Capital Markets Strategy
Essential inCights for the C-Suite

MUFG

Crisis of Confidence
The Impact of SVB on Financial Stability, Fed Policy & Markets

MAR 2023

Silicon Valley Bank:
An Outlier Among Peers

svb›

Unusually large bank, below more stringent TBTF regulatory threshold
16th largest US bank, but $210 bn assets below $250 bn "systemically significant" threshold

"Niche" business, heavily reliant on Tech / VC / life science
Non-traditional deposit base, low loan-to-deposit ratio

Large, non-traditional deposit funding base
Less than 10% of deposits from "stickier" domestic retail; largely tech / VC

Low loan-to-deposit ratio
Smaller lending book given tech / VC customer base; therefore larger securities portfolio

Large HTM investment portfolio
Investment portfolio heavily HTM, more vulnerable to mark-to-market in event of forced asset sales

Unusually high exposure to rate risk in long duration portfolio
Large HTM portfolio in higher yielding, longer duration USTs & MBS over Fed reserves and T-Bills

Contents

Global Corporate & Investment Banking
Capital Markets Strategy Team

Tom Joyce

Managing Director
Capital Markets Strategist
New York, NY

Tom.Joyce@mufgsecurities.com
(212) 405-7472

Hailey Orr

Director
Capital Markets Strategist
New York, NY

Hailey.Orr@mufgsecurities.com
(212) 405-7429

Stephanie Kendal

Associate
Capital Markets Strategist
New York, NY

Stephanie.Kendal@mufgsecurities.com
(212) 405-7443

AUTHORS

1. A Closer Look at Silicon Valley Bank

Financial Stability Concerns

On Friday, March 10, Silicon Valley Bank became the largest US bank ($210 bn Assets, 16th largest bank in the US) to go into FDIC receivership since 2008. SVB was the second west coast lender to collapse in three days, raising systemic and contagion concerns across global markets.

Silicon Valley Bank

Assets: $209 bn

Deposits: $175.4 bn

Dec 31 Market Cap: $13.6 bn

Recent Developments:

- 2021 deposits doubled; heavily concentrated in longer-dated USTs
- ALM policy errors and mark-to-market losses exceeded equity base
- Failed capital raise followed by $42 bn deposit run on March 9
- Entered FDIC receivership on Friday, March 10

Silvergate Capital

Assets: $11.4 bn

Deposits: $6.3 bn

Dec 31 Market Cap: $550 mn

Recent Developments:

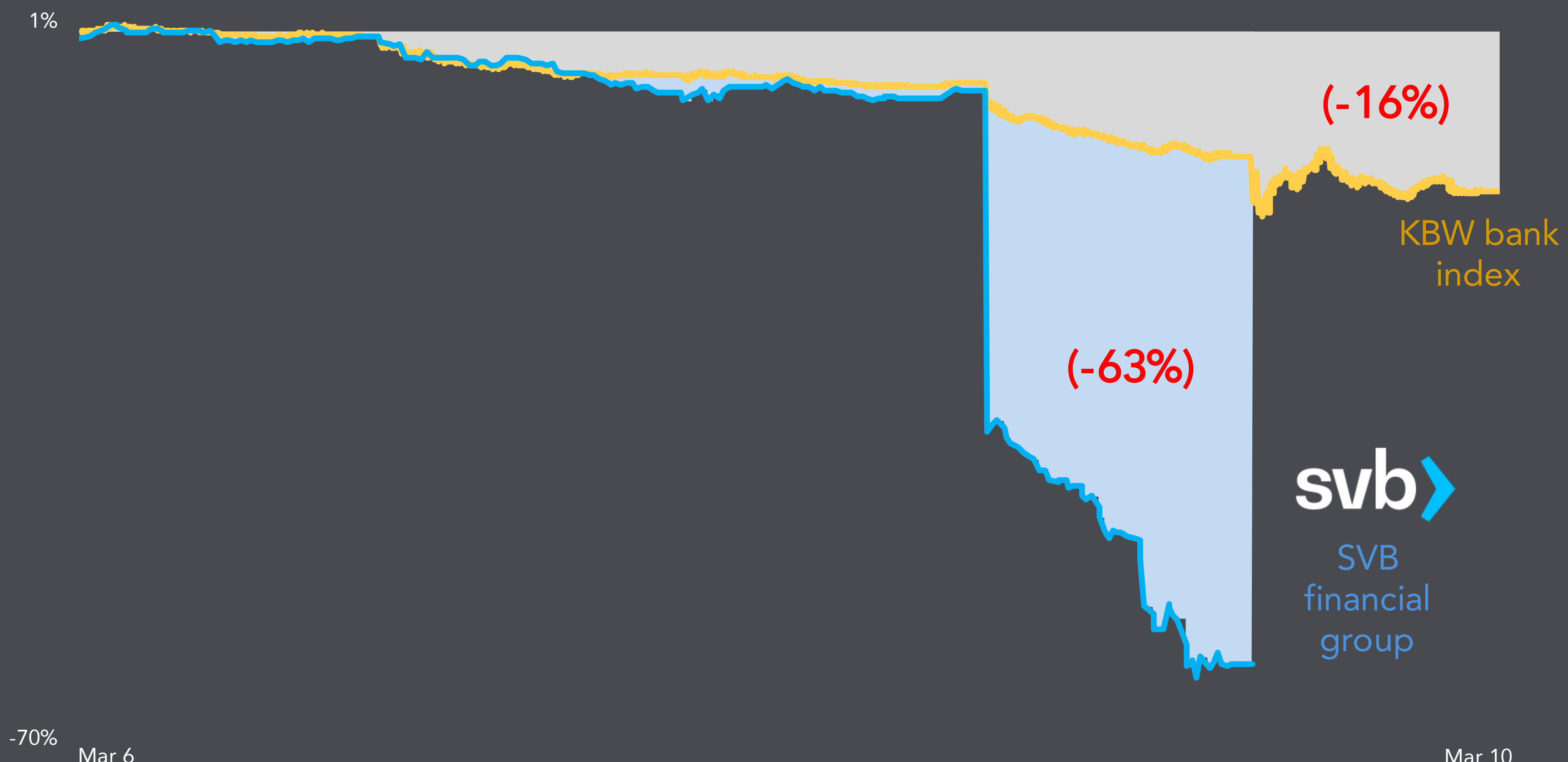
- Founded in 1988; business pivot to digital asset industry in 2013
- Excessive business concentration in volatile and risky cryptocurrency asset class
- Deposit run from $12 bn to $4 bn in Q4, post FTX failure, forced selling securities at steep losses
- Announced voluntary wind down and liquidation on Wednesday, March 8

Source: All balance sheet and market data as of Dec 31, 2022. Company filings. Bloomberg. WSJ. Silicon Valley Bank market ca p based on parent company SVB Financial Group.

Bank Stocks Under Pressure Amidst SVB Decline

The KBW Bank Index of 24 lenders declined 16% from March 6-10, suffering its worst week since COVID began 3 years ago. SVB's stock price declined over 60% on Thursday before trading was halted. The S&P 500 declined 4.5%, its largest weekly decline since September.

KBW index and SVB financial group performance March 6 – March 10



Source: (1) Bloomberg. Data as of March 11, 2023.

A Closer Look at Silicon Valley Bank

svb›

SVB was an outlier among its peer group in terms of size, customer profile and investment imbalances. While a few regional banks of similar risk profile could also come under pressure, we believe the US banking system in aggregate is very strong. The "unintended consequences" of a large bank failure are also difficult to anticipate.

Largest Post GFC Bank Failure: With $210 bn of assets (2/3 of Washington Mutual), SVB was the 16th largest US bank, and the largest to go into FDIC receivership since 2008. Regulators noted both inadequate liquidity and insolvency in the decision to shut down the bank.

Deposit Surge: US venture capital-backed technology companies raised $330 bn in 2021, double the prior year. SVB's deposit base doubled from $62 bn to $124 bn in just 12 months, triple the rate of deposit growth at large US money center banks.

