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SVB Failure: Causes and Results on Banking Industry

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Abstract

The paper aims to answer important questions about What is, How, and why Silicon Valley Bank (SVB) failed? Are other U.S. banks at risk? Is the SVB turmoil a repeat of the 2008 crisis? The results found that SVB was founded in 1983 as a bank specializing to enhance tech startups. It was the 16th largest U.S. bank, with around USD211 billion in assets and USD173 billion in deposits in 2022. Since 2021 SVB achieved a high accumulation of deposits. It invested heavily in long-dated T-Bonds and when the Fed raise interest rates as part of its monetary policy to fight inflation, the market values of SVB securities declined dramatically. Depositors began to rush to withdraw funds. SVB was forced to sell their T-bonds at a significant loss and failed to meet customers' withdrawals and was exposed to a bank run on March 10. SVB fail because of mismanagement of liquidity and interest rate risk, ineffective board of directors, and the Fed's unsuccessful to take forceful enough action. Although the U.S. President and the Vice Chair of the Fed System indicated that the banking system is still sound and far from repeating the 2008 crisis, Signature Bank and First Republic Bank failed. The paper recommends the regulators review the supervisory standards of banks, tech startups, and emerging markets. Moreover, obligation banks to activate the application of internal audit, bank governance, and stress testing, and issue appropriate decisions promptly. Policymakers must pay attention to how the economic sectors will respond to changes in policies applied.

Keywords: SVB failure; Signature bank; First republic bank; Liquidity risk; Interest rate risk.

1. Introduction

Bank failures can result either from unwarranted depositor withdrawals of huge funds during events characterized by panic or as the result of bank insolvency (Calomiris, 2007). The big failure that faced banks during the Great Depression- era in the 1920s was due to either lack of liquidity or less of assets quality (Natacha, 2016). When banks fail to carry out their basic functions of keeping the customers' money safe, providing credit and financial intermediation. This may lead to a loss of the bank's reputation, customers' confidence, the occurrence of a bank run, and the breakdown of the banking system. The outcome is an economic crisis to stop the flow of funds in the arteries of the economy. The 2007-2009 Global Financial Crisis was the most harmful to the banks in the world since the Great Depression (IMF, 2010). This situation prompted the Bank for International Settlements (BIS) through its Committee on Banking Supervision (BCBS, 2009) to issue a document entitled "Principles for Sound Stress Testing Practices and Supervision". The document became a basis for the early system to assess the ability of banking institutions to stun sudden shocks and crises. In early 2023, the world watched with interest once again the rapid failure of the three largest United States (U.S.) banks. Silicon Valley Bank (SVB) failed on March 10, 2023, followed by Signature Bank on March 12, and First Republic Bank failed to provide its customers services on May 1, 2023. Many questions come to mind comprises, what is SVB? How did SVB get into this failure? and why did the stress test fail to spare it from collapsing? Are other U.S. banks at risk? Is the world on the verge of a new banking crisis? What are the lessons learned? The importance of this research lies in contributing to bridging the literary gap by answering these questions. Furthermore, provides recommendations to assist regulators, policymakers, and customers.

2. Literature Review

2.1. What is Bank's Failure?

Many theoretical and practical studies dealt with the definition, concept, causes, and results of bank failure. According to the Federal Deposit Insurance Corporation (FDIC, 2014), a bank fails when it is closed by a federal or state banking regulatory agency. Commonly, a bank is closed when it is unable to meet its financial obligations to depositors, clients, and others. In the case of a bank collapse, the regulators such as FDIC in the U.S. or the central

banks in other countries assume coordination of the task of collecting/selling the assets of the insolvent bank (the failed bank) and settling its debts, including claims for deposits over the insured limit if any. In simple words, the closing of an insolvent bank by the regulator is known as a bank failure. In the same way, Bennett and Marquit (2023)) showed that banks fail when they become insolvent, which means they don't have enough funds to cover otal customer deposits and whatever money they owe to others. While the European Central Bank (ECB, 2015) believes that bank failure is usually attributed to excessive risk-taking by banks, and some studies have modeled bank risk as an outcome variable of managerial quality and/or corporate governance. Research on system failures in developing and transition countries conducted by Honohan (1997) pointed out the importance to distinguish between epidemics of the macroeconomic and microeconomic varieties. That means banks can fail due to internal factors such as poor management or external factors such as the failure of the macroeconomics itself because of the implementation of irrational macro-policy or unfavorable events such as political instability.

