
# Silicon Valley Bank  The Bank from Planet ZIRP
# The Case Study April 2023

# Silicon Valley Bank  The Bank from Planet ZIRP


Silicon Valley Bank The Case Study is a collection of notes, articles, comments, spreadsheets, charts and photographs relating to the rise and fall of Silicon Valley Bank.

Articles and comments are included from Wikipedia, New York Times, The Seattle Times, The Washington Post, Bloomberg, The Brookings Institute, John Mauldin of Mauldin Economics and and Simon Taylor of Fintech Brain Food.

The series includes our own analysis of summary and conclusions, together with a chapter on risk analysis, Fed rate movements and the Reality Stress Testing of the SVB balance sheet in 2022. Teaching Notes are also available.

In our research, we have warned frequently of the dangers of live on Planet ZIRP, the world of zero interest rates policy.

In November 2015 we wrote "Over the medium term, we expect bond yields (after Fisher) to reflect a hedge against inflation plus a real risk return. Hence we consider the normalized yield on ten year gilts to be between 4% to 4.5% if the plausible inflation target is 2%. There is a real risk of capital collapse as bond yields rise and capital prices fall as yields return to normalized values."

**“Whenever the Fed hits the brakes, someone goes through the windshield. You just never know who it’s going to be.”**

Michael Feroli, Chief Economist J.P. Morgan
The New York Times, March 16, 2023)

Now perhaps we do …

# Silicon Valley Bank  The Bank from Planet ZIRP

## Summary

An update on UK and world economics the principal theme. The focus on interest rates of great interest. The disruption to financial markets and the banking sector was brought into focus by the collapse of Silicon Valley Bank.

A lot of interest in the demise of SVB. The rise in interest rates and the collapse of bond prices had already created problems for pension funds with LDI exposure in the U.K. Rate hikes by the Fed and the rise in bond yields created fatal challenges to the balance sheet of SVB in the U.S.A. There have been many warnings about the problems to follow the eventual "Escape From Planet ZIRP".  Bonds not gilt edged but razor edged. They really are the peaky blinders of investment.

In June 2013 Andy Haldane Chief economist at the Bank of England warned : "Let's be clear, we have intentionally blown the biggest government bond bubble in history". Andy Haldane was then the director of financial responsibility at the Bank of England.

In November 2015 we wrote "Over the medium term, we expect bond yields (after Fisher) to reflect a hedge against inflation plus a real risk return. Hence we consider the normalized yield on ten year gilts to be between 4% to 4.5% if the plausible inflation target is 2%. There is a real risk of capital collapse as bond yields rise and capital prices fall as yields return to normalized values." Warnings From Planet ZIRP November 2015"

## The SVB Balance Sheet Too Heavy for the Flight ...

A balance sheet too heavy for the flight, SVB was ill equipped for the transition. Deposits had increased from $49 billion dollars in 2018, to $189 billion dollars by 2021. "Hot money" of course, two thirds of the deposits were non interest bearing demand deposits. Over 90% were above $250,000 and not insured under FDIC rules. In 2022 deposits fell by $16 billion as investors were lured away by the prospect of higher yields. It was a harbinger of problems to follow for the bank in 2023.

Much attention has been focused on the asset disposition on the balance sheet. Assets under management had increased from $57 billion in 2018 to $212 billion by the end of 2022. In 2022 almost $40 billion dollars were held in cash ($14 billion) and Assets for Sale ($26 billion) including  $16 billion held in U.S. Treasuries. Total Assets For Sale were marked to market with a $2.5 billion impairment.

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The Net Asset Value or Total Equity in the bank was $16 billion. Unchanged from the year before, the balance sheet had absorbed the hit from deposit withdrawals and the asset write down.

More ominous was the position on Assets Held to Maturity. Over $90 billion by the end of 2022, 90% of the assets were held in the alphabet soup of mortgage debt. MBS, CMOs and CMBS. Mortgage Backed Securities, Collateralized Mortgage Obligations and Colllateralized Mortgaged Backed Securities featured.  Illiquid and vulnerable to rising rates, echoes of 2008 would create concerns for some. The balance sheet note of a $15 billion loss should the HTM assets be marked to market, extinguishing Total Common Equity, would cause depositors to head for the exit.

The SVB 10k Annual Return was filed on the 24th February. At the beginning of March, Moody's reportedly informed SVB Financial, the bank's holding company, it was facing a potential downgrade of its credit rating because of its unrealized losses.

On March 8, 2023, SVB announced it had sold over $21 billion of investments, borrowed $15 billion, and would hold an emergency sale of its stock to raise an additional $2.25 billion. investors were reluctant. The markets were unconvinced. By the close of business on March 9th, customers had withdrawn $42 billion dollars. A further $100 billion was up for withdrawal the following day. The Bank had run out of cash and options.

SVB was placed into the FDIC receivership. The Bank of Planet ZIRP could no longer escape. Perhaps It was never designed to make it.

John Ashcroft April 2023

# Silicon Valley Bank  The Bank from Planet ZIRP

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## 1 Introduction from Wikpedia

Silicon Valley Bank (SVB) was a state-chartered commercial bank headquartered in Santa Clara, California . The bank failed on March 10, 2023, with holdings initially managed by the Federal Deposit Insurance Corporation (FDIC). The majority of the assets were subsequently acquired by First Citizens Bank. Assets acquired included some $110 billion of deposits.

SVB was the 16th-largest bank in the United States and was the largest bank by deposits in Silicon Valley. SVB operated branches in California and Massachusetts. The bank composed the primary business of SVB Financial Group, its publicly traded bank holding company which, with other subsidiaries, operated offices in 13 additional U.S. states and in over a dozen international jurisdictions.

SVB, a financial institution that had become the go-to bank for nearly half of all venture-backed tech startups, failed after a run on its deposits triggered by a series of central bank-endorsed interest rate hikes amid a global inflation surge. The California Department of Financial Protection and Innovation (DFPI), the regulator, seized the bank and placed it into the receivership of the FDIC in the second-largest bank failure in U.S. history.

On March 12, 2023, a joint statement by Secretary of the Treasury Janet Yellen, Federal Reserve Chairman Jerome Powell, and FDIC Chairman Martin Gruenberg said all depositors at SVB would be fully protected and have access to all of their money, including both insured and uninsured deposits. The newly-created and FDIC-administered successor, Silicon Valley Bridge Bank, N.A., a bridge bank, began operations and assumed ongoing business.

## Foundation and early growth

Silicon Valley Bank was founded in 1983 by former Bank of America managers Bill Biggerstaff and Robert Medearis to focus on the needs of startup companies. They came up with the idea over a game of poker. They hired Roger V. Smith, who had previously headed a high-tech lending unit at Wells Fargo, to be the bank's first CEO and president.

The bank launched on October 17, 1983, as a wholly owned subsidiary of Silicon Valley Bancshares (now SVB Financial Group) with 100 initial investors. Its first office was located on North First Street in San Jose.

When Silicon Valley Bank was founded, the banking industry did not have a good understanding of startup companies, particularly those that lacked revenue. The bank structured its loans with the understanding that startups do not earn revenue immediately, managing risk based on their business model. The bank connected customers to its extensive venture capital, law, and accounting firm network.

Its main strategy was collecting deposits from businesses financed through venture capital. It then expanded into banking and financing venture capitalists, adding services to allow the bank to keep clients as they matured from their startup phase. Initially, startup founders seeking loans from the bank had to pledge about half of their shares as collateral, but the rate later fell to about seven percent, reflecting a low failure rate and founders' tendency to pay off the loans to stay in control of the company.

The bank covered losses by selling the shares to interested investors. Eventually, it became common for venture capital firms' term sheets to require startups to create a bank account at Silicon Valley Bank specifically. For its part, the bank prioritized startups that received funding from top-tier venture capital firms, such as Sequoia Capital, New Enterprise Associates, or Kleiner Perkins, as a way to reduce risk.

During the 1980s, the bank grew with the local high-tech economy, achieving 21 consecutive quarters of profitability. It went from a loss of $39,000 in 1985 to a profit of $12.3 million in 1991. In 1986, SVB acquired National InterCity Bank of Santa Clara. It opened its first office on the East Coast in 1990, near Boston, to serve the Massachusetts Route 128 tech corridor.

Under Smith's leadership, the bank diversified into the high-risk real estate loan business, which amounted to 50% of its portfolio by the early 1990s. A slump in the California real estate market resulted in a $2.2 million loss for the bank in 1992, and by 1995 the portfolio percentage had fallen to 10%. In 1993, John C. Dean was appointed CEO, with Smith becoming Vice Chairman. The bank added a winery lending business in 1994.

## Expansion

The wave of computer technology startups during the dot-com bubble provided an influx of business for the bank, which was noted for its willingness to lend to venture-stage companies that were not yet profitable. Among its approximately 2,000 clients in 1995 were networking innovators Cisco Systems and Bay Networks. That year, the bank moved its headquarters from San Jose to Santa Clara. The holding company's stock price soared through the bubble but fell 50% when the bubble burst. The bank continued to add branches in technology hubs across the country. Ken Wilcox became CEO in 2000 and chose to continue the company's niche focus on technology companies rather than diversifying into a broader commercial bank.

SVB formally entered the private banking business in 2002, building on prior experience and relationships with wealthy venture capitalists and entrepreneurs. In 2003, the bank sponsored three high-profile international trade missions to Bangalore and Mumbai, Tel Aviv, and Shanghai and Beijing, bringing along a delegation of two dozen Silicon Valley venture capitalists along to meet with local investors, entrepreneurs, and government officials, as a prelude to opening international offices. It announced an international expansion drive in 2004, with new operations in Bangalore, London, Beijing, and Israel.

During the 2007–2008 financial crisis, SVB Financial Group received a $235 million investment from the federal government in exchange for preferred stock and warrants under the Troubled Asset Relief Program (TARP). Over two years, it paid $10 million in dividends to the U.S. Treasury, then used the proceeds of a $300 million stock sale to buy back the government's interest. Greg Becker replaced Wilcox as CEO in April 2011.

SVB partnered with Shanghai Pudong Development Bank (SPDB) in 2012 to create a separate Shanghai-based bank, SPD Silicon Valley Bank, to lend to local technology startups. The new bank, owned 50–50 by the two companies, received approval from Chinese bank regulators to operate in renminbi (RMB), making it one of a handful of American-owned banks permitted to do so. SVB also managed two local yuan-denominated funds for Shanghai's Yangpu District government, and invested in a Hangzhou-based loan guarantee company.

In 2015, the bank stated that it served 65% of all U.S. startups. Its new offerings at the time included syndicated loans and foreign currency management, and it stood out as the only U.S. financial institution then working with virtual currency startups. SVB was the finance partner during the launch of Stripe's Atlas platform in February 2016 to help startups register as U.S. corporations.

## Business model

The bank's customers were primarily businesses and people in the technology, life science, healthcare, private equity, venture capital and premium wine industries. It was influential among startups in India, being unusually willing to serve C corporations whose founders lacked Social Security numbers. Despite banking a high-tech sector, the bank was criticized for having old technology and lacking biometric authentication.

In December 31, 2022, 56% of its loan portfolio were loans to venture capital firms and private equity firms, secured by their limited partner commitments and used to make investments in private companies, 14% of its loans were mortgages to high-net-worth individuals, and 24% of its loans were to technology and health care companies, including 9% of all loans which were to early and growth-stage startup companies.Silicon Valley Bank required an exclusive relationship of those borrowing from the bank. In February 2023, Forbes listed the bank as #20 of "America's Best Banks" with a 13.8% return on equity. In March 2023, Moody's Investors Service rated the bank's loan portfolio as conservative and high-performing. The bank's overseas subsidiaries held $13.9 billion in deposits.

## Collapse

In 2022, SVB began to incur steep losses following increased interest rates and a major downturn in growth in the tech industry, with the bank heavily concentrated in long-term Treasury bonds. As of December 31, 2022, SVB had mark-to-market accounting unrealized losses in excess of $15 billion for securities held to maturity.

In early March of 2023, a combination of factors – including poor risk management and a bank run driven by tech industry investors caused the bank to collapse. Use of social media was reported to be a factor in both the initial bank run and its aftermath, with those affected by the potential loss of deposits calling for regulators to ensure that uninsured accounts were made whole.

Early in the morning of March 10, examiners from the Federal Reserve and the FDIC arrived at the offices of SVB to assess the company's finances. Several hours later, the California Department of Financial Protection and Innovation (DFPI) issued an order taking possession of SVB, citing inadequate liquidity and insolvency and appointed the FDIC as receiver.

The FDIC then established a deposit insurance national bank, the Deposit Insurance National Bank of Santa Clara, to re-open the bank's branches the following Monday and enable access to insured deposits. The CEO of Silicon Valley Bank, Greg Becker, was previously on the board of directors at the Federal Reserve Bank of San Francisco, but exited that position. An initial auction of Silicon Valley Bank assets on March 12 attracted a single bid from an undisclosed suitor, after PNC Financial Services and RBC Bank backed away from making offers. The FDIC rejected this offer and plans to hold a second auction to attract bids from major banks, now that the bank's systemic risk designation allows the FDIC to insure all deposits.

On March 13, 2023, the FDIC announced via press release, that the FDIC transferred SVB assets to a new bridge bank, Silicon Valley Bridge Bank, N.A., and appointed Tim Mayopoulos as CEO. The new entity, Silicon Valley Bridge Bank, N.A., is an FDIC-operated, and all SVB clients will become customers of new bridge bank. The FDIC stated the goal is to provide a new level of protection to SVB clients, including keeping regular banking hours and expected banking activities, like online banking, ATM access to client funds, and check writing, and the FDIC stated SVB’s official checks will clear and that loan customers should continue making payments. The FDIC also added that their role is to not protect Silicon Valley Bank shareholders and certain unsecured debt holders.