Non-Traditional Deposit Base: Less than 10% of SVB's $172 bn deposit base came from "stickier" US domestic retail, with an unusually high reliance on technology / VC / early stage health science. Nearly 90% of deposits were uninsured, also an outlier among peers.

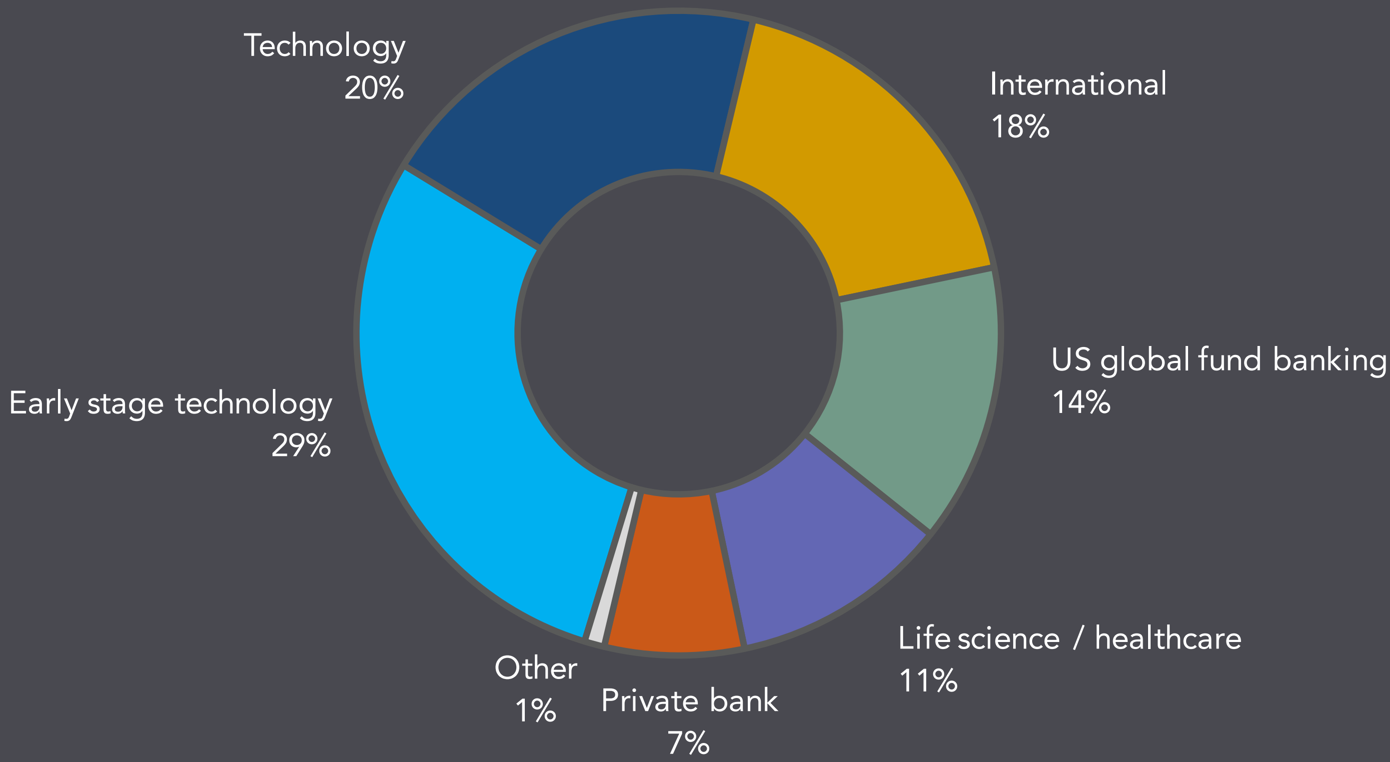
Deposit Run: As capital losses became more apparent, depositors tried to withdraw $42 bn of deposits on Thursday, March 9 (in addition to $25 bn of deposit outflows in prior quarters). SVB's share price declined 60% the same day before trading was halted.

Low Loan-to-Deposit Ratio: Less demand for loans from SVB's "niche" technology / VC / life sciences customer base, who don't have the high fixed asset, reliable cash flows characteristic of high quality borrowers. SVB's large deposit surge was therefore invested largely in higher yielding, longer duration USTs and agencies.

SVB's Non-Traditional Deposit & Funding Base

The "niche" nature of Silicon Valley Bank's business relied heavily on technology and venture capital deposit funding that was an outlier among industry peers. Traditional "stickier" and domestic retail deposits, by comparison, appear to account for less than 10% of SVB's deposit base. As losses mounted on their long duration UST & MBS investment portfolio, and the bank moved too slowly to shore up its capital base, SVB became vulnerable to rapid deposit outflows. On Thursday March 9, SVB depositors tried to withdraw $42 bn in deposits, and its stock price declined > 60% until share trading was halted.

Silicon Valley Bank's deposit base (%)



Source: (1) FDIC. Silicon Valley Bank. Q3 2022.

ALM Errors, Securities Losses and Deposit Flight

For most banks, higher interest rates can drive stronger earnings as loan rates rise more quickly than deposits. However, the opposite was true for SVB. Given the unique attributes of its customer base and business profile, SVB had a comparatively small lending book, and therefore very large investment portfolio, which they invested largely in longer duration, fixed rates securities.

Large HTM Securities Portfolio: SVB also held a very large amount of its securities portfolio in the "Held-to-Maturity" (HTM) bucket, which resulted in a large part of the investment portfolio being suddenly "marked-to-market" when the Bank was forced to sell securities. Since 2019, SVB's "available-for-sale" (AFS) book doubled from $14 to $27 bn, while its HTM book grew from $14 to $99 bn.

Longer Duration Investment Portfolio: SVB had unusually high exposure to interest rate risk. In the absence of a vibrant lending business, SVB invested in longer duration USTs and MBS over Fed reserves and shorter-dated T-Bills. 56% of SVB's assets were invested in fixed rate securities (large money center banks < 30%). Avg maturity of SVB HTM bond portfolio was 6.2 years at end of 2022.

Large Mark-to-Market Losses: By the end of 2022, with inflation / Fed tightening / rates markedly higher, SVB had mark-to-market losses above $15 bn for securities held-to-maturity, which exceeded its $11.8 bn tangible common equity. Portfolio marks and losses rose on forced asset sales as depositors ran.

ALM Policy Errors: Questions remain as to (1) why SVB did not more effectively manage the ALM issues on the asset side as interest rates rapidly increased; and (2) why they did not move to raise capital sooner.

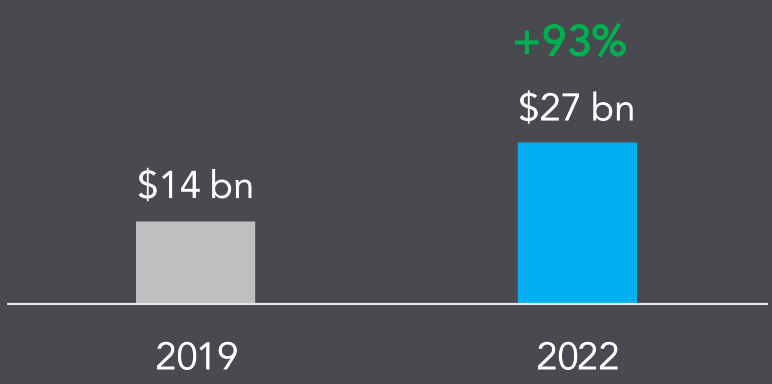
FDIC Receivership: Before 9am local time on Friday, March 10, the California Department of Financial Protection and Innovation closed SVB, appointing the FDIC as receiver.

Treasury, Federal Reserve, FDIC Action: On Sunday, the Treasury, Federal Reserve, and FDIC jointly announced actions to strengthen financial stability and limit broader contagion. First, Treasury Secretary Yellen instructed the FDIC to make all depositors, including those uninsured, whole. Secondly, the Fed announced a new "crisis-era-like" Bank Term Funding Program (BTFP) to provide banks up to 12 months financing with qualifying assets used as collateral valued at par rather than mark-to-market. Lastly, the Fed will also accept collateral at par value at the discount window.

