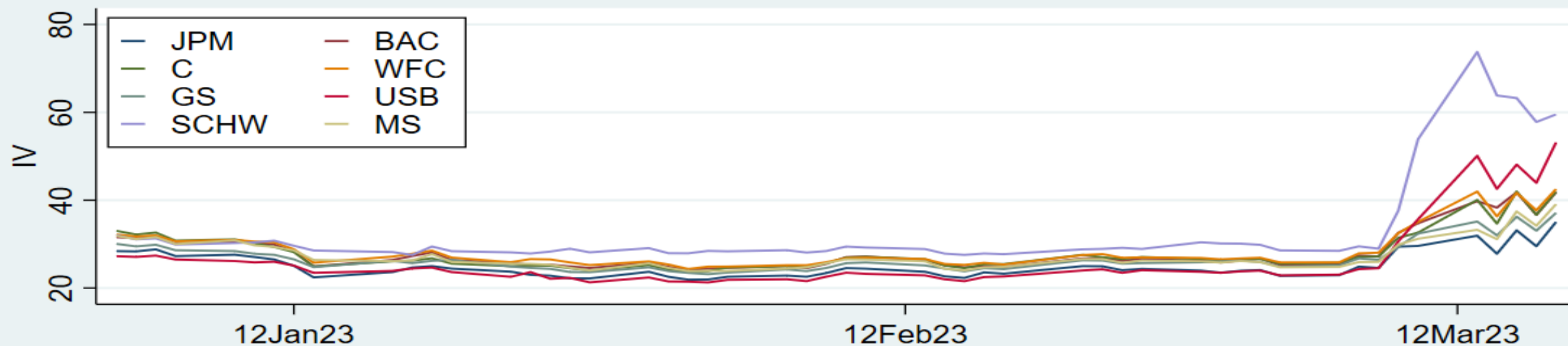


Low Half

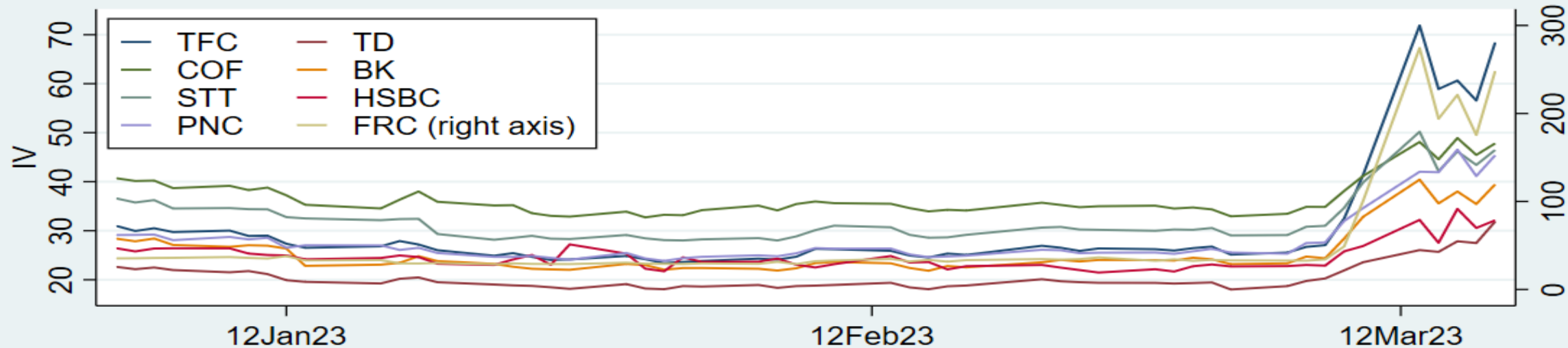


3-Month ATM Implied Volatility for Top US Banks by Assets

1st Quartile

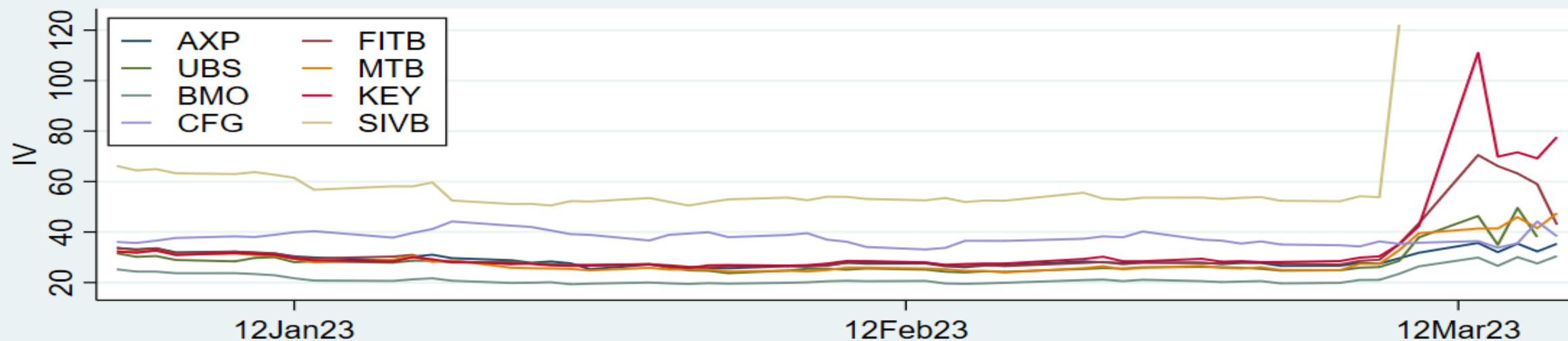