Regulatory filings from December 2022 estimated that more than 85% of deposits were uninsured. The failure of SVB was the largest of any bank since the 2007–2008 financial crisis by assets, and the second-largest in U.S. history behind that of Washington Mutual. SVB's Chinese joint venture, whose chairman is the chairman of Shanghai Pudong Development Bank, said their operations were "sound" as of March 11, 2023.

The UK government announced that it was working on a lifeline for British tech firms affected by the collapse of the Bank and its branch in the United Kingdom as a part of the fallout from the parent bank. 3,000 firms in the UK were believed to be at risk of bankruptcy without a rescue. On March 13, 2023, after a bidding process, it was announced that HSBC UK had agreed to acquire Silicon Valley Bank UK for £1 in a rescue deal, at no cost to the taxpayer and with depositors fully protected.[

On March 17, 2023, Silicon Valley Bank's former parent company, SVB Financial Group, filed for Chapter 11 bankruptcy. The bankruptcy affects the group's remaining subsidiaries, SVB Capital and SVB Securities, but not Silicon Valley Bank or SVB Private.

https://en.wikipedia.org/wiki/Silicon_Valley_Bank

## 2 The Collapse of Silicon Valley Bank (from Wikipedia)

https://en.wikipedia.org/wiki/Collapse_of_Silicon_Valley_Bank

### 2.1 Introduction

On March 10, 2023, Silicon Valley Bank (SVB) failed after a bank run, marking the second-largest bank failure in United States history and the largest since the 2008 financial crisis. It was one of three largest  United States bank failures including Washington Mutual and Signature Bank.

Seeking higher investment returns, in 2021 SVB began shifting its marketable securities portfolio from short-term to long-term Treasury bonds. The market value of these bonds decreased significantly through 2022 and into 2023 as the Federal Reserve raised interest rates to curb an inflation surge, causing unrealized losses on the portfolio.

Higher interest rates also raised borrowing costs throughout the economy and some Silicon Valley Bank clients started pulling money out to meet their liquidity needs. To raise cash to pay withdrawals by its depositors, SVB announced on March 8 that it had sold over US$21 billion worth of securities, borrowed $15 billion, and would hold an emergency sale of some of its treasury stock to raise $2.25 billion. The announcement, coupled with warnings from prominent Silicon Valley investors, caused a bank run as customers withdrew funds totalling $42 billion by the following day.

On the morning of March 10, 2023, the California Department of Financial Protection and Innovation seized SVB and placed it under the receivership of the Federal Deposit Insurance Corporation (FDIC). About 89 percent of the bank's $172 billion in deposit liabilities exceeded the maximum insured by the FDIC. Two days after the failure, the FDIC received exceptional authority from the Treasury and announced jointly with other agencies that all depositors would have full access to their funds the next morning.

Seeking to auction off all or parts of the bank, the FDIC reopened it on March 13 as a newly organized bridge bank, Silicon Valley Bridge Bank, N.A. Although some characterized the government response as a bailout, the plan did not entail rescuing the bank, its management or shareholders, but rather making uninsured depositors whole from the proceeds of selling the bank's assets, without the use of taxpayer money.

The collapse of SVB had significant consequences for startups in the U.S. and abroad, with many briefly unable to withdraw money from the bank. Other large technology companies, media companies, and wineries were also affected. For a number of founders and their venture capital backers, this was the bank of choice.

## 2.2 Background

SVB was a commercial bank founded in 1983 and headquartered in Santa Clara, California. At its collapse, SVB was the 16th largest bank in the U.S. and was heavily skewed toward serving companies and individuals from the technology industry. Nearly half of U.S. venture capital-backed healthcare and technology companies were financed by SVB. Companies such as Airbnb, Cisco, Fitbit, Pinterest, and Block, Inc. have been clients of the bank.

In addition to financing venture-backed companies, SVB was well known as a source of private banking, personal credit lines, and mortgages to tech entrepreneurs and specialized lending money to higher-risk new companies. Silicon Valley Bank required an exclusive relationship of those borrowing from the bank. Prior to March 9, 2023, SVB was in "sound financial condition", according to the California Department of Financial Protection and Innovation, though an increased number of short sellers began to target SVB earlier in the year. Employees received their annual bonuses on March 10, 2023, hours before the government took control of the company.

As of the last call report of the bank, filed on December 31, 2022, it held $209 billion in total assets, with $175.5 billion in total deposits, of which the bank estimated $151.6 billion (86.4 percent) were uninsured.

## 2.3 Collapse Losses

The bank's deposits increased from $62 billion in March 2020 to $124 billion in March 2021, benefiting from the impact of the COVID-19 pandemic on science and technology. Most of these deposits were invested in long-term Treasury bonds as the bank sought a higher return on investment than was available on shorter-term bonds.

These long-term bonds fell in current market value as interest rates rose during the 2021–2023 inflation surge and they became less attractive as investments. In April 2022, SVB's chief risk officer stepped down, and a successor was not named until January 2023, a period coinciding with the period of interest rate increases. At the end of 2022, its marked-to-market unrealized losses for securities held to maturity exceeded $15 billion.

At the same time, startup companies withdrew deposits from the bank to fund their operations as private financing became harder to come by. A series of layoffs in the technology sector that began in 2022 also caused depositors to draw down their savings. To raise needed cash to fund the withdrawals, the bank sold all of its available-for-sale securities, realizing a $1.8 billion loss. The bank was criticized for timing its announcement shortly after Silvergate Bank started winding down its operations, and for not lining up private funding ahead of the announcement.[

Some banking experts said that the bank would have managed its risks better had it not been for the Economic Growth, Regulatory Relief, and Consumer Protection Act (EGRRCPA), enacted in 2018 and supported by SVB CEO Greg Becker, which reduced the frequency and number of scenarios of required stress testing implemented under the Dodd–Frank Wall Street Reform and Consumer Protection Act for banks with under $250 billion in assets. The Federal Reserve Bank of San Francisco did have discretion to annually examine any bank with $100 billion in assets. In implementing the regulatory changes, Federal Reserve Vice Chair Randal Quarles also changed the Federal Reserve's bank supervisory culture, allegedly making routine supervision less intense and more predictable.

## 2.4 Instability

In the week before the collapse, Moody's Investors Service reportedly informed SVB Financial, the bank's holding company, that it was facing a potential double-downgrade of its credit rating because of its unrealized losses. On March 8, 2023, SVB announced it had sold over $21 billion worth of its investments, borrowed $15 billion, and would hold an emergency sale of its stock to raise $2.25 billion, including $500 million to General Atlantic. JPMorgan Chase and Bank of America turned down opportunities to acquire the bank. Despite the steps taken by the bank, Moody's downgraded SVB on March 8.

Investors at several venture capital firms, including executives at Peter Thiel's Founders Fund urged their portfolio companies to withdraw their deposits from the bank. By the close of business on March 9, customers had withdrawn $42 billion, leaving the bank with a negative cash balance of about $958 million.

Among the financial services companies receiving money from SVB customers were Brex, JPMorgan Chase, Morgan Stanley and First Republic Bank. Venture capital funds including Founders Fund, Union Square Ventures and Coatue Management had encouraged companies in their portfolios to avoid ramifications from SVB's collapse by withdrawing their money. Founders Fund withdrew all of its funds from the bank by the morning of March 9. The value of SVB's shares plummeted until a trading halt was implemented on the morning of March 10.

### 2.5 Receivership

The FDIC temporarily created the Deposit Insurance National Bank of Santa Clara (DINB) to distribute insured deposits before replacing it with a bridge bank.

On the morning of March 10, examiners from the Federal Reserve and the Federal Deposit Insurance Corporation (FDIC) arrived at the offices of SVB to assess the company's finances. Several hours later, the California Department of Financial Protection and Innovation issued an order taking possession of SVB, citing inadequate liquidity and insolvency and appointed the FDIC as receiver. The failure of SVB was the largest by assets of any bank since the financial crisis of 2007–2008 and the second-largest failure of an FDIC-insured bank.

According to regulatory reports as of December 31, 2022, uninsured deposits were estimated to represent 89 percent of total deposits at the bank. With no other bank immediately offering to assume or guarantee them, the FDIC organized a Deposit Insurance National Bank of Santa Clara (DINB) to re-open the bank's branches the following Monday and enable access to insured deposits only.

It announced that it would begin paying dividends for uninsured funds within the following week as SVB's assets were liquidated. Moody's Investor Service projected a recovery rate for uninsured depositors of 80–90 percent. The FDIC notified Silicon Valley Bank employees that they would be let go in 45 days' time; in the meantime, it offered salaried employees a 50% raise and hourly employees double pay for any overtime. The Federal Reserve Bank of San Francisco stated that the bank's CEO Greg Becker was no longer on its board of directors.

The simultaneous failures of SVB and New York's Signature Bank raised concern about the condition of other regional banks, with particular attention to First Republic Bank and Western Alliance. Faced with the possibility of a broader loss of confidence, on March 12 the Treasury granted the FDIC an exception allowing it to guarantee the uninsured deposits of both failed banks and to cover the expense through special assessments on other member banks. On March 13 the FDIC transferred SVB assets to a new bridge bank, Silicon Valley Bridge Bank, N.A., and appointed Tim Mayopoulos as CEO. The bridge bank consolidated insured and uninsured deposits into a single institution, making it more attractive to prospective buyers. There is a dispute about whether the U.S. government's guarantee to insure depositors in full, rather than just the $250,000 per account protected by law, qualifies as a bailout. President Joe Biden denied the term bailout applies in this particular case. Treasury Secretary Janet Yellen had already ruled out bailing out SVB.

Silicon Valley Bank's overseas subsidiaries held $13.9 billion in deposits. The Bank of England issued a statement that it sought a court order to place the United Kingdom subsidiary of the bank into a Bank Insolvency Procedure. Shanghai Pudong Development Bank issued a statement that its joint operations with SVB, chaired by its own Shanghai-based chairman, were not affected by the collapse as of March 11.

HSBC UK announced on March 13 that it had agreed to acquire Silicon Valley Bank UK for £1, at no cost to taxpayers and with depositors fully protected. Canadian regulator Office of the Superintendent of Financial Institutions (OSFI) temporarily seized control of SVB Canada on March 12. On March 15, OSFI took permanent control of the bank and announced it would restructure SVB Canada to a new bridge bank to be created by the FDIC, after the regulator was unable to find a buyer.

An initial auction of Silicon Valley Bank assets on March 12 attracted a single bid that was not from a bank, after PNC Financial Services and RBC Bank backed away from making offers. Bank of America, JPMorgan Chase, and Goldman Sachs all declined to make offers. The FDIC rejected the lone bid and plans to hold a second auction to attract bids from major banks, now that the bank's systemic risk designation allows the FDIC to insure all deposits. The bank's loan portfolio, which Moody's recently rated as conservative and high-performing, was not a factor in the collapse and is considered to be an attractive asset. Private equity firms including Apollo Global Management, Blackstone Inc., and Kohlberg Kravis Roberts are considering a purchase of the bank's loans. The FDIC is giving traditional banks an advantage over private equity firms by limiting examinations of the bank's financials to institutions that hold a bank charter.

In the meantime, Mayopoulos urged venture capitalists and startups to keep their deposits in the bridge bank, apparently to improve the bank's financial condition. He suggested that customers return some of the deposits they had recently pulled out of the bank, as part of a diversification strategy. A group of venture capitalists called for depositors to keep at least half of their capital in the bank.

SVB Financial Group began exploring a potential sale of the bank's sister companies SVB Capital and SVB Securities. The latter's founder, Jeffrey Leerink, has expressed interest in buying back the firm. However, the finances of these companies are deeply intertwined with Silicon Valley Bank, which could complicate any sale. The company filed Chapter 11 bankruptcy one week after the bank's failure. A group including Centerbridge Partners, Davidson Kempner Capital Management, and PIMCO reportedly bought a stake in the company in anticipation of the bankruptcy.[

## 2.6 Effects

Experts said that SVB's collapse was unlikely to pose a systemic risk to the U.S. financial system. However, although experts think these effects are temporary, the bank's collapse created hardships among some tech startups, and companies holding significant uninsured deposits and low cash flow faced significant risks.

## 2.7 Customers

Many startups were unable to retrieve money, resulting in companies taking out loans to make payroll. Because California state law requires employees to be paid within a certain number of days, continued inability to access deposits could have caused a large number of startups to furlough workers, reduce their workforce through layoffs, or shut down entirely. The bank's collapse also reduces available funding for startups on the venture debt market, which has grown in importance as venture capital firms have dramatically scaled back their investments.

E-commerce company Etsy was forced to delay seller payouts; the company used SVB to send out deposits to some sellers. The bank's collapse coincided with the beginning of the annual, startup-oriented South by Southwest Interactive conference in Austin, Texas. Aside from some disruption caused by SVB credit cards, attendees maintained an air of calm during the event.

In the days after the collapse, startup founders and other customers lined up outside bank branches in Silicon Valley and San Francisco, seeking to withdraw their deposits or learn the status of their wire transfers. Many technology entrepreneurs regained access to their deposits on March 13.

In a Securities and Exchange Commission (SEC) filing, streaming media company Roku, Inc. revealed that around a quarter of the company's cash reserves—$487 million—were held by SVB. Other companies affected by the collapse include video game developer Roblox Corporation, video hosting service Vimeo, and payroll processor Rippling. More than 1,500 climate change–related technology startups had taken out loans or had lines of credit with Silicon Valley Bank. The failure came at a sensitive time when many such startups were scaling up to meet expected demand from the Inflation Reduction Act of 2022.