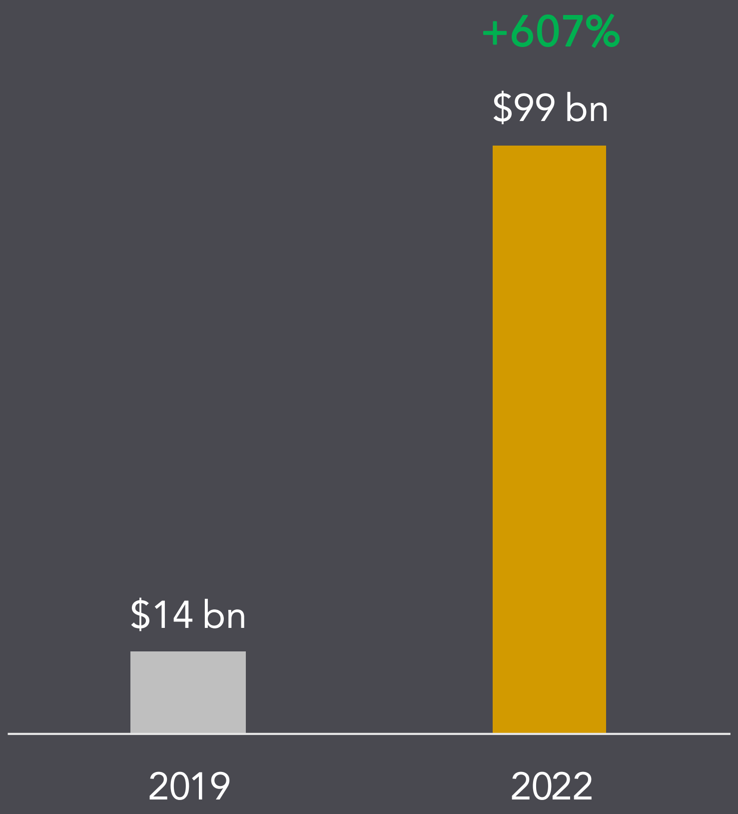
SVB's Large HTM Securities Portfolio

SVB also held a very large amount of its securities portfolio in the "Held-to-Maturity" (HTM) bucket, which resulted in a large part of the investment portfolio being suddenly "marked-to-market" when the Bank was forced to sell securities. Since 2019, SVB's "available-for-sale" (AFS) book doubled from $14 to $27 bn, while its HTM book grew from $14 to $99 bn.

SVB's AFS Investment Portfolio



SVB's HTM Investment Portfolio

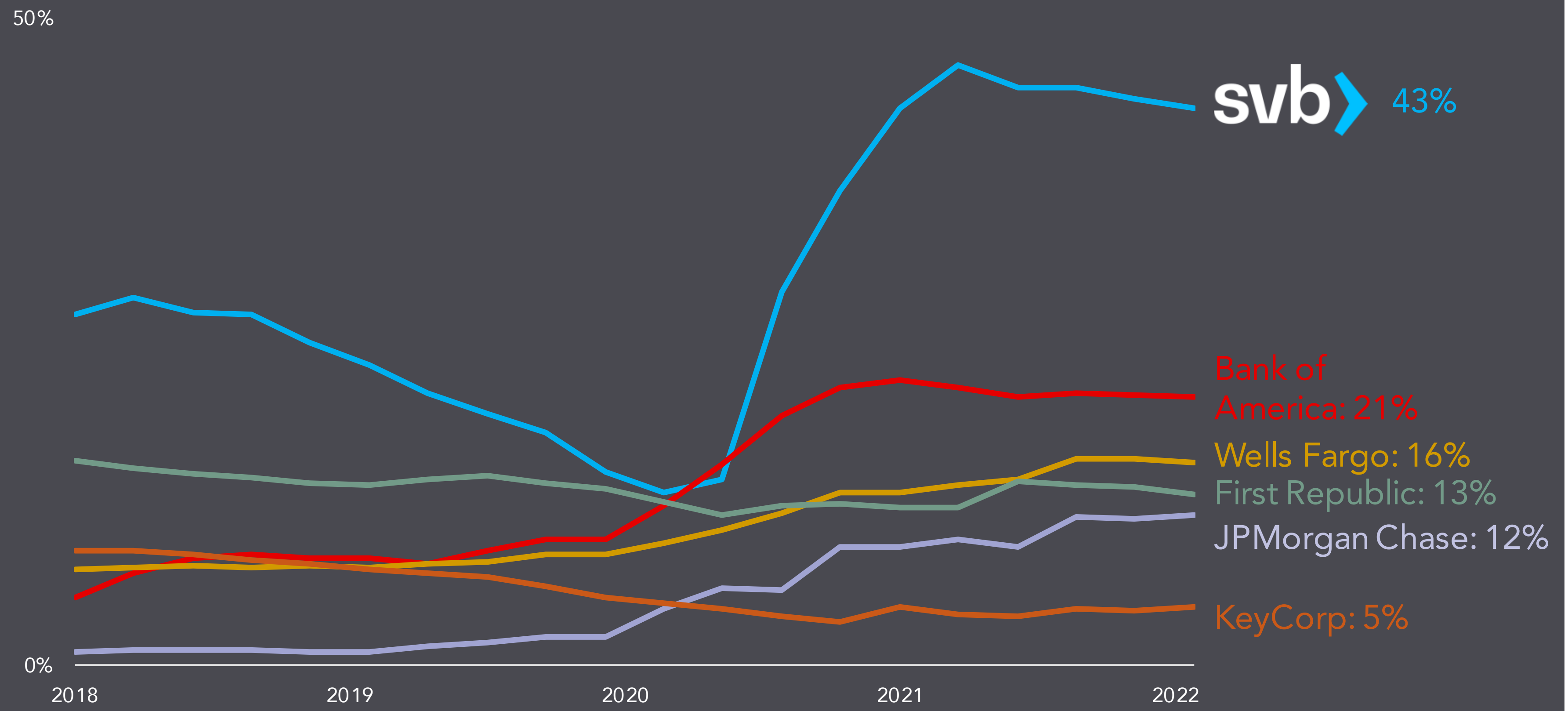


Source: (1-2) FDIC. Silicon Valley Bank public filings.

SVB's Outsized Hold to Maturity Portfolio

An outsized portion of SVB's investment portfolio (40%), vis-à-vis peers, were in securities that had not been marked-to-market in the "held to maturity" bucket. When deposits ran, forcing SVB to sell securities, the subsequent capital losses > $15 bn exceeded SVB's tangible book value of $11.8 bn, effectively rendering the bank insolvent.

Securities booked as hold to maturity as a share of total assets



Source: (1) Bloomberg. Data as of March 13, 2023.

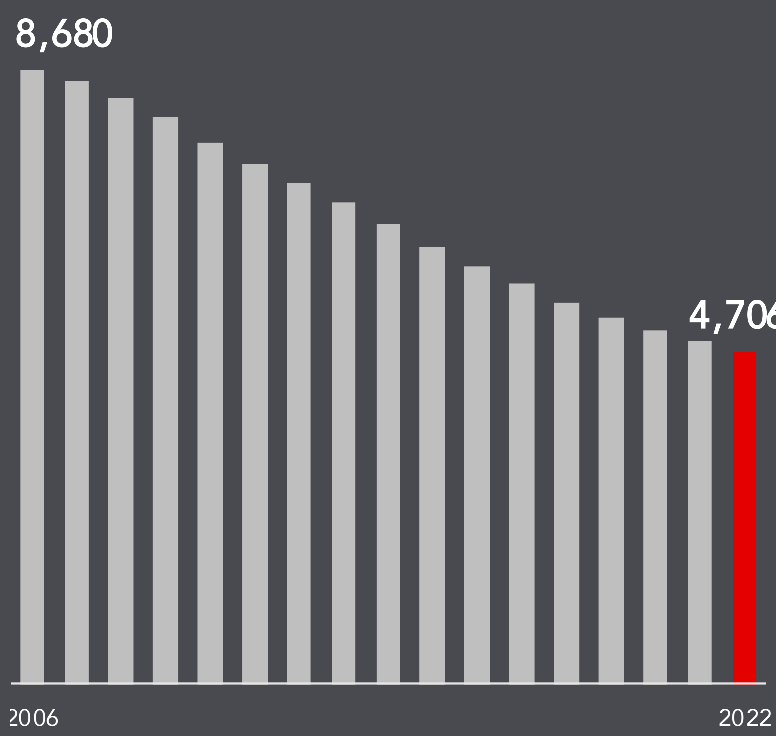
2. Systemically Strong US Banking System