2nd Quartile

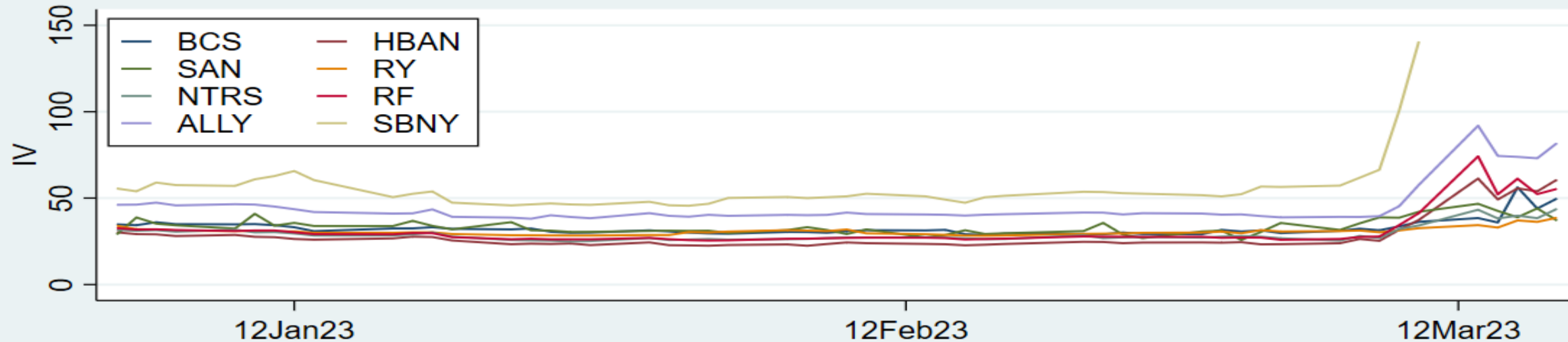


3-Month ATM Implied Volatility for Top US Banks by Assets (2)

3rd Quartile



4th Quartile



So what should be done with banks now?