Outside the technology startup space, Vox Media and BuzzFeed had its cash concentrated at the bank, and Vox Media saw its SVB-issued credit cards stop working. The California wine industry was also affected by SVB's collapse, since it was a leading regional winery banker. Some Oregon wineries were also affected. The bank's premium wine division had about $1.1 billion in outstanding loans to about 400 clients. California Governor Gavin Newsom's wine companies were among the bank's clients. Businessman Mark Cuban reportedly had millions in the bank, along with his side venture Cost Plus Drugs

Since 2002, the bank had made $2.7 billion in loans and investments, including $1.6 billion in loans since 2014, to build nearly 10,000 units of affordable housing in Silicon Valley and San Francisco, as well as affordable housing in Massachusetts (from its 2021 acquisition of Boston Private). The collapse left 11 projects in the San Francisco Bay Area in limbo, plus two more in Los Angeles and the Central Valley. Housing advocates predicted delays and difficulty assembling funding. Some nonprofit organizations expect to deal with fallout from the bank's collapse for months. As a legacy of SVB's Boston Private acquisition, it provided free banking services to many nonprofits in San Mateo County, California, who have needed to redirect donations to alternative bank accounts.

Ahmad Thomas, CEO of the Silicon Valley Leadership Group, of which the bank was a member, described the failure as a setback for the San Francisco Bay Area's startup ecosystem and noted that it would be difficult to replicate the bank's business model.

## 2.8 Shareholders

Silicon Valley Bank's holding company, SVB Financial Group, was a component of the S&P 500. At the time of the collapse, its largest shareholders included The Vanguard Group, BlackRock, and State Street Corporation, which owned the stock in large exchange traded funds that track the performance of S&P 500. The South Korean National Pension Service owned 100,000 shares in SVB's holding company, SVB Financial Group. CalPERS (California state pension fund) held about $67 million in bonds to the bank, or less than two percent of one percent of total investments, as of June 2022.

On March 13, shares of similar regional banks, including First Republic Bank, Western Alliance Bancorporation, and PacWest Bancorp plummeted.

## 2.9 Financial system

Market capitalization of U.S. banks lost a combined $100 billion in two days and European banks lost $50 billion. SVB's losses highlighted the challenge that banks could face as interest rate increases reduced the market value of bonds that they purchased under low-rate policies. Some companies have sought safety with larger commercial banks, transferring their deposits out from regional banks similar to Silicon Valley Bank, raising concerns about further instability in the banking sector. Several banks, such as First Republic Bank and Western Alliance Bancorporation, issued press releases seeking to calm investors.

Despite these concerns, banking experts believe that other banks will remain stable as SVB was overly specialized in providing banking to a risky sector of the economy, and financial regulations have strengthened since the 2008 financial crisis, which preceded the Great Recession. SVB had, in 2021, reached the threshold under the Dodd-Frank Act requiring it to submit a resolution plan ("living will") to the FDIC, which it did the following year. It had not participated in periodic stress testing under the act, as the threshold for that requirement had been raised in 2018 under EGRRCPA; SVB's chief executive was among those requesting the change.

On March 12, 2023, Signature Bank was also closed, being taken into possession by the New York State Department of Financial Services. Following the bank failures, the Federal Reserve announced the creation of a Bank Term Funding Program to shore up liquidity for other at-risk banks.

Circle, a peer-to-peer payments technology company that issues the stablecoin USD Coin (USDC), attested that SVB is one of the six banking partners used by the company to manage its cash reserves for USDC, with $3.3 billion (approximately 8%) of its cash reserves held there. USDC's price fell below its US$1 pegged exchange rate during trading on March 10 and 11, causing Coinbase to halt conversions between USDC and U.S. dollars. USDC had recovered most of the losses after Circle assured investors that the peg would remain honored.

The failure complicates an ongoing lobbying effort by large banks against the Federal Reserve's requirement that they hold cash equivalents to government-backed securities, such as the Treasury bonds that Silicon Valley Bank invested in.

## 2.10 Legal actions

On March 13, the Federal Reserve Board of Governors announced an investigation by Vice Chair for Supervision Michael Barr into supervision and regulation of the bank, which will be released publicly by May 1. The U.S. Securities and Exchange Commission and U.S. Department of Justice have reportedly opened investigations into the bank's financial disclosures and executives' recent trading plans.

On March 13, an SVB shareholder filed a Securities Class Action against the company in the U.S. District Court for the Northern District of California, alleging fraud for false statements made by executives and the bank.

Senator Elizabeth Warren of Massachusetts introduced legislation, cosponsored by about 50 Democrats in the Senate and House of Representatives, that would roll back some provisions of the EGRRCPA, including regular stress testing. Senator Sherrod Brown of Ohio announced plans to hold a Congressional hearing on the bank's failure.

https://en.wikipedia.org/wiki/Collapse_of_Silicon_Valley_Bank

## 3 Before The Collapse of Silicon Valley Bank, the Fed Spotted Big Problems

The bank was using an incorrect model as it assessed its own risks amid rising interest rates, and spent much of 2022 under a supervisory review.

By Jeanna Smialek March 19, 2023
Federal Reserve and economy reporter New York Times

WASHINGTON — Silicon Valley Bank's risky practices were on the Federal Reserve's radar for more than a year — an awareness that proved insufficient to stop the bank's demise. The Fed repeatedly warned the bank that it had problems, according to a person familiar with the matter.

In 2021, a Fed review of the growing bank found serious weaknesses in how it was handling key risks. Supervisors at the Federal Reserve Bank of San Francisco, which oversaw Silicon Valley Bank, issued six citations. Those warnings, known as "matters requiring attention" and "matters requiring immediate attention," flagged that the firm was doing a bad job of ensuring that it would have enough easy-to-tap cash on hand in the event of trouble.

But the bank did not fix its vulnerabilities. By July 2022, Silicon Valley Bank was in a full supervisory review — getting a more careful look — and was ultimately rated deficient for governance and controls. It was placed under a set of restrictions that prevented it from growing through acquisitions. Last autumn, staff members from the San Francisco Fed met with senior leaders at the firm to talk about their ability to gain access to enough cash in a crisis and possible exposure to losses as interest rates rose.

It became clear to the Fed that the firm was using bad models to determine how its business would fare as the central bank raised rates: Its leaders were assuming that higher interest revenue would substantially help their financial situation as rates went up, but that was out of step with reality.

By early 2023, Silicon Valley Bank was in what the Fed calls a "horizontal review," an assessment meant to gauge the strength of risk management. That checkup identified additional deficiencies but at that point, the bank's days were numbered. In early March, it faced a run and failed, sending shock-waves across the broader American banking system that ultimately led to a sweeping government intervention meant to prevent panic from spreading.

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On Sunday, Credit Suisse, which was caught up in the panic that followed Silicon Valley Bank's demise, was taken over by UBS in a hastily arranged deal put together by the Swiss government.

Major questions have been raised about why regulators failed to spot problems and take action early enough to prevent Silicon Valley Bank's March 10 downfall. Many of the issues that contributed to its collapse seem obvious in hindsight: Measuring by value, about 97 percent of its deposits were uninsured by the federal government, which made customers more likely to run at the first sign of trouble. Many of the bank's depositors were in the technology sector, which has recently hit tough times as higher interest rates have weighed on business.

And Silicon Valley Bank also held a lot of long-term debt that had declined in market value as the Fed raised interest rates to fight inflation. As a result, it faced huge losses when it had to sell those securities to raise cash to meet a wave of withdrawals from customers.

The Fed has initiated an investigation into what went wrong with the bank's oversight, headed by Michael S. Barr, the Fed's vice chair for supervision. The inquiry's results are expected to be publicly released by May 1. Lawmakers are also digging into what went awry. The House Financial Services Committee has scheduled a hearing on recent bank collapses for March 29.

The picture that is emerging is one of a bank whose leaders failed to plan for a realistic future and neglected looming financial and operational problems, even as they were raised by Fed supervisors. For instance, according to a person familiar with the matter, executives at the firm were told of cybersecurity problems both by internal employees and by the Fed — but ignored the concerns.

The Federal Deposit Insurance Corporation, which has taken control of the firm, did not comment on its behalf.

Still, the extent of known issues at the bank raises questions about whether Fed bank examiners or the Fed's Board of Governors in Washington could have done more to force the institution to address weaknesses. Whatever intervention was staged was too little to save the bank, but why remains to be seen.

"It's a failure of supervision," said Peter Conti-Brown, an expert in financial regulation and a Fed historian at the University of Pennsylvania. "The thing we don't know is if it was a failure of supervisors."

Mr. Barr's review of the Silicon Valley Bank collapse will focus on a few key questions, including why the problems identified by the Fed did not stop after the central bank issued its first set of matters requiring attention. The existence of those initial warnings was reported earlier by Bloomberg. It will also look at whether supervisors believed they had authority to escalate the issue, and if they raised the problems to the level of the Federal Reserve Board.

The Fed's report is expected to disclose information about Silicon Valley Bank that is usually kept private as part of the confidential bank oversight process. It will also include any recommendations for regulatory and supervisory fixes.

The bank's downfall and the chain reaction it set off is also likely to result in a broader push for stricter bank oversight. Mr. Barr was already performing a "holistic review" of Fed regulation, and the fact that a bank that was large but not enormous could create so many problems in the financial system is likely to inform the results.

Typically, banks with fewer than $250 billion in assets are excluded from the most onerous parts of bank oversight — and that has been even more true since a "tailoring" law that passed in 2018 during the Trump administration and was put in place by the Fed in 2019. Those changes left smaller banks with less stringent rules.

Silicon Valley Bank was still below that threshold, and its collapse underlined that even banks that are not large enough to be deemed globally systemic can cause sweeping problems in the American banking system.

As a result, Fed officials could consider tighter rules for those big, but not huge, banks. Among them: Officials could ask whether banks with $100 billion to $250 billion in assets should have to hold more capital when the market price of their bond holdings drops — an "unrealized loss." Such a tweak would most likely require a phase-in period, since it would be a substantial change.

But as the Fed works to complete its review of what went wrong at Silicon Valley Bank and come up with next steps, it is facing intense political blowback for failing to arrest the problems.

Supervisors at the Federal Reserve Bank of San Francisco, which oversaw Silicon Valley Bank, issued six citations in 2021.

Some of the concerns center on the fact that the bank's chief executive, Greg Becker, sat on the Federal Reserve Bank of San Francisco's board of directors until March 10. While board members do not play a role in bank supervision, the optics of the situation are bad.

"One of the most absurd aspects of the Silicon Valley bank failure is that its CEO was a director of the same body in charge of regulating it," Senator Bernie Sanders, a Vermont independent, wrote on Twitter on Saturday, announcing that he would be "introducing a bill to end this conflict of interest by banning big bank CEOs from serving on Fed boards."

Other worries center on whether Jerome H. Powell, the Fed chair, allowed too much deregulation during the Trump administration. Randal K. Quarles, who was the Fed's vice chair for supervision from 2017 to 2021, carried out a 2018 regulatory rollback law in an expansive way that some onlookers at the time warned would weaken the banking system.

Mr. Powell typically defers to the Fed's supervisory vice chair on regulatory matters, and he did not vote against those changes. Lael Brainard, then a Fed governor and now a top White House economic adviser, did vote against some of the tweaks — and flagged them as potentially dangerous in dissenting statements.

"The crisis demonstrated clearly that the distress of even noncomplex large banking organizations generally manifests first in liquidity stress and quickly transmits contagion through the financial system," she warned.

Senator Elizabeth Warren, Democrat of Massachusetts, has asked for an independent review of what happened at Silicon Valley Bank and has urged that Mr. Powell not be involved in that effort.  He "bears direct responsibility for — and has a long record of failure involving" bank regulation, she wrote in a letter on Sunday.

## 4 John Mauldin Another Unstable Finger

### Thoughts from the Frontline Mauldin Economics March 17th 2023

There's an old saying: Whenever the Fed hits the brakes, someone goes through the windshield," said Michael Feroli, chief economist at J.P. Morgan. "You just never know who it's going to be." (The New York Times, March 16, 2023)

Running a bank is a balancing act because the assets (loans) and liabilities (deposits) have different maturities. People can demand their cash any time but the bank can't call in its loans, at least not quickly. It works only because most people leave their balances in place most of the time. Having a loyal, diversified depositor base helps, too.

This seems to have been a problem for SVB. Most of its deposits came from a relatively small group of venture capital firms that "recommended" the startup companies they funded keep cash at SVB. When that small number of firms decided to leave, SVB didn't have the liquidity to pay them all.

What SVB did have was a pile of longer-term Treasury and mortgage bonds it had bought when deposits ballooned in 2020-2021, before the Fed started raising interest rates in early 2022. When interest rates rise the market value of bonds falls. That's not a problem if you hold the bonds to maturity. It can be a big problem if you need to sell.

Joseph R. Mason and Kris James Mitchener wrote a brief (and sadly overlooked) piece for the WSJ on Wednesday. To me this is the heart of the regulatory failure. Quoting:

"Even if midsize banks had been subjected to the same scrutiny as large banks, it isn't clear that stress testing them would have led to changes that would have prevented failure. Why? Because the tests asked the wrong questions. They failed to encompass the scenarios that ultimately led to SVB's demise—large and rapid increases in interest rates.

"In its February 2022 Stress Test Scenarios, the Fed's "severely adverse scenario" asked banks to assess their riskiness over a three-year horizon in a hypothetical world in which the three-month Treasury rate stays near zero while the 10-year Treasury yield declines to 0.75% during the first quarter of 2022 and doesn't change in the subsequent two quarters. Even in December 2021, however, the Federal Open Market Committee's Summary of Economic Projections was showing the Fed likely targeting interest rates double those of 2022 in 2023, far higher than what it used for bank stress tests.

"A reasonable observer would expect FOMC's policy objectives to have been embedded in the 2023 Stress Test Scenarios. But by February 2023, the Fed still hadn't changed its regulations to match its monetary policy. While FOMC's December 2022 projections show its policy rate reaching 5.1% by the end of 2023, the February 2023 severely adverse scenario was almost identical to that used in February 2022: The three-month Treasury rate falls to near zero by the third quarter of 2023, while the 10-year Treasury yield falls to around 0.5% by the second quarter, then gradually rises to 1.5% later in the scenario.