2.2. History of the U.S Banks' Failure

The failure of banks is not a new thing historically. In the word of Kosmetatos (2019), the British Credit Crisis of 1772 is the best real story that tells us how banks can fail and be at risk. It was made in London and quickly spread to the rest of Europe in the mid-1760s when the British Empire amassed enormous wealth through its colonial possessions and trade. The accumulation of wealth sparked an aura of excessive optimism and a period of rapid credit expansion by many British banks. But the hype ended abruptly on June 8, 1772, when Alexander Fordyce, one of the partners of the British Banking House, fled to France to escape from paying his debts. The news quickly spread leading to a banking panic in England. The depositors began to stand in front of British banks requesting full cash withdrawals.

2.2.1. The Failure of 1819

The history of U.S. bank failures begins just over 40 years after the Declaration of Independence was signed. The Napoleonic Wars of 1819 pushed the U.S. into its first banking failure crisis. The U.S. reaped the benefits by providing agricultural products to fighting countries such as England and France. When they stopped feuding, the demand for U.S. products was reduced and the economy drove into a tailspin that persisted through 1821. This caused the Second Bank of the United States (SBUS) to begin reducing the credit it made available to state-chartered banks. They became insolvent due to stopped funds. This led more banks to run. The state formally closed SBUS in 1833 and the depositors lost their funds because the FDIC had not yet been founded at that time (ADM, 2023).

2.2.2. The Failure of 1837

Government policies may be affecting the market efficiency causing supply shocks and rising prices. High inflation cause an excess demand for cash on the part of depositors, which can lead banks to scramble for reserves, which can cause bank runs and push demand for cash and liquidity highly. Weak currencies rise foreign exchange risk that leads depositors to withdraw cash to convert to other assets (Calomiris, 2007). This mechanism may have a role in some banking system crises. The financial 1837 crisis led to an economic recession in the U.S. until the mid-1840s. The financial policies of Andrew Jackson, speculative funds practices in the Western U.S., a sharp reduction in cotton prices, and a land price were considered major factors contributing to this panic where 343 out of 850 U.S. banks has been closed entirely and 62 partially failed. Many American customers lost their deposits when no official body protected them like FDIC.

2.2.3. The Failure of 1873

The U.S. banks' failure of 1873 was greatly related to rampant speculation in the railroads sector. The U.S. and Germany were suffering inflation and high-interest rates due to over-monetary expansion after the conclusion of the Civil War. The huge fires of Chicago in 1871 and Boston in 1872 had cut bank reserves causing failure. On the other hand, as a result of heavy investment in railways, Jay Cooke and Co (JC & Co) started in not studied way by issuing marketable railway bonds. On September 1873, JC & Co became insolvent and declared bankruptcy. The wave slowly moved to other banks and began to fail. Step by step the U.S. began facing its first great depression later called the "Long Depression" after the incidents of 1929 took its original name the "Great Depression". As a result, the New York Stock Exchange stopped trading for the first time in history. The funds were not insured and again bondholders and stockholders lost their capital. Kindleberger (2005), highlighted actors that contributed to the 1873 Panic crises but emphasized the reparations paid to Germany, the victor of the Franco-Prussian War. The Germans increased their domestic investment, thereby decreasing their foreign investment in the U.S. The decrease in capital inflows halted the great expansion of the Northern Pacific Railway which ultimately culminated in the bankruptcy of an important bank (JC & Co) and following by a stock exchange crash.