Size of the US Banking System

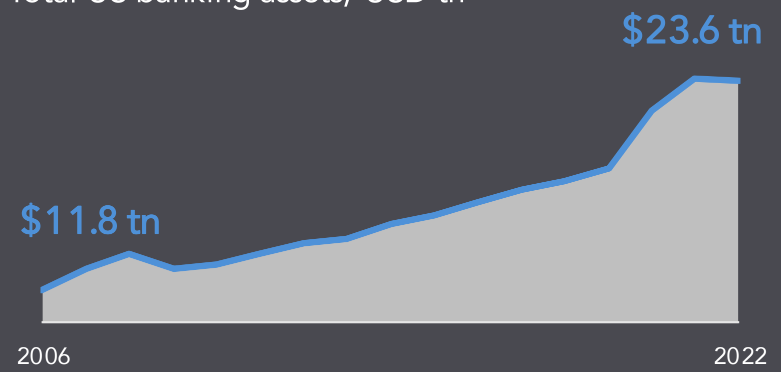
While the number of US banks has declined nearly 50% since 2006, total assets have more than doubled from $11.8 trillion to $23.6 trillion over the same period

Growth of US Banking System Since 2006

Of FDIC insured banks



Total US banking assets, USD tn



Total US banking deposits

Source: (1-3) FDIC "Statistics at a Glance." Data as of December 31, 2022.

Crisis of Confidence

While US banking system fundamentals remain very strong in aggregate, a "crisis of confidence" in any banking system can weaken financial stability and precipitate significant volatility in markets. As such, regulators have moved very quickly (i.e., this weekend) to resolve the failure of SVB with minimal losses to uninsured depositors.

Systemically Strong: From a capital and liquidity perspective (tier 1 capital, risk-based capital, wholesale funding, and loan-deposit ratios), the US and global banking system today are the strongest of our lifetime (though it took a decade of post GFC regulation to get there).

Too-Big-To-Fail Threshold: In 2018, the US relaxed the threshold for banks being regulated as "systemically significant" from $50 bn to $250 bn - a designation imposing more rigorous requirements and annual stress testing (LCR, NSFR & supplementary leverage ratios). From 2018 to 2022, SVB's assets rose from $50 bn to $220 bn, becoming the 16th largest US bank but staying below the more stringent regulatory threshold.

This is Not 2008: We do not expect recent developments with Silicon Valley Bank (SVB) or Silvergate Capital Corp to become systemic. In our view, comparisons to 2008, when hundreds of banks failed, would be inaccurate.

More Idiosyncratic than Systemic: SVB was a significant outlier among peers in terms of the concentration of deposits among "less sticky" tech companies (vs retail), low loan to deposit ratios and longer duration of large securities investment portfolio. Their business profile and fact pattern made them particularly vulnerable to rising rates and deposit outflows.

Crisis of Confidence: In times of stress, confidence in the banking system can become just as important as the fundamentals. If depositors lose confidence in the stability of smaller bank funding, deposit withdrawals and market volatility can escalate rapidly. The "unintended consequences" of a large bank failure are also difficult to anticipate.

Coordinated Treasury-Fed-FDIC Response

On Sunday, March 12, the Treasury, Federal Reserve, and FDIC jointly announced actions to strengthen financial stability and limit broader contagion. First, Treasury Secretary Yellen instructed the FDIC to make *all* depositors, including those uninsured, whole. Secondly, the Fed announced a new "crisis-era-like" Bank Term Funding Program (BTFP) to provide banks up to 12 months financing with qualifying assets used as collateral *valued at par* rather than mark-to-market. Lastly, the Fed will also accept collateral at par value at the discount window.

Federal Reserve's Bank Term Funding Program (BTFP) Terms

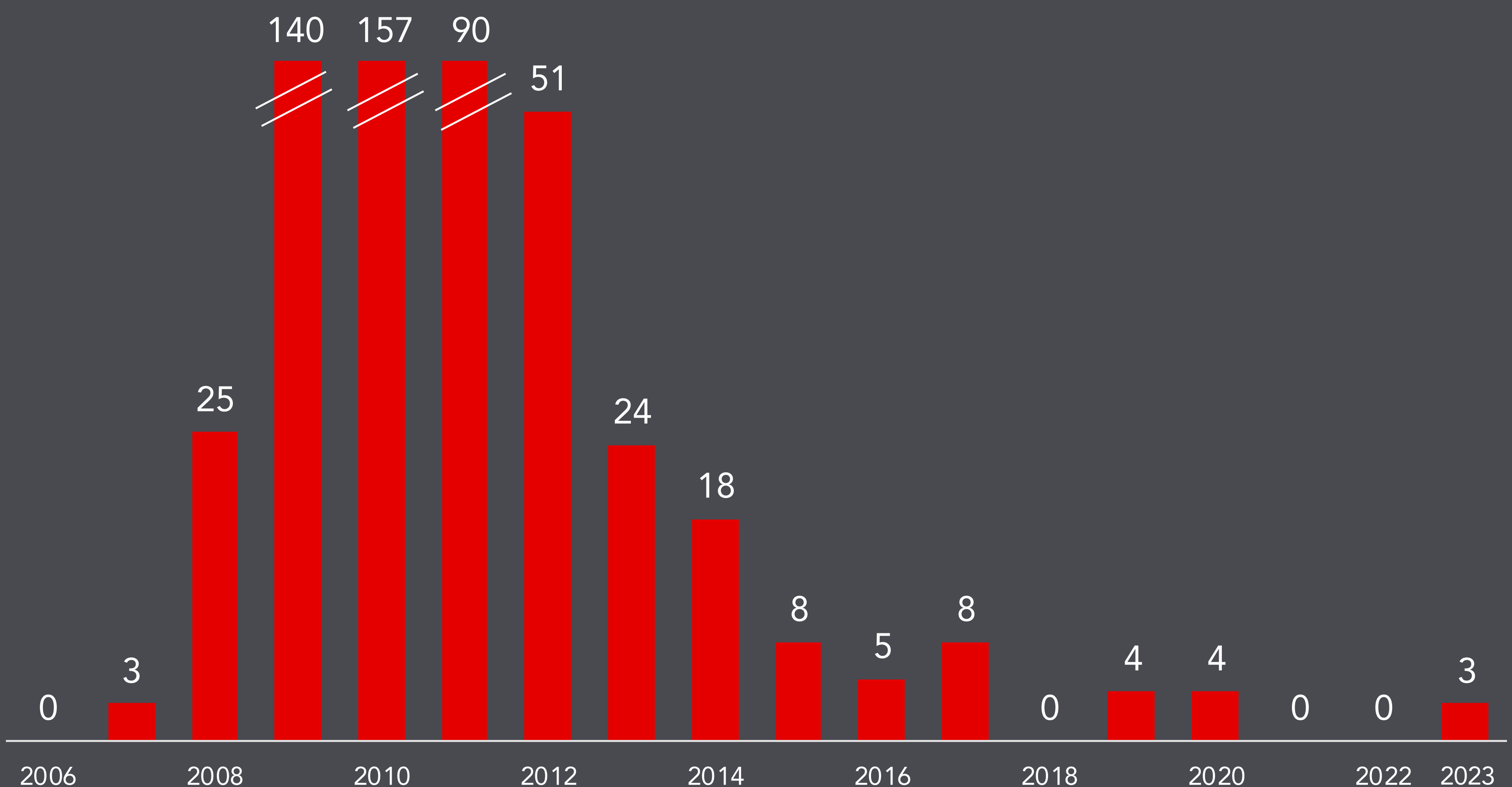
Eligible Borrowers:	US federally insured depository institutions or US branch or agency of a foreign bank eligible for primary credit
Eligible Collateral:	Any collateral eligible for purchase by the Federal Reserve in open market operations, as long as it was owned prior to March 12, 2023 (includes USTs, agency debt and MBS)
Advance Size:	Value of eligible collateral pledged by the borrower
Collateral Valuation:	Collateral will be valued at par. Margin will be 100% of par value.
Rate:	1 year OIS + 10 bps, fixed for the term of the advance on the day the advance is made
Prepayment:	Allowable at anytime without penalty
Term:	Up to one year
Program Duration:	At least March 11, 2024
Fees:	No fees
Recourse:	Advances made with recourse beyond the pledged collateral to the eligible borrower
Credit Protection:	The Treasury would provide $25 bn as credit protection to the Federal Reserve via the Exchange Stabilization Fund

Source: (1) Federal Reserve. FDIC. US Treasury.