"The 2023 severely adverse scenario's assumptions bore no relationship to reality. In February 2023, the three-month Treasury rate had already risen above 4.5%. Since Feb. 10, 2022, the 10-year has nearly doubled, from about 2% to almost 4%. Even this year, from Feb. 9 to March 10, the 10-year yield has risen by about a quarter of a percentage point."

Do the Fed's bank regulators not at least talk with or read about what their monetary policy brethren are doing? Rates have been rising for a year! The regulatory executives who somehow overlooked this should be asked to polish their resumes and seek other pastures. The excuse that historically interest rates fall during a recession so that should be the stress test scenario just doesn't hold water here.

One angle I find fascinating (and troubling) is that almost all (94%!) SVB's deposits were above the $250,000 FDIC coverage limit, and therefore uninsured.

# Silicon Valley Bank  The Bank from Planet ZIRP

## 5 The Weekend that Prevented a Financial Crisis

## March 12 2023 Simon Taylor Fintech Brain Food

## https://sytaylor.substack.com/

Last weekend gave regulators, bank staff, and the rest of us a few days to step back, calm down, and fix the problem—an essential reminder of the power of humans in the age of always-on, 24/7, digital everything.

On March 10, 2023, the 16th largest bank in the USA, Silicon Valley Bank (SVB), collapsed after a run on its deposits. It was the second-largest bank failure in US history and a shock to the tech industry that relied on its services.

### How did this happen? And is this contagion?

Over the past weekend, the FDIC stepped into backstop deposits at SVB and Signature Bank. Then at the market open on Monday, bank stocks got crushed, especially those resembling Silicon Valley Bank (SVB). Earlier this week, Credit Suisse's stock plunged 24% before recovering after the Swiss National Bank stepped in to shore up the lender.

But this is not a financial crisis like 2008.  The scar tissue many who grew up or worked through the financial crisis have is coloring judgment and popular perception.  What we have here is companies breaking when interest rates rise. And a lesson for all of us about why risk management is the most important job in finance.

### We're in a crisis of confidence, not solvency.

No bank in the world is fully immune to bank runs, but the cause of bank runs is often more human than purely data-driven when you combine the worries of those who remember 2008. The famous last words of any analyst are, "this time, its different." And to some extent, it is. The truth is more complicated and nuanced.

SVB was a unique animal. SVBs specialism allowed it to rise quickly in the tech boom. It was exceptionally good at banking startups and tech companies and grew with them. But, it had a concentration of customer type (VC backed tech companies) that turned out to be volatile and withdrew their cash quickly when VCs said to do so).

How a bank's business model normally works (maturity transformation). Banks rely on deposits to be sticky for their core business model. But holding deposits isn't free; it has a cost. So they have to find yield. They find other means if they can't lend to generate that yield.

SVB saw explosive growth in deposits in 2021, which created a unique challenge. In 2021, SVB's deposits were 3x, but its loan demand only increased by 0.15x. It needed to find another way to make money.

The run on the bank. As deposits slowly eroded through 2022, SVB believed it would gradually transition back to profit, but it needed to sell more shares to raise some capital. It announced the capital raise on the same day Silvergate went into liquidation. The average deposit at SVB was $4.3m, well above the $250k FDIC-insured limit. A run began faster than ever in history thanks to 24/7 digital online banking.

Could they have managed risk better? The short answer is always yes, but it's not that simple. The lack of a chief risk officer for eight months probably didn't help, but it was a commercial decision. SVB believed they were "structurally hedged." They didn't anticipate bank contagion and a run.

Some ask, "where were the regulators" but for that, we need to look at the 2018 banking reforms that prevented "stress testing" on banks the size of SVB. Regulators have a perimeter set by law.

The aftermath. Watching Fintech companies rapidly develop credit solutions to help make payroll was incredible. But what doesn't get enough recognition is the SVB staff, working all weekend with regulators to keep things running. Say what you want about leadership, bank and regulatory, operational staff rarely get applause, and they're heroes in a crisis. Massive shout out to the HSBC acquisition of SVB UK, I think that could be a good outcome for all involved.

Is this contagion? It doesn't have to be. Some badly run banks are exposed (e.g., Credit Suisse), and some with structural risks in one sector (SVB and First Republic) need support. But it strikes me more as a slow-motion flushing out of leverage and bad risk management. It becomes a contagion if the crisis becomes a crisis of confidence in the whole system. And with Bitcoin and Gold shooting up, that is a possibility (although not a probability for me, far from it).

What happens now? Banks’ risk teams are working incredibly hard to shore up balance sheets; Fintech companies are upping their FDIC offerings by spreading deposits across multiple banks. Sadly partisan politics has broken out, with some blaming Crypto and others “woke” leadership. But ever the optimist, I see an opportunity here. We should build digital regtech and supervision to understand counterparty risk.

### 5.1 SVB is a unique animal.

SVB was founded by two former Bank of America managers who had a vision: to create a bank that would cater to the needs of startup companies.

SVB grew with the local high-tech economy, achieving profitability and expanding internationally. It also diversified into other sectors, such as life science, health care, and premium winemaking. Its superpower was being exceptionally good at understanding the needs of these sectors and getting s**t done that other banks couldn't. If you're a tech company founder, they'd understand that niche and deliver accounts, relationships with VCs, and financial products unique to that circumstance.

SVB was so good at its niche that by 2022 it banked almost half of US venture-backed tech and life science firms and 44% of venture-backed tech and healthcare IPOs. But SVB's success came at a price: concentration risk.

Tech is a small world; when VCs say, "pull your money," their portfolio companies act. In the banking world, we call this "hot money." Hot because it moves so fast. That's a problem because banks need deposits to be stable due to the nature of their business model.
Take a detour with me into a little business model called maturity transformation.

### 5.2 Maturity transformation or "Risk Now vs. Tomorrow."

When I first heard the term, I thought, "gosh, this sounds like the dullest finance term ever." It is possibly the most business buzzword since "synergy." But ignore that for a second. But if I summarize what Frank goes through in this tweet thread.

Every business has a core function. Some businesses make athletic shoes while others make wide screen televisions. What’s become clear over the past week is that many people don’t understand what Banks actually do.

Banks hold your money (deposits). You can remove them at any time (risk now)
They pay you to protect your money for you (interest); this is their cost. They turn (transform) deposits into longer-term capital (like loans) this is risk tomorrow

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A bank holds a capital buffer to ensure some but not all customers can withdraw their deposits day to day If a bank's customers all want their deposits now (risk today), the bank might not be able to sell all of its loans (risk tomorrow). That's called a bank run.

That sounds easy on the service, but the risk and reward come from the longer-term capital. When a bank lends to a consumer or business, they're taking a risk over a given time horizon. For a 5-year loan, they give the borrower all of the capital today in return for a monthly payment + interest. If this goes well in 5 years, the bank will make 10%!

But if the loan goes bad, the bank loses everything.
Their maximum upside is (for example) 10%, and their maximum downside is 100%. So they need to get good at managing risk. That is the core function and skill. So they can pay depositors and make a profit.

But all of that assumes the deposits sit there. Deposits are considered sticky by consumers and businesses (it's where paychecks go). A bank can handle losses in its loan portfolio if they continue managing risk. But things happened to SVB during 2021 that made things less simple.

### 5.3 In 2021 SVB and an influx of deposits

2021 saw a sudden and massive growth in deposits. VCs had raised the largest funds in history and deployed that to high-growth tech companies. Between 2019 and Q1 2022, the bank's deposits 3x to $198bn, costing them 1.17% to hold and manage. On the surface, this sounds amazing. More deposits mean more lending, which means more potential profit. They'd be in great shape if they could make more than 1.17%.

Except. There wasn't enough loan demand. SVB could only channel about 15% of those deposits into loans. SVB would lose money if you have 3x the deposits but don't have 0.15x loan demand.

### 5.4 So what did they do?

SVB bought bonds and mortgage-backed securities for yield. SVB needed some way of generating income, so they looked to purchase two types of investment assets to generate yield.

As Marc Ruby from Net Interest describes:

When banks purchase securities, they are forced to decide up-front whether they intend to hold them to maturity. The decision dictates whether the securities are designated as "held-to-maturity" (HTM) assets or as "available-for-sale" (AFS) assets.

The important thing to remember is that an available-for-sale ( AFS ) asset will show losses or gains in real time because they are "marked to market." Banks must mark that on their balance sheet if the market price changes. Banks initially preferred the available-for-sale variety so they could sell if market conditions changed.

However, held-to-maturity assets get amortized. Banks can ignore the daily price moves and happily collect and yield.

As the SVB deposit book grew, its HTM securities ballooned from $13.8bn to $98.7bn. While it held $27.3bn as available for sale, the vast majority needed to deliver a much higher yield to cover its costs. The HTM securities delivered between 1.65% and 1.75% yield.

### 5.5 Then it started to go wrong. There were warning signs

Sign 1: Rising interest rates hurting the HTM mortgage-backed securities SVB held, losing more than $16bn in value. it would be 6+ years before they'd feel this impact, and they could amortize that cost. At the time, the yield from purchasing these assets continued to deliver $3bn per quarter. Phew.

Sign 2: Companies choosing to buy treasuries instead of holding deposits. When a tech company (or even a Crypto business) can generate 5.1% holding US treasuries, why would they store their deposits at a bank giving them ~0%?

Sign 3: Deposit erosion. Deposits dropped from $198bn to $165bn by Feb 2023. As interest rates rose sharply in early 2023, IPOs dried up, and private funding became scarce. Some of SVB's clients started pulling money from the bank to meet their liquidity needs.

Sign 4: Silvergate had struggled to contain losses as it saw deposit flight. With the Crypto correction, Silvergate, a specialist in that industry, saw many of its clients vanish and struggled to raise enough capital to cover its losses. Although a smaller bank, it had a massive run up of deposits, had to find yield, and then deposits started to vanish.

SVB had to react and ensure it had enough balance sheet strength (tangible common equity) to survive the coming storm; SVB decided it needed to do two things. 1) Sell its AFS securities. It sold $21bn of these securities for a $1.8bn loss. 2) It announced it would issue more shares to raise capital. Except it never got done with #2. SVB had the worst timing. It announced its restructuring the same day Silveragte went into liquidation.

### 5.6 . The run on the bank.

This news had a rapid impact.
Of SVBs $173bn deposits at the end of 2022, $152bn were uninsured (88%). Where a consumer or small business may be comfortable with a $250,000 insurance from the government if the bank goes under, a VC with $50m stored might be much less.

Prominent VCs famously withdrew millions from the bank and advised their portfolio companies to do the same. This happened faster than at any time in history. Online and digital banking is a game changer. Customers can withdraw so immediately when they want to get deposits out. The SVB website struggled to cope as word quickly spread.  No company or fund wanted to be the last to get their deposits out. It became a full-blown run on the bank.

But SVB had already sold its available-for-sale assets, and if it tried to sell its held-to-maturity assets, they'd be "marked to market," meaning the bank would face more losses and need to raise even more capital. And it hadn't completed the last capital raise yet!

It couldn't raise rates without losing money and had already borrowed as much as it could from the Federal Home Loan Banks. Forcing the FDIC to step in. No bank can survive a run.  But they might be able to prevent them.

### 5.7  Could the bank have hedged its risk better?

The short answer is always yes. Institutions can buy a financial product to hedge against interest rate risk (Interest Rate Swaps). But those products have a cost. In 2021, SVB had a profitable strategy and believed it was "structurally hedged." Because it's held to maturity, assets would take another 5 years to become a loss, and because they were still giving yield, they'd be ok.

It was widely reported that at the time of the collapse, SVB had no chief risk officer (CRO) from April 2022 until January 2023. While this caused outrage in some corners (OMG, NO RISK OFFICER!). A CRO is a head of a department full of people called asset and liability management (ALM), who's entire function is to price and manage this risk. The lack of a CRO cannot be blamed for what was ultimately a commercial decision by leadership (but it undoubtedly contributed).

Some also wonder, "where were the regulators?" But that's another more nuanced and complex topic. Despite being the 16th largest bank in the US, SVB did not have to follow the strict capital and stress testing rules that the systemically important financial institutions (SIFIs) have to since 2008.

From 2008 through 2018, all banks with more than $50bn in assets were subject to regular "stress tests" by supervisors. In 2018 the bank lobby (led by the CEO of SVB) felt this created an unfair ceiling on their business. The lead on lobbying for this to be reformed was, you guessed it, the CEO of SVB. As with all things, there's rarely a single cause. But the crisis triggered by a bank run required a rapid response from regulators. Fortunately, that happened over a weekend while markets were closed.

### 5.8. The aftermath.

The timing of this crisis was right before tech companies had to make their mid-month payroll. If SVB had gone under, companies wouldn't make payroll and could have become insolvent. This would be catastrophic.

The panic was legitimate once the run started. We saw various Fintech companies like Brex, Mercury, and Arc announce credit lines for companies with funds stranded at SVB. They've now begun to increase the FDIC protection they offer (by spreading deposits across multiple banks).

Then on Sunday, March 12, the Federal Reserve announced it would make funding available to ensure banks can meet the needs of depositors. Over the coming days, the staff at SVB worked to ensure normal operations.

Two things strike me.
First, the professionalism of SVB staff is above and beyond. While they're potentially worried about being out of a job, they also work hard to keep the lights on. Second, regulation works. Regulators don't often get praise but may have prevented a catastrophe here, and we should be grateful.

A crisis like this involves working through the early hours, almost no sleep, and incredibly high stakes. But because humans intervened, over a weekend, while markets were closed. Payrolls happen, and life goes on.

Meanwhile, HSBC also acquired the UK arm of SVB. This acquisition is a big win for HSBC, who now has access to a high-growth tech client base they'd ordinarily struggle to serve well and some very talented relationship managers.

HSBC has a history of acquiring a brand and leaving them alone. It acquired First Direct in 1992, then famous for being a branchless bank with high-quality customer service via the telephone. To this day, the First Direct brand operates separately and regularly tops customer service charts. That, but for the UK tech sector, could be a good outcome for all involved.