2.2.4. The Failure of 1907

1907 witnessed important financial events in the U.S. Non-bank firm failures spiked in New York following the onset of the banking panic and non-bank failures remained elevated for another two quarters. International gold outflows from the U.S. caused bank failures and a decline in economic activity (Kupiec and Ramirez, 2011). There were two American speculators Charles W. Morse and F. Heinze tried in 1907 to corner the stock of United Copper, but they didn't succeed and lost major funds. After this crash, depositors began rapidly withdrawing their deposits from banks associated with these two speculators. A few days later, these bank runs led the New York Clearing

House (NYCH) to announce that Morse member banks, such as the Mercantile National Bank, become insolvent. Anyhow, the NYCH provided these banks loans to meet their depositors' withdrawals, leading to stopping the runs on these banks. While the runs on the Heinze banks were stopped, the collapse spread to trust companies, and a bank run on Knickerbocker Trust occurred in October 1907. To fight these bank runs, the members of the NYCH met and formed a committee to help with the issuance of clearinghouse loan certificates. These certificates were the predecessors to the discount window loan system that is still controlled by the Federal Reserve today. The bank failure of 1907 and the procedures taken formed the intellectual foundation for the Federal Reserve Bank (The Fed).

2.2.5. The Failure of 1929

The official date of the Great Depression was started on October 29, 1929, when the American stock market crashed because of wild speculation during the twenties in the markets. Unemployment grew rapidly and stock prices continued to rise. Many financial institutions and firms were not honest with their investors regarding their financials leading to the biggest financial failure in American history. Some economists argued the reduction in the money supply associated with bank failures was the cause of the Great Depression (Friedman and Schwartz, 1963). In 1930, the U.S. began facing bank failures due to this crash resulting in a massive wave of bank runs. The first of those was Nashville. In 1931 and 1932, The U.S. financial system witnessed more bank runs. In 1933, all the U.S. banks were ordered to stop operations until they were determined solvent. Overall, the financial collapse of the stock market pushed more than 9000 banks to fail during the 1930s. The great depression events led to the establishment of the FDIC on June 16, 1933. The FDIC guaranteed that depositors would not lose their deposits in member banks in the event of a bank failure, up to a certain limit. Thomas (1935), explained that to avoid failure, banks should be solvent and hold a sufficient quantity of liquid assets to meet the demand for cash by depositors, and probable for a bank to be at risk and fail with ultimately sound but non-liquid assets.

2.2.6. The Failure of 1980s-1990s

This failure is called the Savings and Loan (S&L) crisis. It was begun in the 1980s and extended through the early parts of the 90s. Like the past American crisis, the S&L also appeared again through speculation and regulations that didn't match market conditions. The U.S. had just weathered the stagflation of the Oil Price Crisis of the 1970s which caused high interest rates. In 1982, S&Ls were losing USD4 billion per year after reaching profited highly in 1980 and failures continued until the early 90s. But this time the American was lucky because the FDIC protected them from losing their insured funds due to bank failure. Robert and Clarke (1988), evaluated the reasons contributing to the failure of National Banks including specific factors and patterns of practices within a bank itself that finally determined its success or failure, although economic events in the market served by that bank often played a significant role. It is useful to point out that speculative capital inflows (hot money) from developed countries were behind The Asian Economic Crisis that broke out in Thailand in 1997 and quickly turned to the rest of East Asia then known as the "Asian Tigers". With the excessive increase in credit and a lot of debt that accumulated in these economies, the Thai government was forced to abandon the fixed exchange rate of its "baht" against the U.S. dollar after maintaining it for a long time, citing a lack of foreign reserves. This led to a wave of panic in the Asian financial markets and soon led to a large-scale flight of billions of dollars in foreign investment out of these countries. The panic spread in the markets and investors became increasingly concerned about the possible bankruptcy of East Asian governments. The global financial meltdown began to spread. Then it took years for things to return to normal (IMF, 1999).

2.2.7. The Failure of 2007-2009

Since 2007, the U.S. financial system has experienced economic contraction and became a full-global financial crisis (GFC) in March 2008 when two investment banks became insolvent where Bear Stearns and Lehman Brothers failed (IMF, 2010). The implementation of fragile and permissive monetary and fiscal policies in providing credit to the real estate sector in advanced economies led to the bursting of the housing bubble (rampant speculation in the housing markets) causing Lehman Brothers to collapse (BCBS, 2009). It was one of the largest investment banks in the world. The turmoil moved rapidly to many financial institutions and forced the U.S. government to intervene to recover. From 2008 through 2015, more than 500 banks failed as a result of the GFC, but due to the protection extended by the FDIC, insured deposits were safe once again. For comparison, in the 7 years before 2008, only 25 banks failed. Because of the protection afforded by the FDIC, the only bank runs were on "shadow banks" that do not have government protection.