This is Not 2008

During the peak of the global financial crisis (GFC), more than 300 US banks failed between 2008 - 2010. Silvergate Capital, Silicon Valley Bank and Signature Bank became the first three US banks to fail in three years (since 2020).

# of failed FDIC institutions

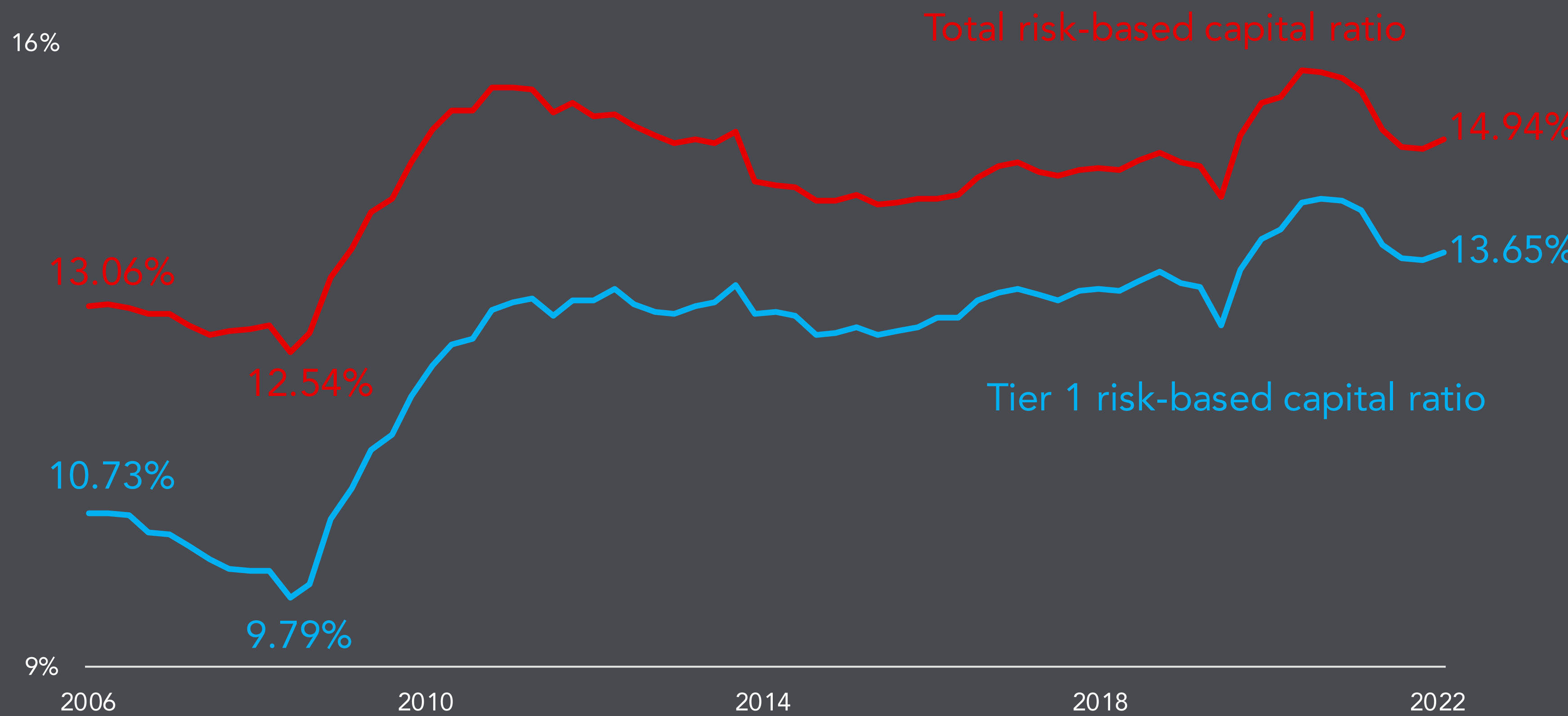


Source: (1) FDIC "Statistics at a Glance." Data as of December 31, 2022.

US Bank Capital Ratios Strengthened Since GFC

In the wake of the Great Financial Crisis, banks globally increased both the quantum and quality of capital they hold. The Federal Reserve's 2022 stress test demonstrated that banks were well capitalized enough to meet regulatory requirements even under a "severely adverse scenario" (10% unemployment, 3.5% GDP contraction, sharp asset price declines). While capital ratios in the US declined from their pre-pandemic peak, they are meaningfully higher relative to pre-GFC levels.