Is this contagion? This is not 2008, far from it. It's a unique, dynamic, and fluid situation with more to do with rising interest rates than with doomsday scenarios like the collapse of the banking system that we feared in 2008. There are similar banks to SVB, but SVB was in its own league. SVB is an outlier

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# Silicon Valley Bank  The Bank from Planet ZIRP
## 6 Something Odd Thoughts from the Front Line

### John Mauldin 1st April 2023

We'll begin by noting something odd at Silicon Valley Bank: At the time it failed, some 96% of SVB's deposits were in excess of the FDIC limit ($250,000 in most cases) and therefore uninsured.

More accurately, they would have been uninsured except that the FDIC, in consultation with the Federal Reserve Board and Treasury Secretary Janet Yellen, invoked a "systemic risk" clause to extend unlimited coverage to all SVB deposits.

This decision wasn't cost-free. Last week the FDIC announced it had, after liquidating SVB's assets, paid out an additional $20 billion to make depositors whole. This was charged to the FDIC's Deposit Insurance Fund, which is funded by assessments on all banks and must now be replenished. Also keep in mind, the FDIC is backstopped by the US Treasury if its own funds are insufficient. "Taxpayers" didn't pay anything this time but are potentially at risk.

That makes it harder to deny SVB depositors received a "bailout." I know it's a loaded word, but facts are facts. As I understand it today, the FDIC essentially unloaded SVB's easily tradeable assets, sold the rest to another bank, and still had to draw from its own reserves to make good on the expanded deposit insurance guarantee. Those who received the benefit had been clearly warned not to expect any such thing, yet they got it anyway. "Bailout" seems to fit. SVB wasn't systemic until it was.

(That $20 billion isn't spare change, either. The FDIC's reserves were $128.2 billion as of last year-end. SVB alone consumed over 15% of this balance. A few more such incidents—or even a single large one—could easily deplete this fund. The FDIC is going to levy a special assessment on other banks to replenish their funds. Who pays? The banks? No, ultimately their customers. They must keep shareholders happy, just like the consumer products makers who (blaming inflation and the Fed), raise prices to meet forecasts.

There's no obvious reason why these large and presumably sophisticated SVB customers would keep such large amounts of uninsured cash in bank accounts. A bank account is a loan to the bank. FDIC assumes the credit risk for balances below the well-known limits. Above that, any losses are on the depositor.

Moreover, many alternatives are available—sweep programs and such. SVB itself had one, though few customers seem to have used it. Why? I simply can't believe the CFOs of large companies like Roku—which had almost $500 million of uninsured cash at SVB—did this unwittingly. All I can imagine is SVB offered some other benefit they thought justified the higher risk and lower yield. What that benefit was, I don't know.

For whatever reasons, large depositors feel increasingly confident with the risk of holding uninsured balances. Maybe they think the banks won't fail. Maybe they feel sure the FDIC will save them even if the bank does fail—which was a winning bet in the SVB case. But these are giant assumptions which affect both depositors and banks.

My thoughts on FDIC insurance? They should raise the limits to $500,000 or $1 million and somehow cover specialty accounts like payroll which must have larger amounts. Offer a way for larger depositors to buy additional FDIC insurance.

When you see your life flash before your eyes, the natural reaction is to become more cautious. The owners of about $10 trillion in uninsured bank deposits, now realizing it is at risk, are looking for new arrangements.

This comes as some of those depositors were beginning to notice they could get significantly higher yields in non-bank instruments like Treasury bills and money market funds. Bank rates have always been lower but the spread matters. Moving money out of your bank for an additional 1% yield might not be worth the trouble. Triple that difference and it becomes more tempting.

So, we have two different but complementary forces at work: safety and yield. Both are pulling money out of banks, particularly small banks. If yield is your priority, your best bet is to move out of banks into Treasury securities, money market funds, and other short-term debt instruments. If you absolutely want safety, then Treasury bills are probably still your best bet.

But there's a third force: convenience. Or maybe "inertia" is a better word. Many folks, even some wealthy ones, just default to keeping their money in a bank. The fact you read an investment newsletter says you probably aren't in that category but it does exist. Combine it with the businesses who need to keep their working capital quickly accessible, and a lot of cash is firmly attached to banks. Again, larger businesses need to maintain payroll accounts, which is why they should be a separate category.

## 7 The Risk Models Flashed Red. So its executives change it

Flush with cash from a booming tech industry, Silicon Valley Bank executives embarked on a strategy in 2020 to juice profits that quickly triggered an internal alarm.

In buying longer-term investments that paid more interest, SVB had fallen out of compliance with a key risk metric. An internal model showed that higher interest rates could have a devastating impact on the bank's future earnings, according to two former employees familiar with the modelling who spoke on the condition of anonymity to describe confidential deliberations.

Instead of heeding that warning — and over the concerns of some staffers — SVB executives simply changed the model's assumptions, according to the former employees and securities filings. The tweaks, which have not been previously reported, initially predicted that rising interest rates would have minimal impact.

The new assumptions validated SVB's profit-driven strategy, but they were profoundly misplaced. Over the past year, interest rates have climbed nearly five percentage points, the fastest pace since the 1980s. Meanwhile, the tech industry has entered a post-pandemic swoon, causing SVB's elite clientele to withdraw cash far faster than bank executives had expected.

On March 8, the bank was forced to raise additional cash by selling securities at a $1.8 billion loss. That touched off panic among SVB clients, who staged one of the biggest bank runs in U.S. history. Fanned by social media, depositors tried to withdraw $42 billion in a single day. The next morning, the bank collapsed and federal regulators took control.

The episode shows that executives knew early on that higher interest rates could jeopardize the bank's future earnings. Instead of shifting course to mitigate that risk, they doubled down on a strategy to deliver near-term profits, displaying an appetite for risk that set the stage for SVB's stunning meltdown.

“Management always wanted to tell a growth story,” one former employee involved in the bank's risk management said. “Every quarter, there was always this pressure to deliver earnings.”

The new revelations come as lawmakers and regulators review what a senior Federal Reserve official called a “textbook case of mismanagement” leading to the nation's second-largest bank failure. Much of their focus will turn to the arcane world of managing interest-rate risk.

SVB's new projections took effect last year and assumed that cash flow from deposits would stay consistent for longer, softening the projected bite of higher interest rates. Before changing the model, an interest-rate hike of two percentage points would drop a measure of future cash flows by more than 27 percent; afterward, the hit was less than 5 percent, according to the bank's securities filings.

Pushing for the change in assumptions was Dan Beck, SVB's chief financial officer, according to one former employee, and it was approved by the bank's Asset Liability Management Committee, which manages interest-rate risk, both former employees said. The change made several mid-level bank officials uncomfortable, one person said, though there was historical data on deposits to support it.

Efforts to contact Beck were unsuccessful, and lawyers representing him in a lawsuit didn't respond to requests for comment. Efforts to contact Michael Kruse, who headed the bank's Asset Liability Management Committee, according to the former employees, were also unsuccessful.

One of the former employees said changing assumptions about interest-rate risk were shared with federal and state regulators in late 2021 or 2022.

An official at the California Department of Financial Protection and Innovation said it could not comment on "confidential supervisory information."

Michael Barr, the Fed's vice chair for supervision, testified to a Senate committee Tuesday that its supervisory team cited the bank for "ineffective board oversight" and "risk management weaknesses" in May. A Federal Reserve spokesman declined to comment beyond those public statements.

SVB was a financial pillar of Silicon Valley start-ups, lending money to companies with untested business models but high potential for growth. As SVB prospered alongside the start-ups it aided, top executives increasingly thought of themselves as part of the industry they served and prioritized highflying returns, according to current and former employees. For a time, they succeeded: The stock price of SVB Financial Group, the bank's holding company, tripled in less than two years as deposits grew at breakneck speed.

# Silicon Valley Bank  The Bank from Planet ZIRP

Greg Becker, SVB's chief executive, was given to enthusiastic pronouncements on the prospects of start-ups and tech firms, even in recent downtimes. He saw himself as more venture capitalist than banker, according to some who know him.

"He thinks about taking some risks to make effective investments in companies, which is not how banks normally do them," a longtime venture capitalist who often dealt with Becker said, speaking on the condition of anonymity to preserve relationships in the Silicon Valley finance world. "It's fair to say he was more focused on the upside than risk management."

A spokesman for Becker declined to comment for this article.

SVB's rapid growth during the early years of the pandemic created several stresses. The bank had to invest a mountain of customer cash at a time of rock-bottom interest rates. To maximize its return, the company purchased longer-term mortgage and government-backed securities that pay higher interest than the bank passed on to its depositors, allowing it to show sparkling financial performance every quarter for two years.

In an apparent bet that interest rates would go down last fall, SVB sold for a profit the financial instruments it used to hedge against the risk of higher rates, according to a company presentation. Instead, the opposite happened: The Federal Reserve began to raise interest rates more aggressively over the summer to tamp down inflation. That reduced the value of SVB's securities portfolio, meaning the bank would take a loss if it had to sell.

"They thought they could never go wrong," said a former bank official who spoke on the condition of anonymity to discuss internal business practices, recalling an internal stress test in late 2018 or 2019 that showed SVB could lose at least a third of its deposits over two years. Executives directed that that model also be reworked. "If they see a model they don't like," the official said, "they scrap it."

Kate Mitchell, a venture capitalist and chair of the SVB board's risk committee, didn't respond to a request for comment.

The behavior of customers depositing money is a key variable that banks use in developing risk models. One metric, closely tracked by banks and their examiners, estimates future cash flows and how sensitive they are to changes in interest rates. It was this metric, called the economic value of equity, that triggered a warning in mid-2020, according to the former employees.

[The economic value of equity (EVE) is a long-term economic measure/indicator of net cash flow. The EVE is calculated by taking into account the present value of all asset cash flows and subtracting the present value of all liability cash flows. In other words, it is the net present value (NPV) of a bank or a financial institution.]

ΔEconomic Value = ΔPresent Value of Assets – ΔPresent Value of Liabilities
SVB hired a consultant, Curinos, to review its interest-rate risk model, according to the former employees. The bank first disclosed the review of its model in May and finalized the change in the second quarter of 2022. But by the end of the year, SVB left out the economic value of equity — which it had reported for a decade — from its public interest-rate analysis.

Curinos declined to comment on whether it did any work for SVB, adding in a statement that the company works with banks and “routinely analyzes customer behavior to assess the likelihood that their balances will change based on different stimuli, such as interest rates.”

In catering to start-ups and tech companies, the bank had fewer customers than most banks its size. At the end of last year, 93.8 percent of SVB’s deposits were above Federal Deposit Insurance Corp. limits and thus uninsured, the highest proportion among large U.S. banks, according to S&P Global. That made it more exposed to the risk of customers pulling their money, some felt.

In April 2022, SVB parted ways with its chief risk officer of nearly six years, Laura Izurieta. The bank said that it “initiated discussions with Ms. Izurieta about a transition” in early 2022 and that she stayed on to help with “transition-related duties” until October. SVB didn’t disclose this until March 3, when a securities filing revealed it didn’t hire a new chief risk officer until late December.

Izurieta didn’t respond to requests for comment.

As late as July, Beck, the company’s chief financial officer, said on an earnings call that “we’re still well positioned to the upside for higher rates.” But pressure was mounting on SVB as interest rates rose faster than the company had expected.

When the company filed its quarterly earnings report the following month, it revealed that its long-term securities — accounting for about 45 percent of its total assets — had an unrealized loss of $11.2 billion, up dramatically from a $1.3 billion unrealized loss just six months earlier. Three months later, unrealized losses totaled nearly $16 billion.

Compounding SVB's troubles, the bank was paying higher interest to keep customers from pulling their money while borrowing at higher rates.

By the end of 2022, SVB's deposits were costing the bank almost twice as much as the median among a group of peers, according to Moody's.

Some on Wall Street were also taking notice. Chris Kotowski, an analyst at Oppenheimer & Co., downgraded SVB's stock from buy to hold last September after the bank indicated its income from interest payments was under pressure.

"That just set the alarm bells off for me," Kotowski said.

With SVB's income squeezed by higher deposit and borrowing costs, investors soured on its stock, prompting executives to make their case to Wall street analysts.

JPMorgan Chase & Co. analysts hosted a webinar last November with Beck, SVB's chief financial officer, who addressed investor concerns over nearly two hours, according to a research note the bank sent to clients. The analysts concluded that the downturn in deposits was manageable and that SVB had ample liquidity without having to sell securities at a loss, "even if a worst case scenario plays out." As late as January, JPMorgan forecast a turnaround for SVB and recommended clients buy the stock.

A week before the bank failed, in its annual report to shareholders, SVB praised its top executives for an area of achievement: managing risk.

Becker, the CEO, had displayed "strong leadership of the continued evolution of risk management." Beck, the CFO, was credited for "promotion of a strong risk culture."

# Silicon Valley Bank  The Bank from Planet ZIRP

## 8 Financial World Didn’t Realize the Risk of Assuming Low Rates Would Last

Jeanna Smialek  New York Times

If a number defined the 2010s, it was 2%. Inflation, annual economic growth and interest rates at their highest all hovered around that level — so persistently that economists, the Federal Reserve and Wall Street began to bet that the era of low-everything would last.

That bet has gone bad. And with the implosion of Silicon Valley Bank, the United States is beginning to reckon with the consequences.

Inflation surprised economists and policymakers by spiking after the onset of the coronavirus pandemic, and at 6% in February, it is proving difficult to stamp out. The Fed has lifted interest rates by 4.5 percentage points in just the past 12 months as it tries to slow the economy and wrestle price increases under control. The central bank’s decision next Wednesday could nudge rates even higher. And that jump in borrowing costs is catching some businesses, investors and households by surprise.