2.2.8. The Failure of 2019-2020

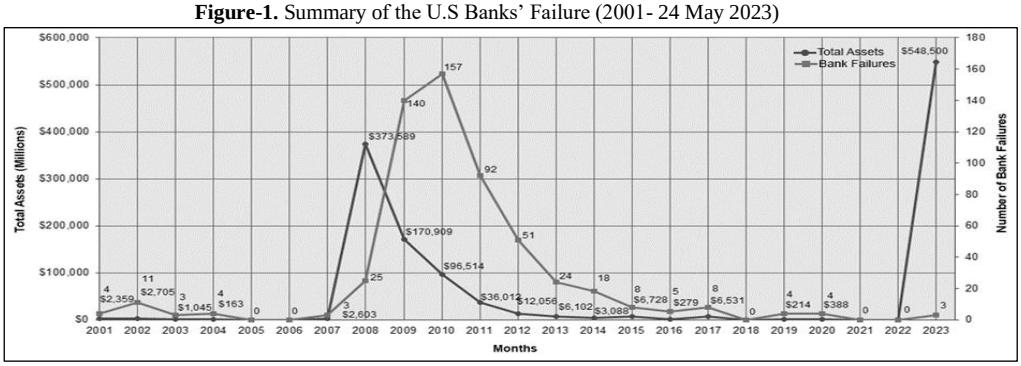
The 2019 (COVID-19) pandemic was very stressful for people and the global economy. The application of prudential policies by the regulators helped to stave off the expected bank failures in the time of economic contraction. Therefore, only 8 banks failed in 2019 and 2020 and no bank failed in 2021 and 2022.

2.2.9. The Failure of 2023

After the COVID-19 pandemic, the U.S. economy has experienced a rise in inflation rates, the highest since the early 1980s. The Fed implemented several interest rate hikes in rapid succession to restrict inflation. Some banks invested heavily in Treasury (T-bills) bonds and when interest rose, the market values of securities fell. Figure 1 show that there were only 3 banks that collapsed from the first January to May 25, 2023, and 564 bank failures from

2001 to May 24, 2023. The assets of the failed banks in 2023 of USD548500 million compared to USD2359 million in 2001.

Figure-1. Summary of the U.S Banks' Failure (2001- 24 May 2023)



Source: FDIC (2023a).

2.3. SVB Turmoil

Since the bankruptcy of SVB on March 10, 2023, several recent reports and academic studies tried to analyze the reasons that led to its failure. Another research body attempted to predict the expected effects on the U.S. banking system and financial markets. Moreover, exploring the basic lessons learned from the SVB experience. In its statement to Chairman Brown of the U.S. Senate Committee on Banking, Housing, and Urban Affairs, Barr (2023) said that "SVB failed because the bank's management did not effectively manage its interest rate and liquidity risk, and the bank then suffered a devastating and unexpected run by its uninsured depositors in a period of fewer than 24 hours. SVB's failure demands a thorough review of what happened, including the Federal Reserve's oversight of the bank. I am committed to ensuring that the Fed fully accounts for any supervisory or regulatory failings and that we fully address what went wrong". The statement contains an implicit indication that the SVB fail due to mistakes between the regulators and the bank's management.

After Greg Becker CEO of SVB on March 9, 2023, says that to their investors and depositors 'Stay calm because that's what is important…the last thing we need you to do is panic', the research body of Global Investment Management (2023) presented 8 questions that involve why did these banks collapse? How important are these banks? What did regulators do? Is this a re-run of the GFC? How did markets react? Will the economic activity be damaged? What does it mean for the Fed policy? What should depositors do? And the answer to the last question is that their fate is in the hands of the FDIC. Hinh and Dinh (2023) briefed on four factors leading to the SVB crisis: I) The Fed pushes up the interest rate sharply, which negatively affected SVB's cash flow and balance sheet; II) The administration of SVB failed to manage interest risk and maturity mismatches; III) The regulatory and supervisory agencies failed to discover timely the risks and fix them; and IV) The revised regulations of Dodd-Frank 2018 failed to subject mid-size banks such as SVB to the same rigorous requirements that big banks have to meet, such as stress testing. In the same way, ICSI (2023) identified four interactive factors that generated the failure of SVB including the raising of interest rates by the Fed, a cash crunch for some Bank clients, the selling of bond portfolios at a loss, and a loss in stock sales. Suarez (2023), pointed out that the SVB's experience in financing emerging tech companies is considered the best indicator for high-risk emerging markets.