- Backstop it all, provide guarantees?
 - This helps stem runs, but does not restore confidence or bring down the vol, as in 2007-09
 - Another variant of risk-seeking: Remaining under-capitalized. Healthier banks may skip too
 - The social problem is to produce the “optimal” quantity of deposits, so get risks internalized
- What worked in the past can provide some guidance...
- Stress tests and capital-raising, as in Feb-July 2009, but for stagflation (poly-crisis)
 - Mark capital honestly in Asset Quality Review for rate hike + recession + house-price declines
 - Stress it for plausible losses and cross-check with independent metrics like [NYU Stern's SRISK](#)
 - Get banks to raise capital or sell assets/franchise to more valuable banks
 - If not raise it for them via government-funded (preferred) stakes in equity
- It is best to assume ALL debts, including insured deposits, are payable
 - “Robust” approach to financial stability (Note: Market equity should reflect franchise value)
 - Recognizes fiscal limits on deposit insurance, guarantees, the size of Fed's put, ...

First Republic Bank

March 2023

April 2021

Oct 2022



First Republic Bank/CA SRISK

SVB

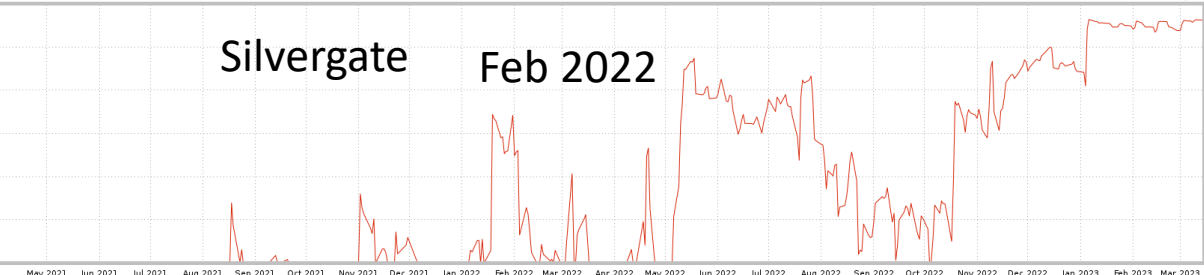
Feb 2022



SVB Financial Group SRISK

Silvergate

Feb 2022



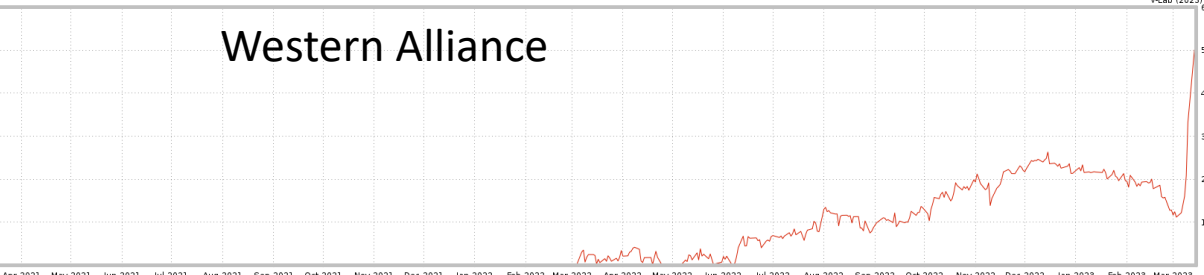
Silvergate Capital Corp SRISK

Comerica



Comerica Inc SRISK

Western Alliance



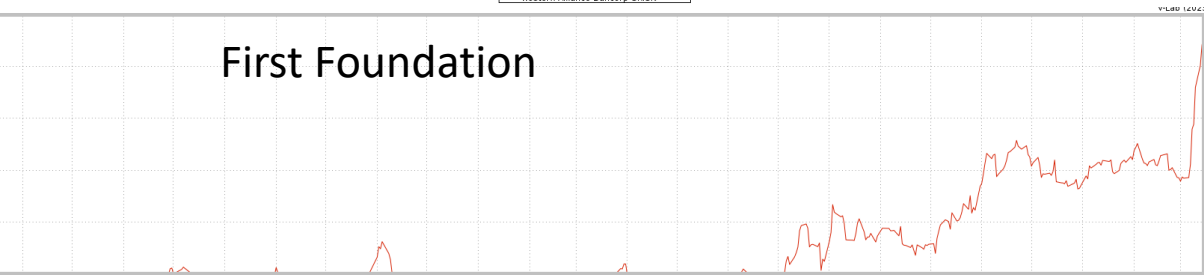
Western Alliance Bancorp SRISK

KeyCorp



KeyCorp SRISK

First Foundation