Silicon Valley Bank is the most extreme example of an institution being caught off guard so far. The bank had amassed a big portfolio of long-term bonds, which pay more interest than shorter-term ones. But it wasn’t paying to sufficiently protect its assets against the possibility of an interest rate spike — and when rates jumped, it found the market value of its holdings seriously dented.

Those impending financial losses helped spook investors, fueling a bank run that collapsed the institution and shot tremors across the U.S. banking system.

The bank’s mistake was a bad — and ultimately lethal — one. But it wasn’t unusual. Many banks are carrying big portfolios of long-term bonds that are worth a lot less than their original value. U.S. banks were sitting on $620 billion in unrealized losses from securities that had dropped in price at the end of 2022, based on Federal Deposit Insurance Corp. data, with many regional banks facing big hits.

Adding in other potential losses, including on mortgages that were extended when rates were low, economists at New York University have estimated the total might be more like $1.75 trillion. Banks can offset that with higher earnings on deposits, but that doesn't work if depositors pull their money out, as in Silicon Valley Bank's case.

"How worried should we be comes down to: How likely is it that the deposit franchise leaves?" said Alexi Savov, who wrote the analysis with his colleague Philipp Schnabl.

Regulators are conscious of that potentially broad interest rate risk. The Fed unveiled an emergency loan program Sunday night that will offer banks cash in exchange for their bonds, treating them as though they were still worth their original value. The setup will allow banks to temporarily escape the squeeze they are feeling as interest rates rise.

But even if the Fed succeeds at neutralizing the threat of bank runs tied to rising rates, it is likely other vulnerabilities grew during decades of relatively low interest rates. That could trigger more problems at a time when borrowing costs are substantially higher.

"There's an old saying: Whenever the Fed hits the brakes, someone goes through the windshield," said Michael Feroli, chief economist at J.P. Morgan. "You just never know who it's going to be."

The United States has gone through regular bouts of financial pain brought about by rising interest rates. A jump in rates has been blamed for helping to burst the bubble in technology stocks in the early 2000s, and for contributing to the decline in house prices that helped to set off the crash in 2008.

Even more closely related to the current moment, a sharp rise in interest rates in the 1970s and 1980s caused acute problems in the savings and loan industry that ended only when the government intervened.

There's a simple logic behind the financial problems that arise from rising interest rates. When borrowing costs are very low, people and businesses need to take on more risk to earn money on their cash — and that typically means that they tie up their money for longer or they throw their cash behind risky ventures.

# Silicon Valley Bank  The Bank from Planet ZIRP

When the Fed raises interest rates to cool the economy and control inflation, though, money moves toward the comparative safety of government bonds and other steady investments. They suddenly pay more, and they seem like a surer bet in a world where the central bank is trying to slow the economy.

That helps to explain what is happening in the technology sector in 2023, for example. Investors have pulled back from tech company stocks, which tend to have values that are predicated on expectations for growth. Betting on prospective profits is suddenly less attractive in a higher-rate environment.

A more challenging business and financial backdrop has quickly translated into a souring job market in technology. Companies have been making high-profile layoffs, with Meta announcing a fresh round just this week.

That is more or less the way Fed rate moves are supposed to work: They diminish growth prospects and make access to financing tougher, curb business expansions, cost jobs and end up slowing demand throughout the economy. Slower demand makes for weaker inflation.

But sometimes the pain does not play out in such an orderly and predictable way, as the trouble in the banking system makes clear.

“This just teaches you that we really have these blind spots,” said Jeremy Stein, a former Fed governor who is now at Harvard University. “You put more pressure on the pipes, and something is going to crack — but you never know where it is going to be.”

The Fed was conscious that some banks could face trouble as rates rose meaningfully for the first time in years.

“The industry’s lack of recent experience with rising and more volatile interest rates, coupled with material levels of market uncertainty, presents challenges for all banks,” Carl White, the senior vice president of the supervision, credit and learning division at the Federal Reserve Bank of St. Louis, wrote in a research note in November. That was true “regardless of size or complexity.”

# Silicon Valley Bank  The Bank from Planet ZIRP

## 9 Silicon Valley Bank's Fall and the Way Forward for US Banking …

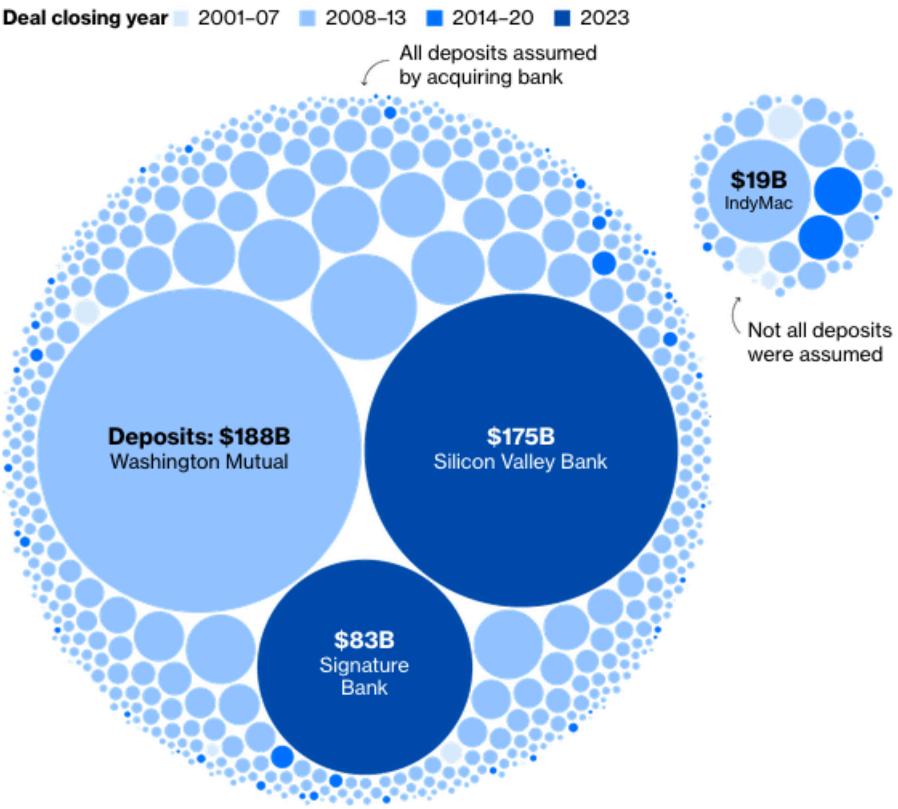
Paul J Davies and Elaine He 2nd April 2023 Bloomberg

Silicon Valley Bank suffered probably the quickest bank run in history and the fastest bailout of depositors, too. The lender to the venture capital industry had operated under lighter rules and fewer restrictions than larger banks after a successful lobbying effort back in 2018. Until a few weeks ago, it was judged too small to cause any real damage if it hit problems, but the moment it got into trouble, everyone realized it was systemic after all.

In fact, the scale of SVB's deposits rescued wasn't much smaller than Washington Mutual, which failed during the 2008 meltdown and was taken over by JPMorgan Chase & Co. Depositor bailouts aren't as rare as you might think. In the past 22 years, depositors at failing banks have been helped more often than they have been hurt in bank failures. Typically, a mix of public backstops and white-knight acquirers assume these obligations.

**What Happened to Deposits After Banks Failed?**

For the more than 560 banks that have failed since 2001, 93% of deposits ($728 billion) were completely assumed by the failed banks' acquirers




Source: FDIC
Note: Deposit amounts are approximates.

# Silicon Valley Bank  The Bank from Planet ZIRP

Why did SVB fail? The basic story is that it grew very fast, nearly trebling deposits in just three years, and its managers took too much risk by plowing most of its spare cash into long-term, mainly government-backed, bonds. Then when the Federal Reserve rapidly raised interest rates, the value of these bonds dropped, leaving SVB in need of extra capital.

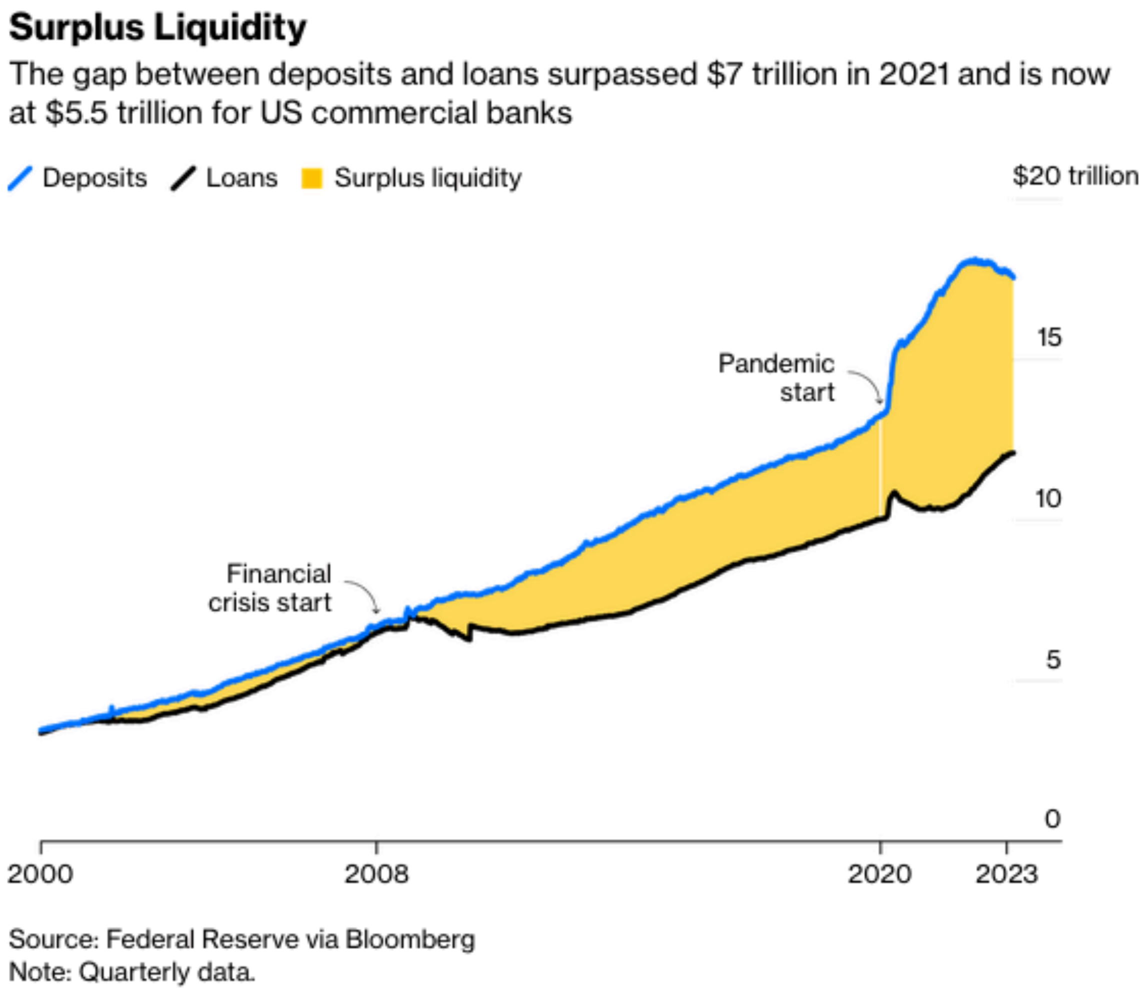
SVB's deposits ballooned at a time when investors were throwing money at startups, betting on high returns from future growth while returns on many other assets were suppressed by ultra-low interest rates. Its depositors were similar companies prone to act in similar ways, which would prove part of its downfall. But strong deposit growth and excess cash have been the trend among banks for years. Bank balance sheets have become a lot more liquid and most banks have put a lot more depositor funds into Treasuries and other bonds, just like SVB.

A simple way to track this trend is the difference between total deposits and total loans in the US banking system. After the financial crisis of 2008, regulators globally decided that banks needed to be less reliant on funding from financial markets — borrowing from other banks and funds in the form of interbank loans, commercial paper and shot-term bonds. The flightiness of such funding had been a big part of the story of the last crisis. Banks were told they needed more deposit-based funding compared with their hard-to-sell assets, like loans.

The shaded area below shows the growth in excess liquidity on bank balance sheets since 2008. Then, when the Covid-19 pandemic erupted in 2020, the Fed and government combined to unleash a huge infusion of cash into the economy.