CED (2023), stated that "since shareholders and certain unsecured debt holders will not be protected, regulator-mandated stress testing is paramount, but internal controls are critical". Additionally, regulators must continue monitoring the financial system by taking action when necessary and providing any extra liquidity that is needed in the market.

Stein and Romm (2023), highlighted that SVB has huge deposits (of more than $250000/ client) outside the umbrella of the FDIC. This point poses a constant threat to the sustainability of the banking system. It puts regulators faced growing pressure to bail out even the bank's biggest customers, igniting a political debate over Federal Revere's role in protecting the U.S. financial system from any future threat. Additionally, CRS (2023) discussed the sudden failure of the two largest banks in the U.S. (SVB and Signature Bank) and the policy implications issues raised by their failure.

Belabes (2023), reported that no clear evidence that the destruction of SVB affects the Islamic banking systems because they do not interact with global financial markets since the interest rate is forbidden.

From a review of the theoretical and empirical literature, it is clear that a bank fails when it becomes unable to meet depositors' requests for cash withdrawals. This happens either for internal reasons related to the bank's management approach to the alignment between liquidity and profitability, or for external factors that may be due to the overall economic performance and perhaps to the procedures and policies implemented by the regulators. Internal and external factors may coincide together. This is the worst situation that banks may face and usually leads to chain crises, as a result of which the banking systems collapse.

3. Methodology and Data

The paper explores the primary answer to important questions regarding SVB events. These questions include what is SVB? Why and how does it fail rapidly? Why does stress testing fail to spare it from collapsing? Are other U.S. banks at risk? Is the world on the edge of a new banking crisis? What are the lessons learned? The methodology

is based on a review of recent literature on the SVB's events. In addition to the descriptive analytical approach based on the analysis of quantitative data for the balance sheet indicators of the SVB for the year2020,2021 and 2022. Furthermore, linking it to the Federal Reserve's decision to raise interest rates to fight inflation. The SVB and Federal Reserve's data were obtained from the official websites.

4. Results and Discussion

4.1.Background on SVB

The Silicon Valley Bank (SVB) was created as Silicon Valley Bancshares on April 23, 1982, by Bill Bigger's staff and Robert Medearis. SVB was incorporated as a wholly-owned subsidiary on October 17, 1983. In 1988, the company went public via an initial public offering (IPO), raising USD 6 million. It a subsidiary of SVB Financial Group was the 16th biggest bank in the U.S. The bank had assets of about USD211,7 billion in December 2022. SVB provided banking services for emerging tech companies, but it was mainly well-known for serving startups and venture-backed firms. As announced by the SVB's website, 44% of the venture-backed technology and healthcare IPOs in 2022 were customers of SVB. After the Santa Clara, California-based lender suffered from an old-fashioned bank run. SVB collapsed on March 10, 2023, which serviced the tech industry for three decades. On March 27, 2023, First Citizens Bank acquired SVB and is renamed SVB A Division of First Citizens Bank (ICSI, 2023).

Table-1. SVB Evolution (1983 - March 27, 2023)