First Foundation Inc SRISK

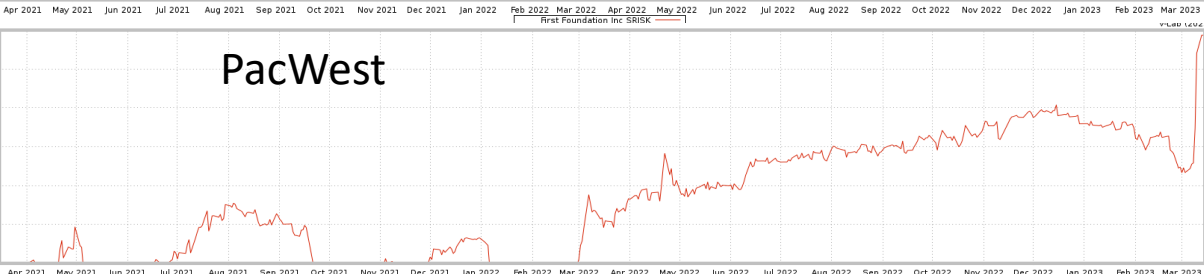
Signature

March 2022



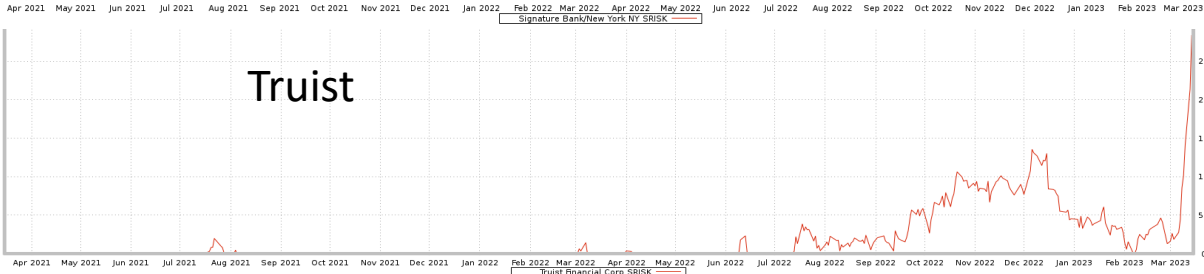
Signature Bank/New York NY SRISK

PacWest



PacWest Bancorp SRISK

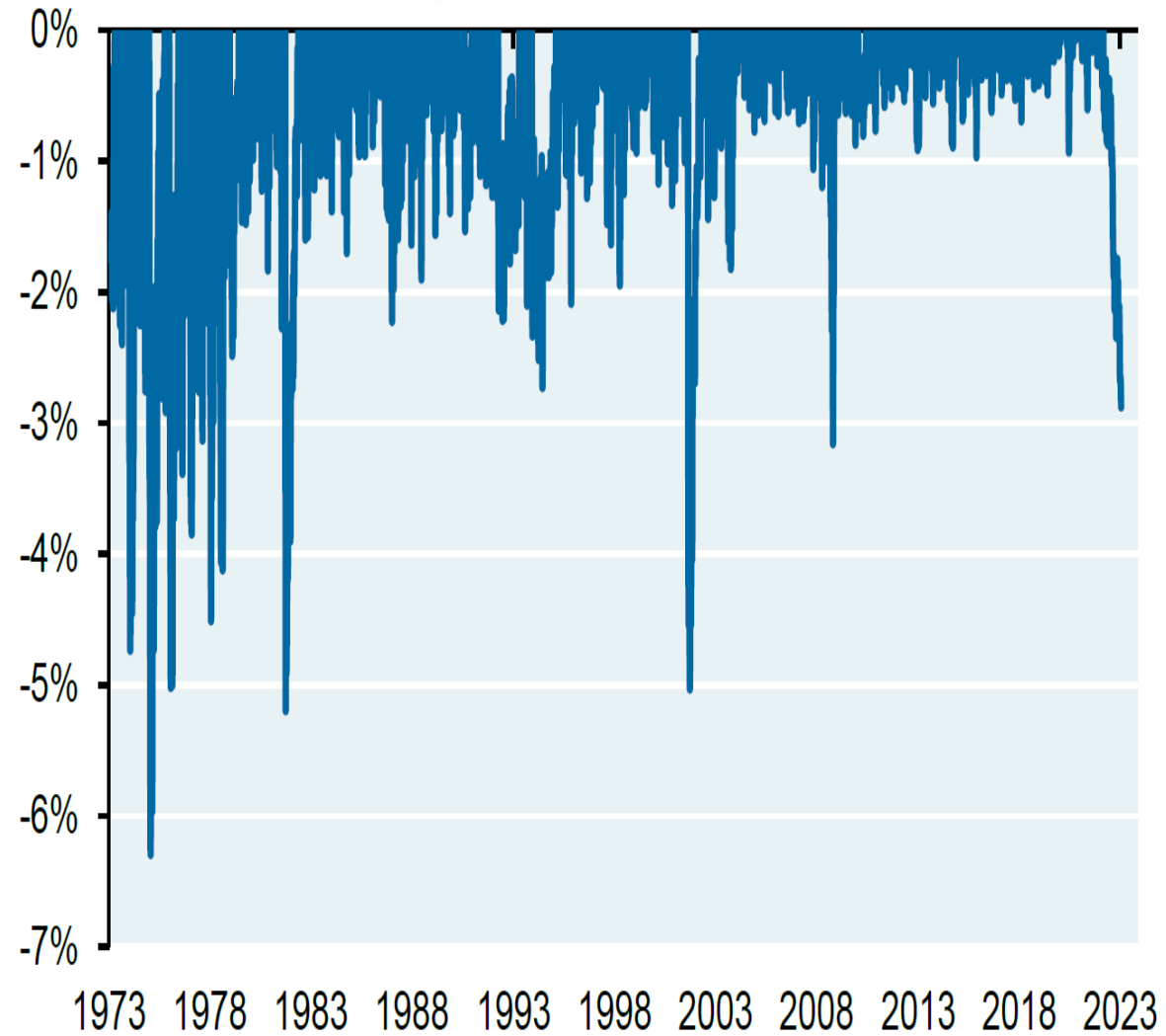
Truist



Truist Financial Corp SRISK

Drawdown of US commercial bank deposits

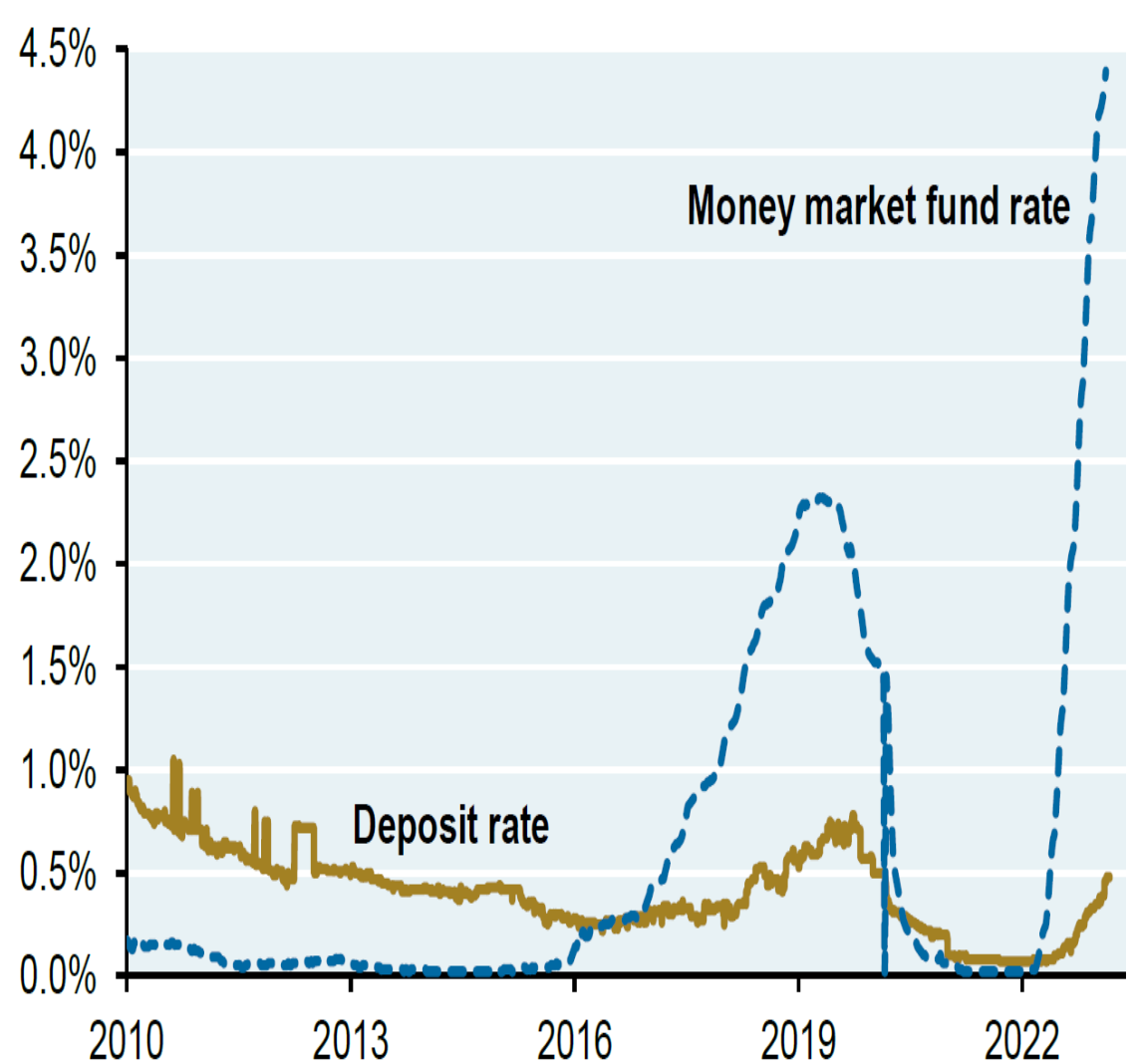
Percent, drawdown from peak levels



Source: Bloomberg, JPMAM. March 1, 2023.

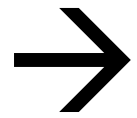
Money market net yield vs bank deposit rates

Percent



Source: Bloomberg, JPMAM. March 13, 2023.

Leveraged carry trades + Aggregate risk



Slow run first, and then fast...

Solution:

Bank capital: Mark it, stress it, raise it

Appendix: Banks List

Bank name	ID	Bank name	ID
J.P. Morgan Chase & Co.	JPM	First Republic Bank	FRC
Bank of America Corporation	BAC	American Express Company	AXP
Citigroup Inc.	C	SVB Financial Group	SIVB
Wells Fargo & Company	WFC	Fifth Third Bancorp	FITB
Goldman Sachs	GS	UBS Americas Holding	UBS
Morgan Stanley	MS	M&T Bank Corporation	MTB
U.S. Bancorp	USB	BMO Financial Corp.	BMO
Charles Schwab Corporation	SCHW	Keycorp	KEY
PNC Financial Services Group	PNC	Ally Financial Inc.	ALLY
Truist Financial Corporation	TFC	Barclays U.S.	BCS
TD Group	TD	Huntington Bank	HBAN
Capital One	COF	Santander Holdings U.S.A.	SAN
Bank of New York Mellon	BK	RBC U.S.	RY
State Street Corporation	STT	Northern Trust Corporation	NTRS
HSBC North America	HSBC	Regions Financial Corporation	RF
Citizens Financial Group	CFG	Signature Bank	SBNY