# Silicon Valley Bank  The Bank from Planet ZIRP

Surplus Liquidity The gap between deposits and loans surpassed $7 trillion in 2021 and is now at $5.5 trillion for US commercial banks

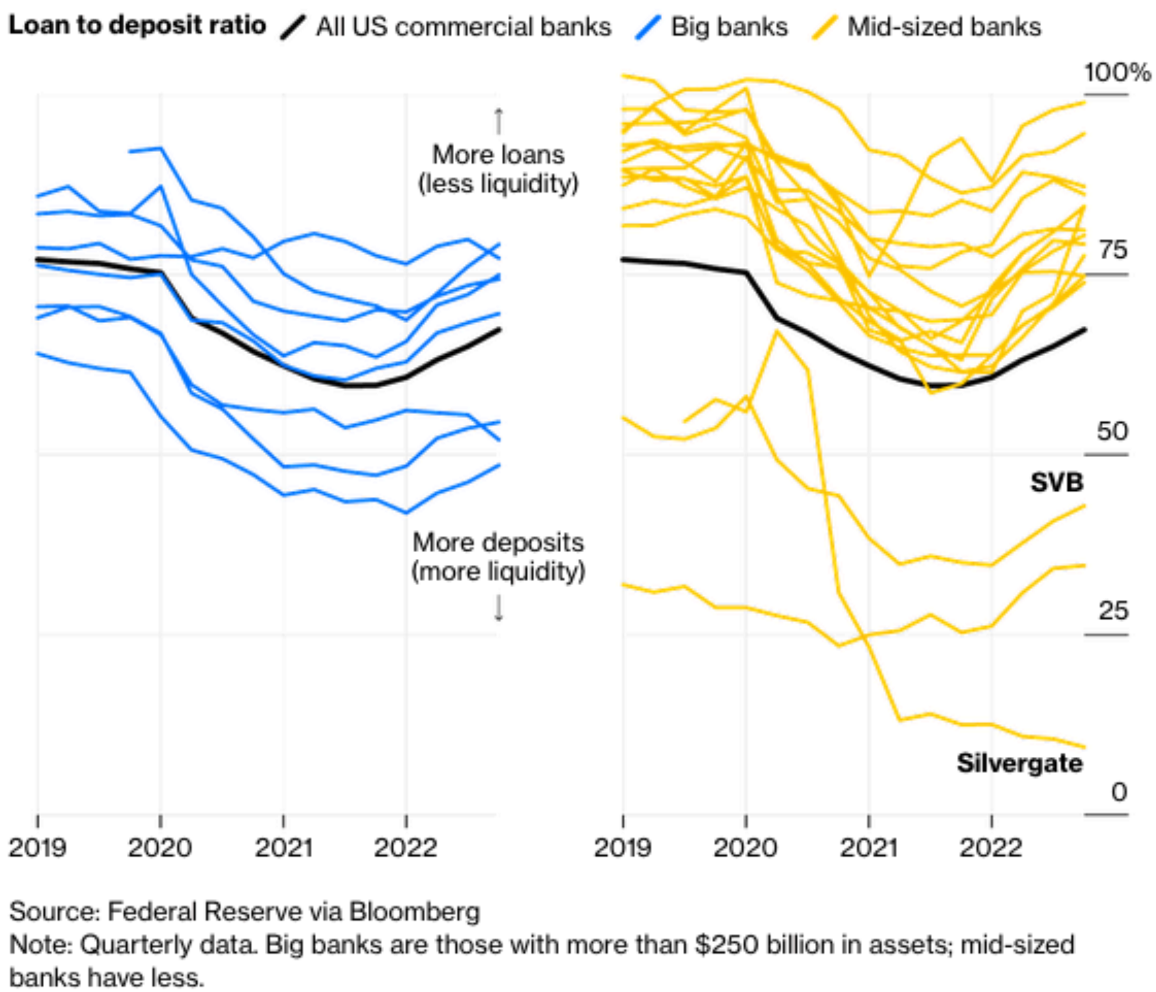



The main gauge for investors looking at individual banks is a ratio of loans to deposits. Normally expressed as a percentage, it describes how many dollars of loans a bank has made for each dollar of deposits. The current level for all US banks taken together is 69% - or 69 cents of loans for each dollar of deposits.

Large banks have to meet stricter regulations on the stability of their funding and the sources of liquidity available on their balance sheets to repay depositors, so they tend to have lower loan-to-deposit ratios than smaller banks.

# Silicon Valley Bank  The Bank from Planet ZIRP

Loans as a Percentage of Deposits.  In recent years, mid-sized banks tended to have less liquidity compared with large banks, and all banks as a whole, with a few exceptions




Source: Federal Reserve via Bloomberg

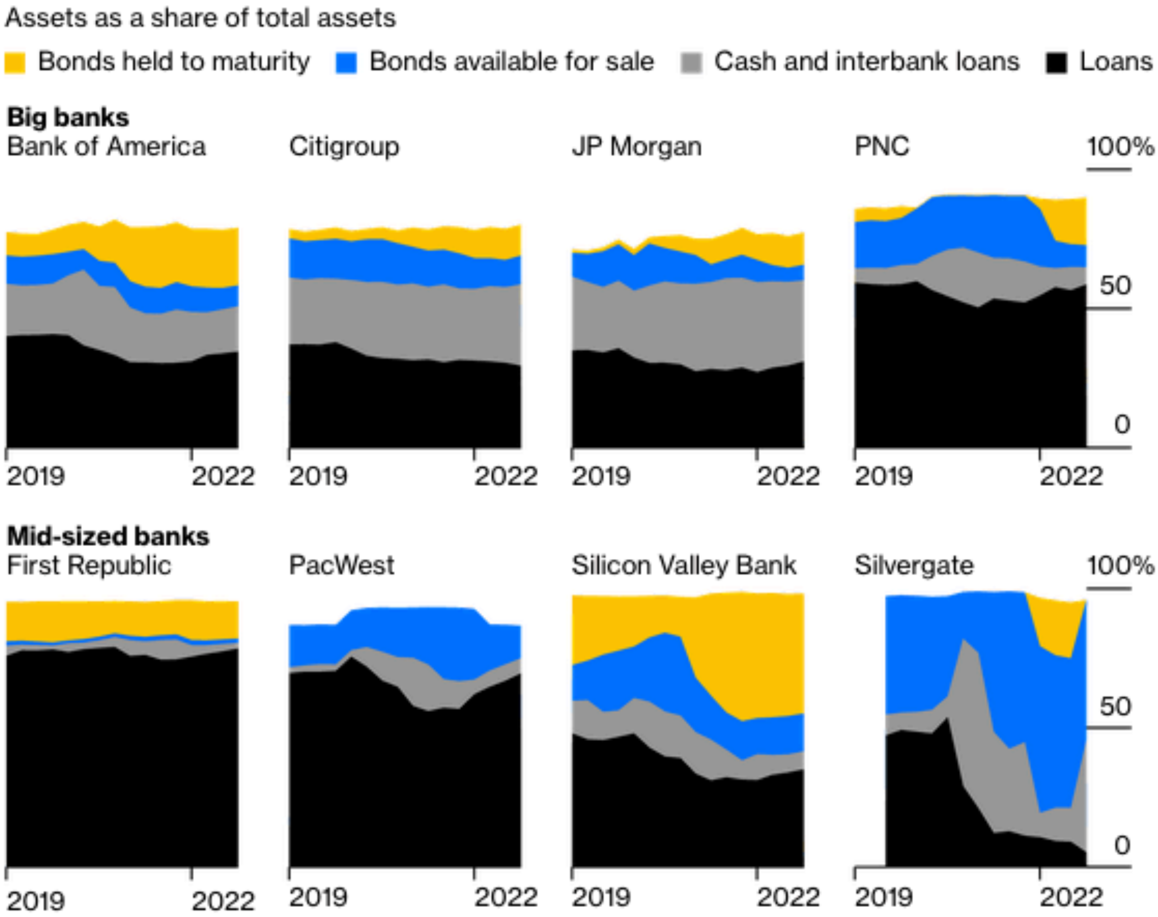
Note: Quarterly data. Big banks are those with more than $250 billion in assets; mid-sized banks have less.

All banks saw deposit growth outpace lending growth during the pandemic and the reopening afterwards. People and companies built up savings and paid down debt during lockdowns and then slowly spent excess cash as economic activity began again. But SVB and Silvergate really stand out, they had even more spare cash to manage than peers, so what did they do with it and was it much different to others?

# Silicon Valley Bank The Bank from Planet ZIRP

Where Did the Money Go?

Assets held by mid-sized banks that have been under pressure compared with selected big banks




Source: Bloomberg
Note: Quarterly data. Big banks are those with more than $250 billion in assets; mid-sized banks have less.

Source: Bloomberg

Note: Quarterly data. Big banks are those with more than $250 billion in assets; mid-sized banks have less.

Banks make a choice of how to invest their spare funds. Cash is instantly accessible but typically produces the lowest interest income. Bonds offer a higher return but their values will change with interest rates.

Look at Bank of America Corp. and JPMorgan above. The latter put much more in cash, making it easily available and easy to redeploy. The former put more into securities for a higher interest income earlier, which risked sacrificing the opportunity to invest in higher yielding bonds when rates rose. Bank of America also put more money into bonds that it would hold to maturity: It did this because when rates rose accounting rules for hold-to-maturity (HTM) bonds mean it didn't have to recognize market value losses in its results. Available-for-sale (AFS) bonds can be sold more easily if a bank wants to invest in higher earning assets instead, but any change in their value has to be reported in results straight away.

For big banks, these decisions are mainly choices between current and future earnings. For SVB and Silvergate, the same choices turned out to be existential.

SVB had 57% of its assets in bonds and other securities at the end of 2022, all of which suffered market-value losses as rates rose. These bonds were extremely unlikely to default, so the valuation changes wouldn't matter unless the bank had to sell them and realize the losses. SVB kept most of its bonds as HTM, to a far greater extent than other banks.

Long-term and Short-term Bonds

Silicon Valley Bank and Silvergate were outliers in the types of assets they held as a percentage of their total assets.

This became SVB's biggest headache. Although it didn't have to recognize value losses on its HTM bonds, investors could see how big those losses were and how badly SVB would be hurt if it had to sell them.

At the same time, SVB's deposits stopped growing and started to contract and the bank decided sell a lot of its existing AFS bonds and buy securities with higher yields and shorter maturities. That would free up cash more regularly to reinvest or to make up for shrinking deposits. However, the bonds it sold forced it to crystalize $1.8 billion of market value losses. For its shareholders and some of its clients, this made its huge HTM portfolio more troubling, too.

The rules of accounting say that if you have to sell any HTM bonds, you have to mark all of them to market value. And if SVB was worried enough about deposits to realize such a big loss on its AFS bonds, then maybe it wouldn't be so long until it had to start selling HTM bonds too. That could mean start a process of realizing more losses than the bank had in capital. The run of the bank began after some venture capital fund managers got worried about this. SVB has since been partly taken over by First Citizens and partly by the Federal Deposit Insurance Corp.

All the other small banks with large bonds portfolios have a stronger bias towards AFS holdings, which means they report their market value in their quarterly results. Unlike big banks, however, they don't have to deduct valuation losses from equity, which means they can appear healthier than they are. If stricter rules had been maintained for smaller banks, that would have reduced the chances of bond valuations turning into a nasty surprise. But at the same time, SVB was far out of line with how most banks behave – big or small.

Methodology: We examined banks in the KBW Bank Index, excluding Bank of Mellon New York and State Street because they are custodial banks and Capital One because it is mainly a credit card company. We also evaluated some banks not in the index, including First Citizens, PacWest, Signature Bank, Silicon Valley Bank, Silvergate and UBS.

## 10 SVB’s Collapse Exposes the Fed’s Massive Failure To See The Bank’s Warning Signs

Aaron Klein Brookings Institute A version of this op-ed was originally published by MarketWatch on March 15, 2023.

The failure of Silicon Valley Bank (SVB) is a failure of supervision as well as regulation. The two terms are used interchangeably but are different concepts: Regulation is about creating rules, supervision enforcing them. Initial reactions to SVB’s failure focused on debating whether the Trump era deregulation caused the failure, ignoring the fundamental question of whether the rules that existed were being properly enforced. The answer is that they weren’t and that the Federal Reserve failed as a bank supervisor.

The Fed supervised SVB from head to toe, with the San Francisco Federal Reserve Bank in charge of both the bank and its larger parent holding company. SVB was the largest bank the SF Fed supervised. SVB’s CEO even sat on the SF Fed’s Board of Directors up until the day the bank failed. I count at least four classic red flags of the bank’s conduct that should have sent the alarm bells ringing, which the Fed appears to have slept through.

1 Explosive asset growth. SVB nearly quadrupled in assets in four years.

2 Hyper reliance on uninsured deposits. Almost all (97%) of the deposits at the bank were from customers with more than the FDIC’s limit ($250,000), often tech firms. Uninsured depositors are more likely to run, making the bank inherently less stable.

3 Rate risk Huge interest rate risk. During the 2019-2021 period of explosive growth, SVB bought over $100 billion of mortgage backed securities issued at low interest rates. They failed to buy hedges to protect their value if interest rates rose.

4 Dash For Cash to FHLB

Dash for cash to the Federal Home Loan Bank. As SVB needed cash they used the arcane Federal Home Loan Bank system to borrow heavily becoming the SF FHLB’s top borrower with $20 billion. The FHLB is called the lender of next to last resort, and when a bank fails the FHLB is the only entity that gets paid out ahead of the FDIC. Thus, the more in debt a bank is to the FHLB, the greater the losses born by the taxpayer if the bank fails.

Each of these red flags should have triggered greater scrutiny from the Federal Reserve. Combined, they become a red laser beam screaming for greater scrutiny. After all, SVB is not a Main Street bank and never was. Regional banks of its size ($200B) have around 1,000 branches: SVB had 16.  This does not even include more potential red flags about the relationship between SVB's venture capital arm and the bank's customer base, a potential red flag the Fed's regulation of the bank holding company should have analyzed.

The Fed has already launched an inquiry into its own failure, but that is likely to be insufficient. Past Fed self investigations of failures of its regional banks failed to discover leaked information by the Richmond Bank president (the FBI found it and he resigned in disgrace) and failed to publicly disclose dates of unethical trading by both the Dallas and Boston Bank presidents.

The Fed is ultimately accountable to Congress. Congress needs to investigate what happened with its own investigation. Simply asking the Fed Regional Banks to fix themselves will likely be insufficient. A law requiring the Fed to integrate their boards passed in the 1970s was widely ignored; the Kansas City Federal Reserve Bank did not integrate its all white Board until 1992.

Improving Fed governance is important but insufficient. Bank regulators guard their supervisory reports from the public, so we never know what conditions the banks are in or whether the regulators are doing a good job. Bank regulators should make these reports known as CAMELS public so that we can all judge both how the banks are doing and how well the agencies are supervising them. Learning what grade the SF Fed gave SVB would go a long way to understanding how badly they mis-supervised the bank.

Congress writes financial regulation with two possible outcomes: setting specific rules in law or empowering regulators to figure out the details. In both cases Congress relies on regulators to enforce the rules. Congress cannot legislate judgement or competence. Our current financial regulatory system places substantial confidence in the judgement and competence of bank regulators, particularly the most powerful: the Federal Reserve. In the case of Silicon Valley Bank that was misplaced.