Year	Description
1983	Established and opened its door for business, processing payments, funding loans, and serving clients, venture capital, and tech companies.
1988	Nasdaq IPO: SIVB
1996	Began US Expansion to 15 states.
2008	Opened Israel office.
2011	Appointed Greg Becker as CEO.
2012	Launched a UK branch & Opened a joint venture bank in China.
2016	Opened the Ireland office.
2018	Opened Germany office.
2019	Acquired healthcare investment bank Leerink Partners and opened a Global Delivery Center in India, a Canada office, and a Denmark office.
2020	Acquired West River Group's Debt Investment Business and celebrated the 10th annual Tech Gives Back week of community service
2021	Acquired Boston Private, a leading provider of wealth management, trust, and banking services. Announced $11.2 billion, five-year Community Benefits Plan. Launched Nasdaq Private Market with Nasdaq, Citi, Goldman Sachs, and Morgan Stanley. Launched technology investment banking practice and acquired equity research firm, Moffett Nathanson.
2022	Welcomed Kay Matthews as Chair of SVB Board of Directors and Announced commitment to provide $5 billion in sustainable finance and set a goal to achieve carbon-neutral operations by 2025
March 10, 2023	Exposed to a bank run and left the largest bank failure in U.S. history. The California Department of Financial Protection and Innovation closed SVB. The state agency appointed the FDIC as a receiver.
March 17, 2023	SVB Financial Group, the holding company that operates SVB Capital, filed a voluntary petition for a court-supervised reorganization under Chapter 11. The SVB Capital funds and their general partner entities are not included in SVB Financial Group's Chapter 11 proceeding. SVB Capital is operating in the ordinary course.
March 27, 2023	Aftermath: First Citizens Bank acquired SVB and is renamed now as SVB A Division of First Citizens Bank.

Source: SVB, 2023

Table 1. shows that since SVB opened in 1983 continued for forty years as a pioneer leader bank in providing banking services to startups and emerging tech markets. Perhaps the most important point indicated by the SVB experience is that financial failure is not only related to small banks, the major can collapse. As occurred on March 10, 2023, when SVB declared bankruptcy in just 48 hours and its turmoil led to the collapse of Signature Bank and First Republic Bank.

4.2. Insight of SVB Balance Sheet and Federal Reserve Rate

As investigators do, when events occur, they search for evidence and clues that led to the incident. The literature indicates that SVB collapsed for two main reasons. The first is internal, related to ineffective management of interest rate risk and miscalculation of liquidity and profitability requirements. The second factor is external, represented in the Fed's policy of raising interest rates to counter inflation. Raising interest rates harmed SVB's long-term bond portfolio (securities or T-bills). As SVB liquidated T-bills to meet the high demand for liquidity, its market value decreased and caused losses.

4.2.1. SVB Balance Sheet

Table-2. SVB Balance Sheet: Fiscal Year End Date: 31/12 of (2020,2021, and2022) Value in USD Million

Item	**31/12/2022**		**31/12/2021**		**31/12/2020**	
ASSETS	**Value**	**% of Assets**	**Value**	**% of Assets**	**Value**	**% of Assets**
Cash & Cash Equivalents	13803	6.5	14586	6.9	17675	15.3
Securities And Investments	120054	56.7	127959	60.6	49307	42.7
Loans Gross	74250	35.1	66276	31.4	45181	39.1
Allowance For Loan Losses	-636	-0.3	-422	-0.2	-448	-0.4
PPE Net	394	0.18	270	0.1	176	0.15
Intangibles	511	0.24	535	0.3	204	0.17
Other Assets	3417	1.6	2104	0.9	3416	2.9
Total Assets	**211793**	**100%**	**211308**	**100%**	**115,511**	**100%**
LIABILITIES	Value	% of liabilities and equity	Value	% of liabilities and equity	Value	% of liabilities and equity
Total Deposits	173109	81.7	189203	89.6	101982	88.3
Short Term Debt	13565	6.4	71	0.03	21	0.02
Long Term Debt	5370	2.5	2570	1.21	844	0.73
Other Liabilities	3454	1.6	2855	1.22	4231	3.66
Total liabilities	**195498**	**92.3**	**194699**	**92.1**	**107078**	**92.7**
Shares Outstanding, K	59.2	0.3	58.8	0.02	51.9	0.044
Preferred Shares	3646	1.6	3646	1.72	340	0.29
Common Shares	0	0	0	0	0	0
Additional Paid Capital	5318	2.4	5157	2.44	1585	1.37
Retained Earnings	8951	4.2	7442	3.52	5672	4.9
Other Shareholders' Equity	-1620	-0.8	364	0.17	836	0.72
Total Shareholders' Equity	**16295**	**7.7**	**16609**	**7.89**	**8433**	**7.30**
Total Liabilities & Equity	**211793**	**100%**	**211308**	**100%**	**115511**	**100%**