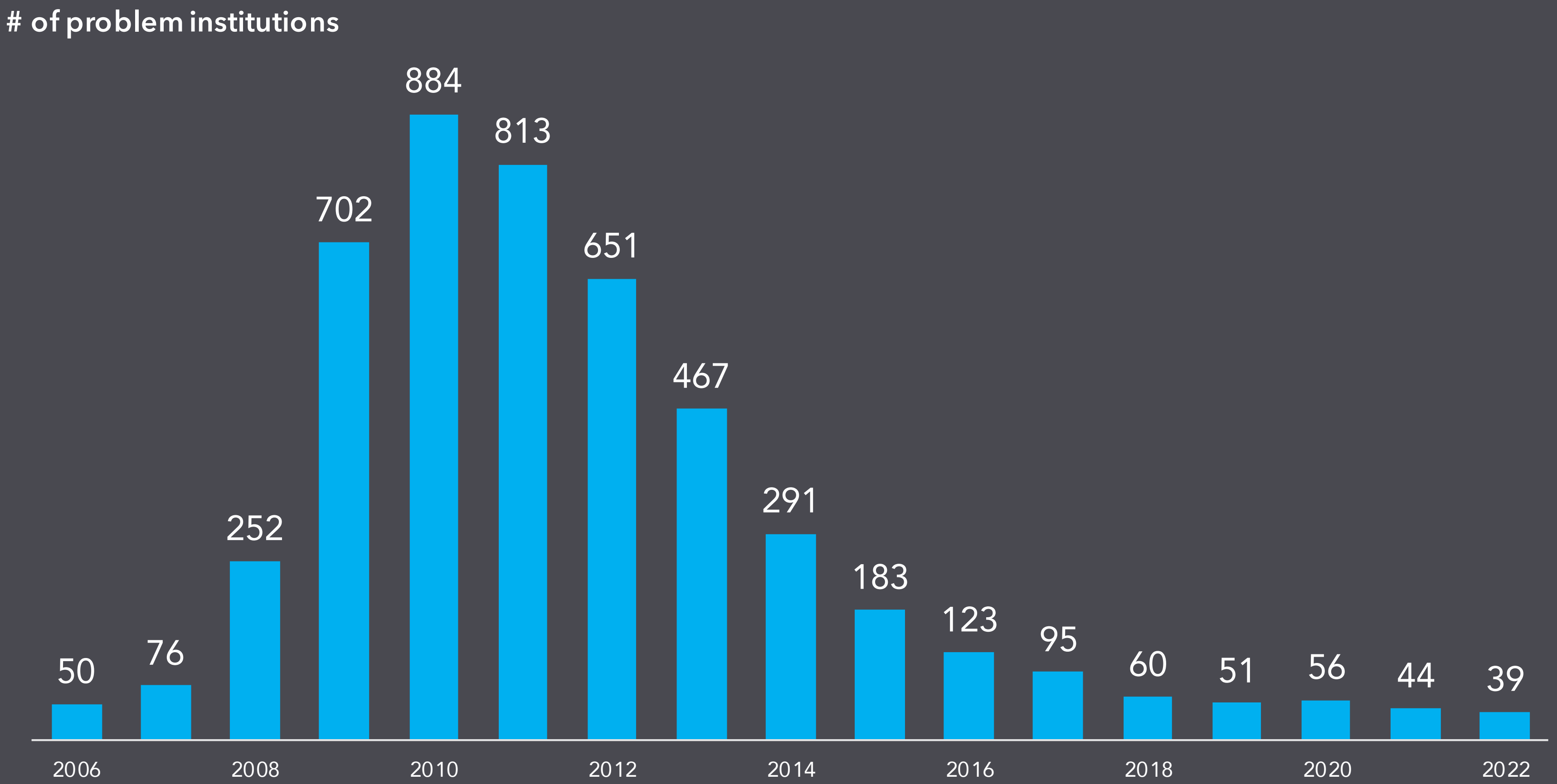
Capital ratios



Source: (1) FDIC. Bloomberg. Data as of March 12, 2023.

The FDIC's "Problem Bank" List

As noted in a report by Charles Peabody at Portales Partners, Silicon Valley Bank was not even included among the 39 banks on the FDIC's "Problem Bank" list at the end of 2022. Problem Banks are those whose financial condition are rated 4 or 5 on the CAMEL regulatory rating system (acronym derived from capital, asset quality, management, earnings and liquidity). SVB arguably should have failed on 3 of 5 categories (C, M and L).

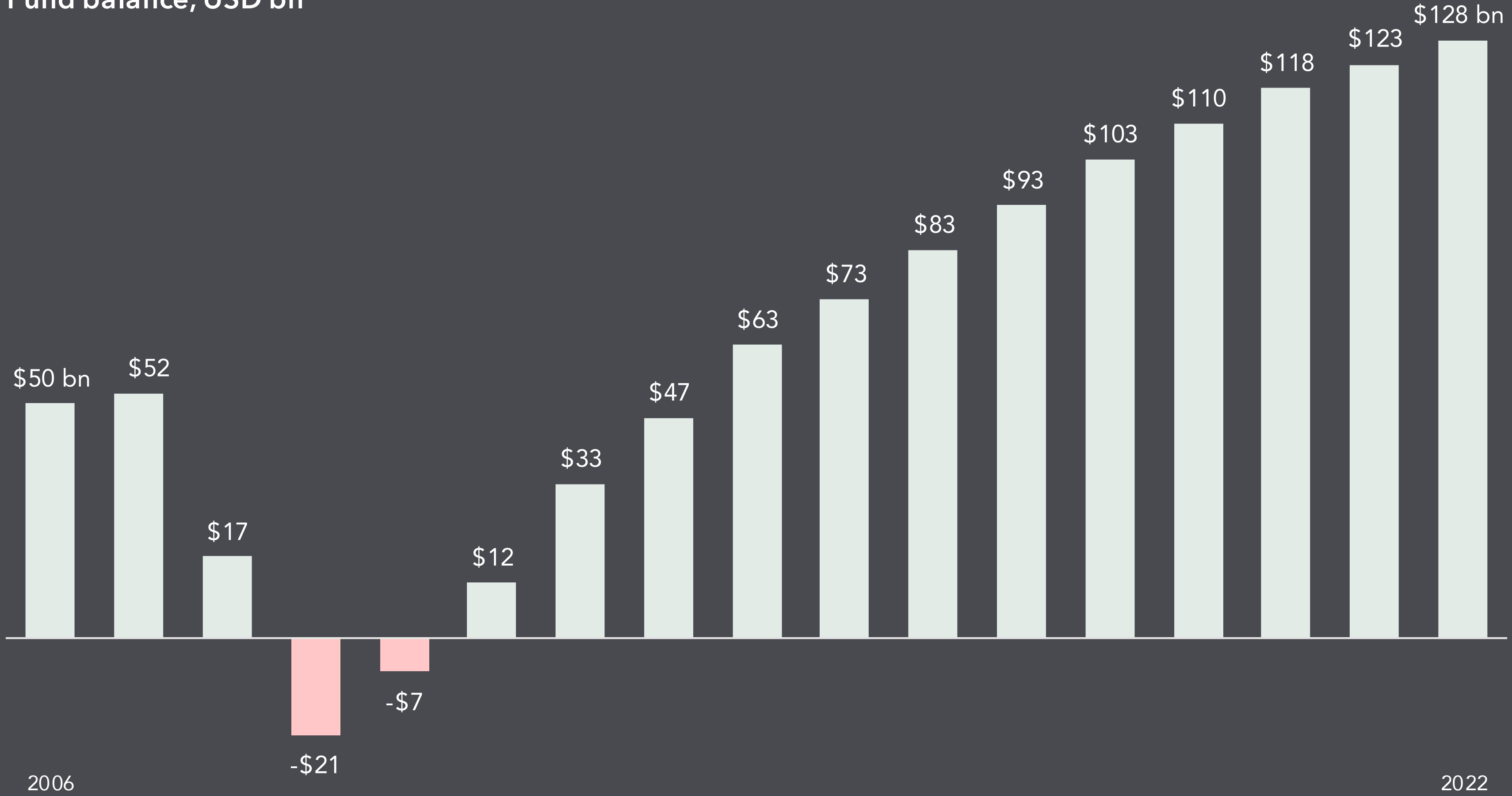


Source: (1) FDIC "Statistics at a Glance." Data as of December 31, 2022.

Size of FDIC Insurance Fund

The FDIC's deposit insurance fund has grown from $50 bn in 2006, to over $128 bn today. Significant growth in the FDIC's insurance fund will be needed to manage expected volatility and bank failures in the years ahead.

Fund balance, USD bn



Source: (1) FDIC "Statistics at a Glance." Data as of December 31, 2022.

3. Impact of Fed's Tightening Cycle Has Just Begun

Casualties of Fed Tightening

Every Fed tightening cycle of the last 40 years has claimed a large financial casualty, given the impact of US monetary policy on rates, currency markets and risk assets globally.

1980

- ***Early 1980s*** LatAm Debt Crisis
- ***Late 1980s*** US Commercial Real Estate
- ***1994*** G10 Bond Turmoil
- ***Late 1990s*** Asia Financial Crisis
- ***2008*** Global Financial Crisis
- ***2014-2016*** Commodities Super Cycle Bust
- svb ***2023*** Silicon Valley Bank / Silvergate Capital

2023

Casualties of Fed Tightening

Every Fed tightening cycle of the last 40 years has claimed a large financial casualty and "unintended consequences", given the impact of US monetary policy on securities portfolios, currency markets and risk assets globally (i.e., 80s LatAm crisis, 80s commercial real estate, 90s Asia financial crisis)

Financial Casualties: Every Fed tightening cycle of the last 40 years has claimed a large financial casualty and "unintended consequences", given the impact of US monetary policy on securities portfolios, currency markets and risk assets globally (i.e., 80s LatAm crisis, 80s commercial real estate, 90s Asia financial crisis)

Delayed Impact of Tightening: Monetary policy operates w a lag, typically 12-18 months. In this sense, the impact of the fastest Fed tightening cycle in 40 years has really just begun.