The Fed has continually been tasked with more responsibility as monetary policy setter, bank regulator, lender of last resort, payment system operator and regulator, producer of economic research and statistics, and more. Perhaps it is time to fundamentally re-think the role of the central bank. An oft forgotten fact is that Senator Dodd's original proposal, in the law that became Dodd-Frank, envisioned moving regulation of banks like SVB out of the Fed. That idea was voted down 91-9 and the law ultimately expanded the Fed's authority and power over the nation's banking system. In the case of Silicon Valley Bank, that has been a failure.

## 1 Interest Rate Risk

Interest rate risk is the potential for investment losses that can be triggered by a move upward in the prevailing rates for new debt instruments. If interest rates rise, for instance, the value of a bond or other fixed-income investment in the secondary market will decline. The change in a bond's price given a change in interest rates is known as its duration.

## 2 EVE The Economic Value of Equity

The behaviour of customers depositing money is a key variable that banks use in developing risk models. The economic value of equity (EVE), closely tracked by banks and their examiners, estimates future cash flows and how sensitive they are to changes in interest rates.

The economic value of equity (EVE) is a long-term economic measure/ indicator of net cash flow. The EVE is calculated by taking into account the present value of all asset cash flows and subtracting the present value of all liability cash flows. In other words, it is the net present value (NPV) of a bank or a financial institution.

$\Delta$ Economic Value = $\Delta$ Present Value of Assets – $\Delta$ Present Value of Liabilities

## 3 VaR Model Value At Risk

Value at risk (VaR) is a measure of the risk of loss for investments. It estimates how much a set of investments might lose (with a given probability), given normal market conditions, in a set time period or over a specific time frame.

## 4 IRS Interest Rate Sensitivity

Interest rate sensitivity is how much a fixed-income asset price moves with changes in interest rates. Interest rates and fixed-income asset prices are inversely correlated. The longer the maturity of the asset, the more sensitive the asset to changes in interest rates.

## 5 DIRS Interest Rate Sensitivity

Deposit Interest rate sensitivity is how much deposit levels within the bank are likely to move with changes in interest rates.

## 6 Interest Rate Movements So What Happened To Rates

In December 2021 the Fed Funds Effective Rate was 0.08%. By December 2022, the Fed Funds Effective Rate had risen to 4.1%. Rates were expected to continue to rise. Guidance from the Federal Reserve Board in December projected the appropriate policy path would be for rates to rise to 5.1% in 2023 easing to 4.1% in 2024 and 3.1% in 2025. The long run rate thereafter was assumed to be 2.5%.

By March 2023, the Fed Funds rate had risen to 4.7%. Guidance from the Federal Reserve Board projected the appropriate policy path would be for rates to rise further to 5.1% in 2023 easing to 4.3% in 2024 and 3.1% in 2025. The long run rate thereafter was assumed to be 2.5%.

The yield on ten year Treasury Securities had moved from 1.5% in December 2021 to 3.6% by December 2022. Long dated thirty year Treasuries had moved from 1.9% to 3.7%, peaking at 4.0% in October and November.

Short dated cash could find a home with six months T bills offering 4.6% by the end of 2022.

## 7 The Balance Sheet Impact

So what was the impact of the change in interest rates on the Silicon Valley Bank Balance Sheet? Liabilities and Deposits December 2022

### 7.1 Deposits

Deposit fell by $16 billion dollars from $189 billion to $173 billion as a result of drawdowns and interest rate switch. Non interest bearing deposits fell by $45 billion, from $123 billion to $81 billion. Interest bearing deposits surged to $92 billion from $63 billion. The outflow of deposits were largely funded by an increase in short term borrowings of some $14 billion. Total liabilities were unchanged.

## 7.2 Assets

Assets within the bank were also unchanged at around $211 billion.  Cash and near cash assets for sale (AFS) were down slightly to $40 billion. Securities held to maturity (HTM) were down by $91 billion from $98 billion in 2021.

In 2019 the value of assets held to maturity was just $17 billion. The balance sheet had been ramped since then with $80 billion of mortgage backed securities (MBS, CMOs, and CMBS).

## 7.3 Value At Risk

Assets for Sale were marked to market. The impairment in the year was $2.5 billion. The balance sheet recorded a fair value $26 billion from a cost of block of $28.6 billion.

Assets Held to Maturity were marked at cost. The balance sheet note recorded an impairment of $15 billion if assets were marked to market or be subject to a forced sale prior to maturity. The balance sheet $91 billion overstated the estimated fair value of $76 billion. [Note The total equity in December 2022 was $16 billion.]

The rate hikes had resulted in a near 10% fall in assets held to market and a 17% fall in assets held to maturity.

In this Silicon Valley Bank was not alone. Many banks are carrying big portfolios of long-term bonds  worth a lot less than their original value. Based on Federal Deposit Insurance Corp. Data U.S. banks were sitting on $620 billion in unrealized losses from securities that had dropped in price by the end of 2022, with many regional banks facing big hits.

## 7.4 Net Interest Margins

Net interest margins (after provisions for credit losses), actually increased from $3 billion in 2021 to $4 billion in 2022. Total interest income on loans and investment securities increased to $5.7 billion. Total interest expenses increased to $1.2 billion from just $0.1 billion the year before.

## 7.5 The worst is over or is it ?

“I am convinced we are past the worst” Herbert Hoover May1930

Executives could be convinced the worst was over for the interest rate cycle and the escape from Planet ZIRP. Our simple deposit model suggests the net fall in deposits would continue at the rate of $20 billion in 2023 and $20 billion in 2024 before easing to $10 billion in the following year.

Assets for sale could be subject to a further $600 million impairment. Assets held to maturity would be subject to an additional $3.5 billion write down, with the prospect of some write back in 2024 and 2025 if the Fed projections were correct.

The impact on net margins would result in a fall of net interest income to $2.7 billion in 2023, falling to $2.0 billion in 2024 and $1.4 billion in 2025 largely as a result of an increase in total interest expenses.

The problem for the Bank was that in the absence of further borrowing or a substantial capital injection, the depositor withdrawals could only be met by asset sales “Held To Maturity”.

The book losses would seriously impact, if not extinguish, the Total Common Equity of the Bank.

## 12 Focus on Deposits

SVB deposits had increased from $49 billion dollars in 2018, to $189 billion dollars by the end of 2021. "Hot money" of course, two thirds of the deposits were non interest bearing demand deposits. Over 90% were above $250,000 and not insured under FDIC rules.

According to S&P Global, at the end of 2022, 93.8 percent of SVB's deposits were above Federal Deposit Insurance Corp. Limits, the highest proportion among large U.S. banks,

Deposits increased from $49 billion to $62 billion by the end of 2019, as the Fed eased base rates to 1.75% from 2.00% in the year. In the following year, the Fed dropped rates to 0.1%. Deposits soared to $102 billion in 2020 and $189 billion at the end of 2021.

SVB's rapid growth created several stresses. The bank had to invest "loads of money" at a time of rock-bottom interest rates. To maximise returns, the company purchased longer-term mortgage and government-backed securities paying higher interest.

But time was up for interest rates at the zero bound. The flight from Plant ZIRP was brought onto the runway. In 2022 the Fed began to hike rates aggressively. Rates moved from 0.1% to 4% by the end of 2022.

In that year,  SVB deposits fell by $16 billion as investors were lured away by the prospect of higher yields. It was a harbinger of problems to follow for the bank in 2023.

In December 2022 The Federal Reserve Board forecast assumptions were for rates to average 5.1% in 2023, falling to 4.6% in 2024, 4.1% in 2024 and 3.1% in 2025. The long run rate thereafter would be for rates to average 2.5%.

Our basic log model would suggest SVB deposits would fall by a further $40 billion over the next two years and $10 billion in 2025 before stabilising at around the $120 billion level. The balance sheet impairment would provide further write downs of around $4 billion before some write back was possible. Total Equity would take a further big hit.

Depositors would not wait. By the close of business on March 9th, customers had withdrawn $42 billion dollars. A further $100 billion was up for withdrawal the following day. The Bank had run out of cash and options.

**“In the case of Silicon Valley Bank, it was not the worst capitalised bank in the country, nor was it the bank with the most unrecognised losses”.**

# Silicon Valley Bank  The Bank from Planet ZIRP
## 14 Snippets

“In the case of Silicon Valley Bank, it was not the worst capitalised bank in the country, nor was it the bank with the most unrecognized losses. What set it apart, researchers concluded, was a “disproportional share of uninsured funding.”

According to S&P Global, entities had $151.6 billion in uninsured deposits at Silicon Valley Bank, or 93.9 percent of the company’s total holdings. Many Silicon Valley Bank clients were technology firms with far more cash than could be insured.

SVB was relatively small—it had 40,000 customers compared to JPMorgan Chase’s 66 million. The average deposit at SVB was $4.3m, well above the $250k FDIC-insured limit.

SVB claimed to bank nearly half of all US tech and life sciences startups last year, including household names like Etsy, Roblox, and Roku.

SVB was so good at its niche that by 2022 it banked almost half of US venture-backed tech and life science firms and 44% of venture-backed tech and healthcare IPOs. The cultural cachet of having a relationship with SVB as a venture-backed startup was like sporting a New Yorker tote at Whole Foods.

The US Federal Reserve said American banks had $620.4bn in unrealised losses on their securities portfolios at the end of 2022, including $340.9 billion on bonds they did not plan to sell. Under US rules, lenders do not have to take into account mark-to-market losses in their earnings or capital ratios, so most have not hedged against that possibility.

All banks saw deposit growth outpace lending growth during the pandemic and the reopening afterwards. People and companies built up savings and paid down debt during lockdowns and then slowly spent excess cash as economic activity began again. SVB and Silvergate really stand out, they had even more spare cash to manage than peers, so what did they do with it and was it much different to others? They held a much smaller proportion of Assets for Sale was a percentage of total assets.

# Silicon Valley Bank  The Bank from Planet ZIRP
## 15 Conclusions

SVB was the 16th largest bank in the U.S. It was heavily skewed toward serving companies and individuals from the technology industry. Nearly half of U.S. venture capital-backed healthcare and technology companies were financed by SVB.

The Bank was an integral part of the Silicon Valley Start Up - VC - PE tech eco structure. the bank's chief executive, Greg Becker, sat on the Federal Reserve Bank of San Francisco's board of directors.

The Bank was vulnerable to the rapid rise in interest rates in 2022 as the Fed hiked rates from near zero to 4.5%.

The problem for SVB was not the net interest margin, margins improved over the period. The problem was not with the loan book. The provision for delinquent loans averaged under 1% over the five year period to 2022.

The problems arose from the rapid rise in deposits from $62 billion in December 2019 to $189 billion in December 2021. 95% of the deposits were above the Fed's $250,000 limit and therefore not subject to guarantee. Two thirds of the deposits were non interest bearing demand deposits.

The deposit base was vulnerable to a change in interest rates as a switch to better yielding (and more secure) assets including short T Bills became a possibility,

The Asset Disposition of the Bank was also a cause for concern. SVB expanded the loan book from $33 billion in 2019 to $74 billion by the end of 2022. Investment securities increased from $30 billion to almost $130 billion by 2021.

By 2022, just 20% of total assets were held in cash or assets for sale. 30% reflected the loan book. Assets held to maturity were almost 50% of total assets. The HTM assets were held in Mortgage Related Securities including MBS, CMOs and CMBS.

This was a significant change in investment strategy. In 2020 assets held to maturity were just 14% of total assets.

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In a period of rising rates, the HTM assets were illiquid and subject to capital depreciation. The Fed had suggested in December 2021, rates would rise to around 0.9% in 2022. The move to 4.5% was not in view.

Perhaps the executive could be forgiven for assuming the 20% liquidity ratio would suffice. By December 2022 the game was up. The underlying numbers revealed. The potential mark to market losses would extinguish Total Common Equity

The SVB 10k Annual Return was filed on the 24th February. At the beginning of March, Moody's reportedly informed SVB Financial, the bank's holding company, it was facing a potential downgrade of its credit rating because of its unrealized losses.

On March 8, 2023, SVB announced it had sold over $21 billion of investments, borrowed $15 billion, and would hold an emergency sale of its stock to raise an additional $2.25 billion. investors were reluctant. The markets were unconvinced. By the close of business on March 9th, customers had withdrawn $42 billion dollars. A further $100 billion was up for withdrawal the following day. The Bank had run out of cash and options.

SVB was placed into the FDIC receivership. The Bank of Planet ZIRP could no longer escape.

John Ashcroft April 2023

## 16 About The Author

### Dr John Ashcroft PhD, BSc(Econ) FRSA, CBIM.

John specializes in economics, strategy and financial markets. He is the author of The Saturday Economist, Friday Forward Guidance and Monday Morning Markets.

"To understand the markets, you have to understand the economics. To understand the economics, you have to understand the history”. John has been a student of economics and financial markets for over fifty years.”.

Case Studies include Silicon Valley Bank, The Apple Case Study, Yahoo, Twitter and Lego. He has written much on digital disruption and the challenge of AI.

Educated at the London School of Economics, London Business School and with a PhD in Economics from Manchester Metropolitan University, John is a fellow of the Royal Society of Arts, a companion of the British Institute of Management and a member of the Society of Professional Economists.

No stranger to the Business Community, with experience of public and private sectors, John was Chief Executive of pro-manchester, served on the Board of Marketing Manchester, the AGMA Business Leadership Council, the Council of Manchester Business School, the Board of Inward, the President's Council of Business in the Community and the President's Council of the CBI.

John was founding Chairman of the North West Business Leadership Team, a Granada Telethon Trustee and a School Governor. He was Chief Economist GM Chamber of Commerce 2013 - 2015.

A regular presenter and anchor at lunches, dinners and conferences, the combination of humour and easy style ensures he is much in demand as a guest speaker on many and varied occasions.

# Silicon Valley Bank  The Bank from Planet ZIRP
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