Source: Barchart (2023)

Figure-2. SVB Balance Sheet: Assets VR Liabilities %

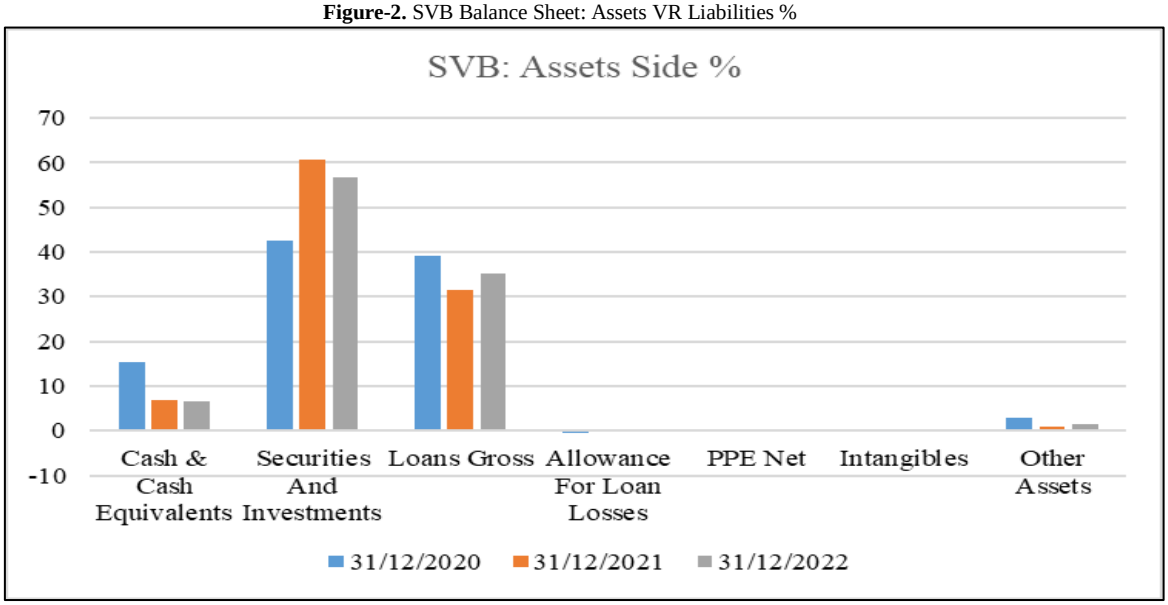
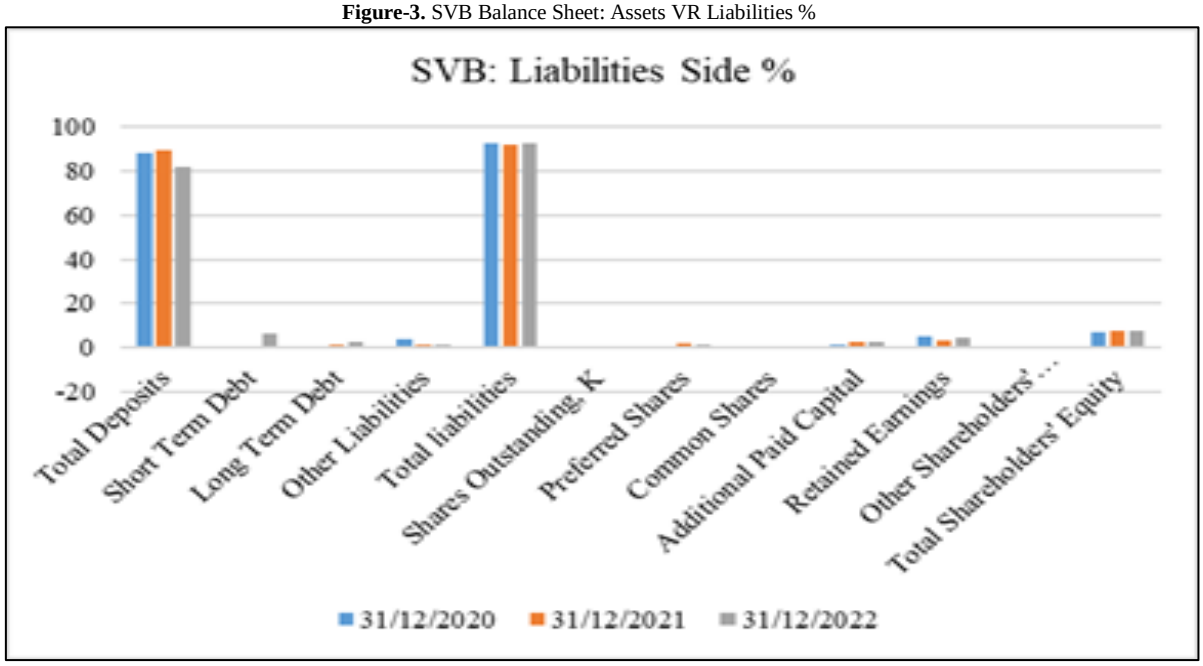