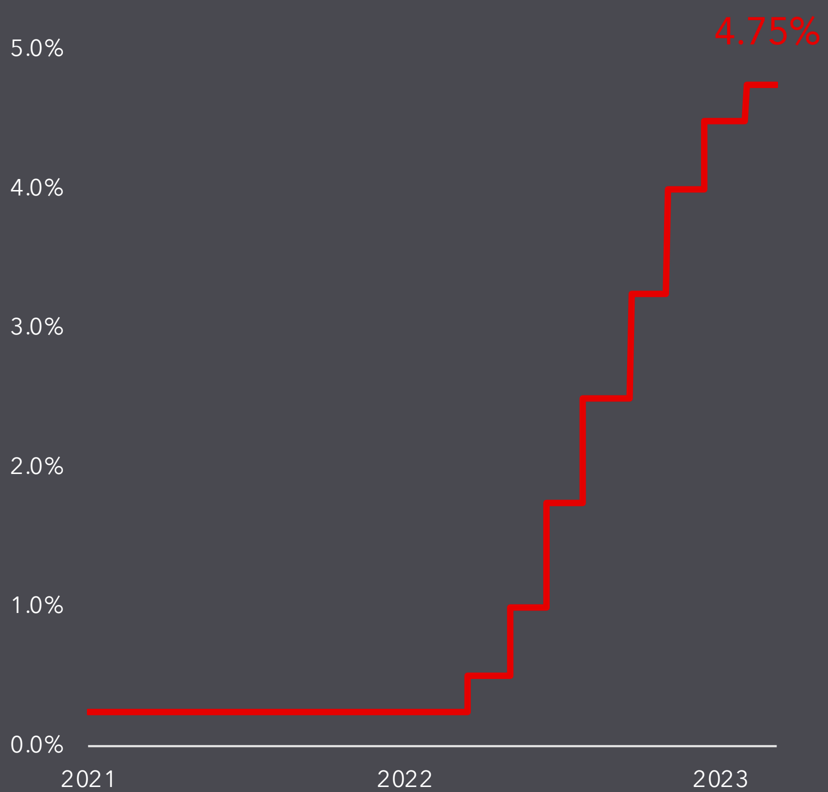
The Fed's Financial Stability Mandate: The Fed's tightening cycle task has become more complicated because they now have to balance inflation-fighting and financial stability risk. We expect the Fed to move more "incrementally" from here than would have otherwise been the case.

March 22 FOMC Meeting: Following last week's bank sector turbulence, the probability of a 25bps hike (vs 50 bps) on March 22 has increased. A strong, above-consensus Feb CPI print on Tuesday, March 14 would make the March 22 rate decision more difficult.

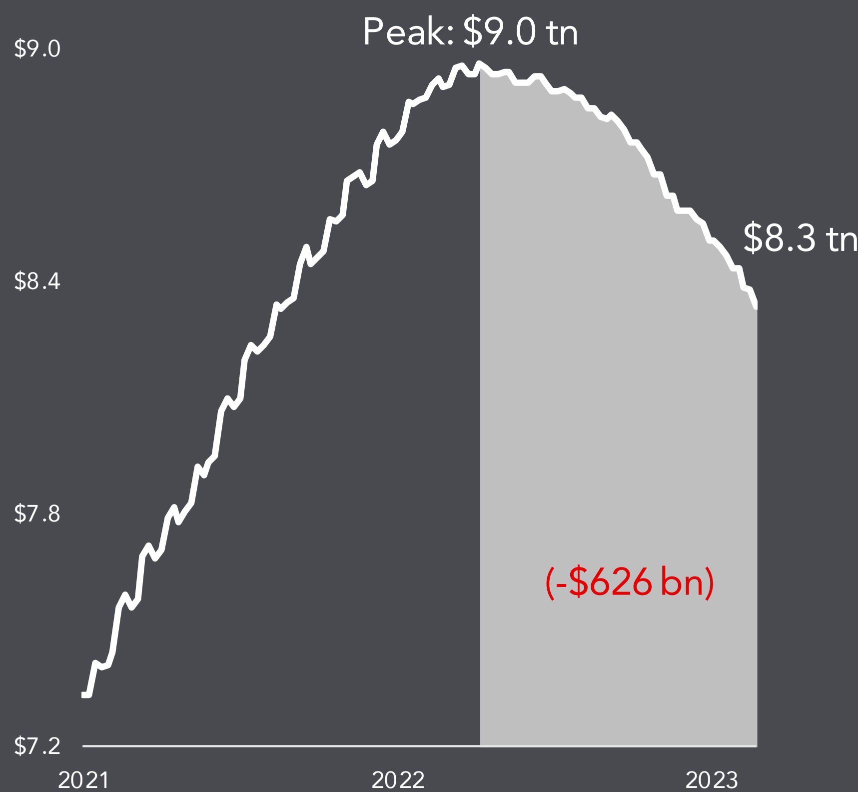
Impact of Fed Tightening Has Just Begun

While the Fed's historically rapid 2022 tightening cycle is nearly complete, much of the impact has only just begun. In the year ahead, another 2-4 rate hikes are likely, and more than $1 trillion of additional QT. Monetary policy also typically hits the real economy with a 12-18 month lag. Key areas to watch include interest rate sensitive sectors (auto, housing), CMBS, leverage loan markets and more highly levered credits.

Fed funds target rate



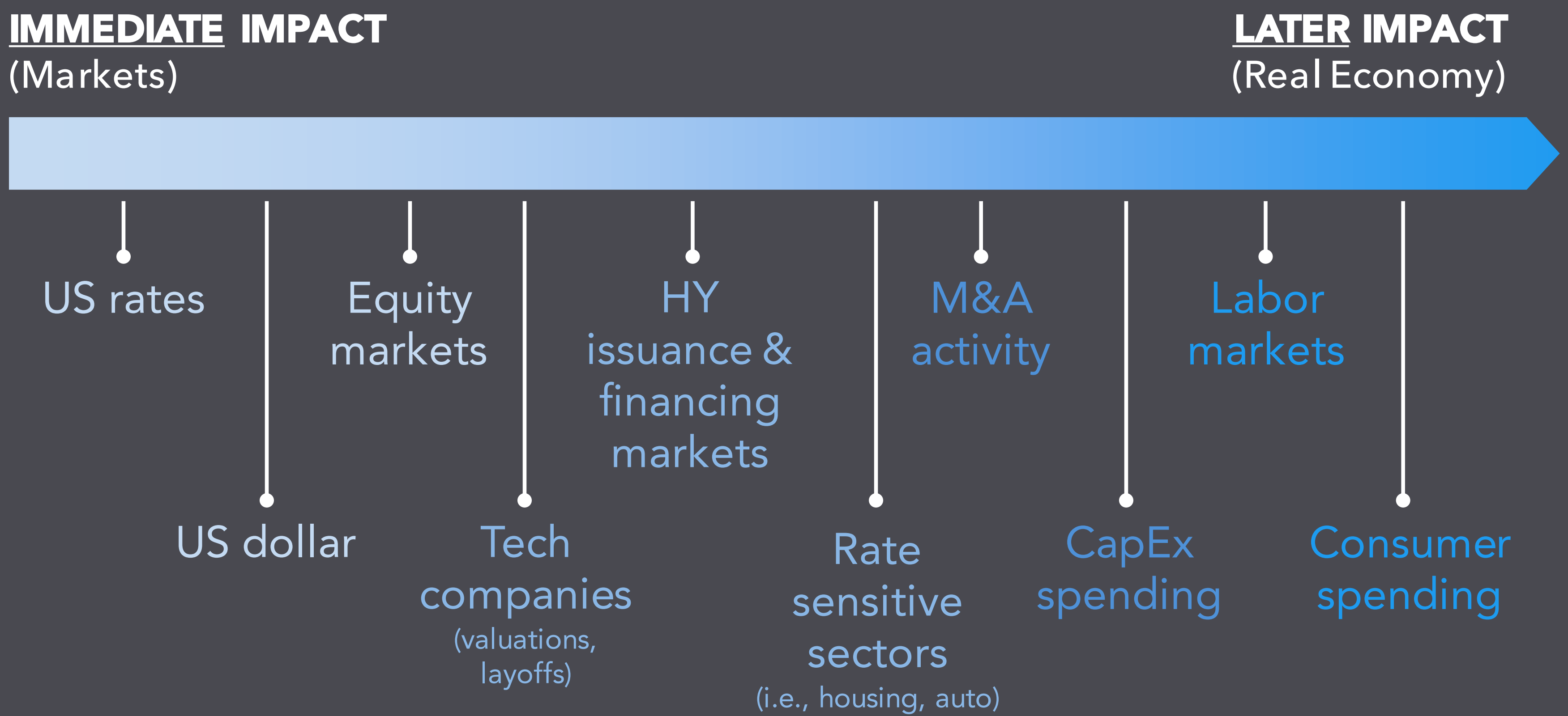
Fed total balance sheet assets, USD tn



Source: (1-2) Bloomberg. Data as of March 8, 2023.

Monetary Policy Operates with a Lag

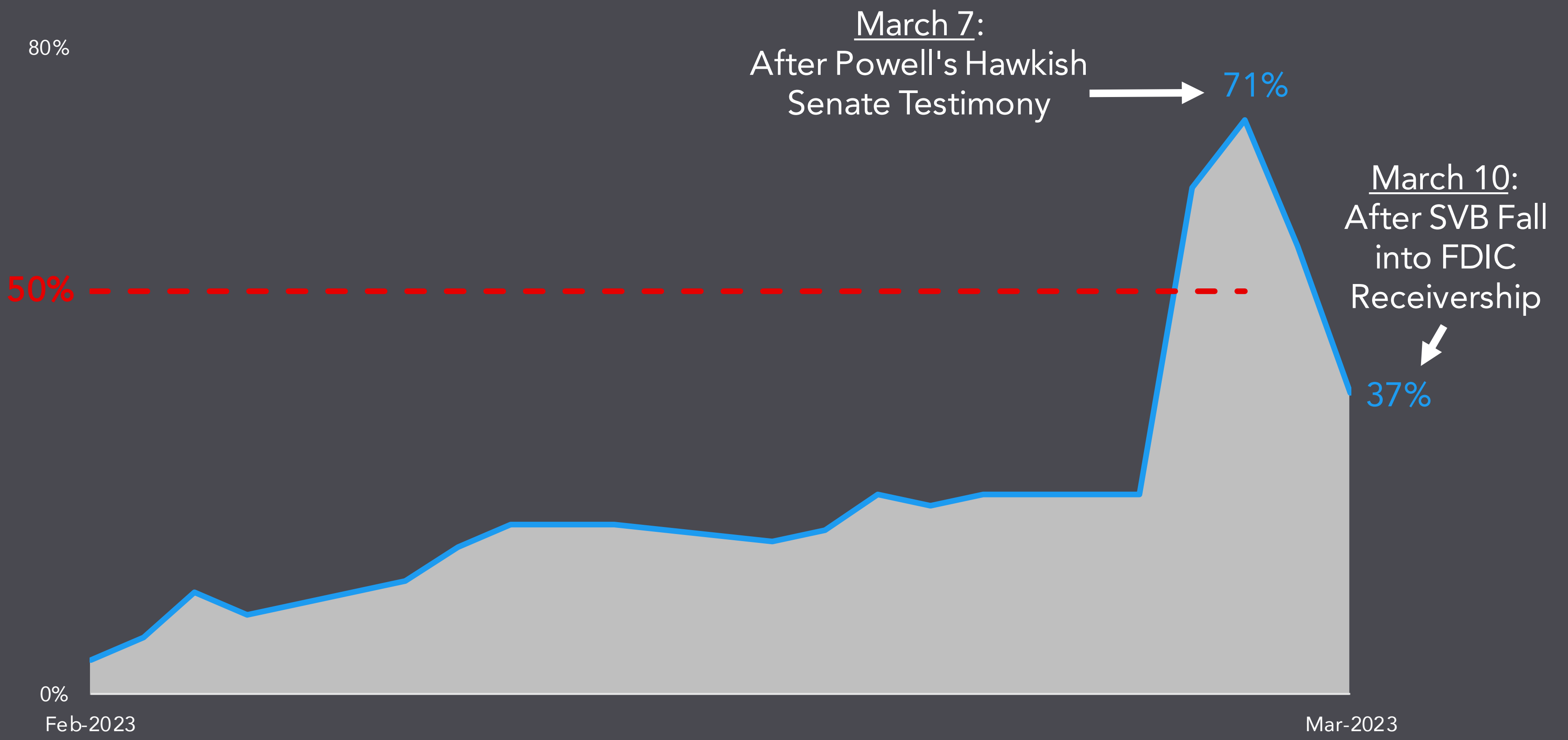
Historically, monetary policy tightening operates with a lag, typically 12-18 months. While the impact on markets tends to be rapid, the ripple effects to the real economy take longer.



Looking Ahead to the March 22 FOMC

After spiking above 70% earlier in the week following Chair Powell's hawkish Fed testimony, market pricing on the probability of a 50 bps rate hike on March 22nd fell sharply to 37%, following several days of financial stability concerns in the banking sector.

Market implied probability of a 50bps hike in March



Source: (1) Bloomberg. Data as of March 10, 2023. WIRP Screen.

About the Authors

Tom Joyce

Managing Director
Capital Markets Strategist
New York, NY

Tom.Joyce@mufgsecurities.com
(212) 405-7472

Role

Tom Joyce is a Managing Director and Capital Markets Strategist within MUFG's global capital markets and investment banking business. Based in New York, Tom heads a team that creates customized analytical content for multi-national S&P 500 companies. His team provides in depth analysis on the impact of economic, political, public policy and regulatory dynamics on the US credit, foreign exchange, rates and commodities markets.

Experience

Tom has over 25 years of Investment Banking experience in New York, London, Hong Kong, and San Francisco. Over the last 15 years, Tom created and built the Capital Markets Strategy role, advising corporate C-Suite executives (Boards, CEOs, CFOs, and Treasurers) on the pervasive macro forces driving markets. Tom also presents at dozens of corporate events each year including Board meetings, CEO ExCo sessions, CFO and Treasury off-sites, corporate leadership events and conferences.

Education

Tom's educational background includes a year of study at Oxford University from 1991 - 1992, a Bachelor of Arts in Political Science from Holy Cross College in 1993, and a MBA from Kellogg Business School, Northwestern University in 2000.

Personal

Tom resides in New Canaan, CT with his wife and four sons, where he serves on the Board of Trustees of the New Canaan Library as well as the Holy Cross College President's Council.

About the Authors

Hailey Orr

Director
Capital Markets Strategist
New York, NY

Hailey.Orr@mufgsecurities.com
(212) 405-7429

Stephanie Kendal

Associate
Capital Markets Strategist
New York, NY

Stephanie.Kendal@mufgsecurities.com
(212) 405-7443

Role

Hailey Orr is a Director in MUFG's Capital Markets Strategy group within the global capital markets and investment banking business. The team provides market based content for corporate clients to assist in strategic decision making. Focus areas include the impact of economic, political, public policy and regulatory dynamics on the US credit, foreign exchange, rates and commodities markets.

Experience

Hailey has a decade of Wall Street experience, including three years as a Consumer Sector Specialist in Equity Sales and seven years as a Capital Markets Strategist. Hailey is also a member of MUFG's Inclusion & Diversity Council and has devoted years to participating in and developing Wall Street recruiting programs.

Education

Hailey graduated with honors from the University of Michigan's Ross School of Business with a BBA and a minor in International Studies.

Personal

In March 2020, Crain's New York Business Magazine named Hailey one of the "Rising Stars in Banking and Finance".

Role

Stephanie Kendal is an associate in MUFG's Capital Markets Strategy group within the global capital markets and investment banking business. The team provides market based content for corporate clients to assist in strategic decision making. Focus areas include the impact of economic, political, public policy and regulatory dynamics on the US credit, foreign exchange, rates and commodities markets.

Experience

Stephanie has spent over five years as a Capital Markets Strategist. She is an active member of the University of Michigan recruiting team and is also focused on the diversity recruiting effort at MUFG. At her prior firm, Stephanie was a part of the Americas Women's Network Junior Council.

Education

Stephanie graduated with honors from the University of Michigan's Ross School of Business with a BBA .

Personal

Stephanie is actively involved in NYC's iMentor program, mentoring high school students with their journey to college graduation.

MUFG's Capital Markets Strategy Team

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