Figure-3. SVB Balance Sheet: Assets VR Liabilities %



Source: Author, based on data from Table 2.

Table.2 and Figures 2 and 3 show the performance of the SVB balance sheet as of 12/31/2022 compared to the previous two years 2020 and 2021. In the year 2022, it is noted that cash and cash equivalents amounted to 6.5% of total assets, which is a very low percentage and is the first indication of failure in liquidity management. The investment portfolio (securities and investment) amounted to 56.7% of the total assets and herein lies the biggest problems with SVB. It placed a very large amount of its assets in the form of government bonds (long-term low-interest treasury bills). Total loans amounted to 35.6% of the bank's assets and 42.9% of total deposits, which in turn represent 81.7% of the bank's total liabilities. One of the sources of its weakness is the composition of the structure of deposits in the SVB. Demand deposits accounted for 76.6% of total deposits. This type of deposit gives depositors the right to withdraw them at any time without restriction. This point is essential and posed an explicit threat to the SVB. Because when a bank run occurred, a large volume of deposits had already been lent and cash was insufficient to meet withdrawal. In addition, 56.7% of the assets were in the form of long-term T-bills. The final result is failure to manage liquidity and confront interest rate risks. SVB was suffering from an apparent lack of risk management oversight by the Board and the risk team. It is not surprising that the reports highlighted that the SVB remained without a senior most risk officer for about eight months in 2022 and only in January 2023 brought a new Chief Risk Officer on board (Rossi, 2023). The leadership gap left the board of directors in uncertainty about emerging risks in the portfolio and market and liquidity risks. Allowance for Loan reached 0.3% of the total assets, so SVB incurred losses of $636 million. The SVB's liabilities show that shareholders' equity represented 7.7% of the total liabilities and shareholders' equity. Indicating that the bank was not applying the prudential control standards set by the BCBS. Moreover, note that the SVB's regulatory capital was too weak to face risks. This point also referred to a very important question. How did the regulatory authorities not alert early to this failure that the bank suffered and try to prevent collapse? The additional capital of SVB reached 2.5% of the total assets and equity. This ratio is considered very low in light of the regulatory standards of capital adequacy to absorb risk.

4.2.2. SVB Balance Sheet Financial Indicators

The balance sheet indicators are financial ratios that summarize and reflect how banks utilize internal and external funds. They provide initial indications of the risks that the bank may fall into as a result of the funds' operations. The most important of which are capital and reserve to total liabilities (C&R/TL), total finance to total assets (TF/TA), total finance to total liabilities (TF/TL), liquid assets to total assets (LA/TA), securities and investments to total assets(S&I/TA), and non-performing loans to total finance (NPL/TF).

Table-3. SVB Balance Sheet Indicators (2020-2022)

Year	(C&R/TL)%	(TF/TA)%	(TF/TD)%	(TD/TL)%	(LA/TA) % Min-Max of Standardized Ratio 30-40%	(S&I/TA)%	(NPL/TF) % Maximum Standardized Ratio 6%
2020	7.3	39.1	44.3	95.3	15.3	42.7	0.4
2021	7.9	31.4	35.0	97.2	6.9	60.6	0.2
2022	7.7	35.1	42.9	88.5	6.5	56.7	0.3

Sources: Author, based on data from Table 2.

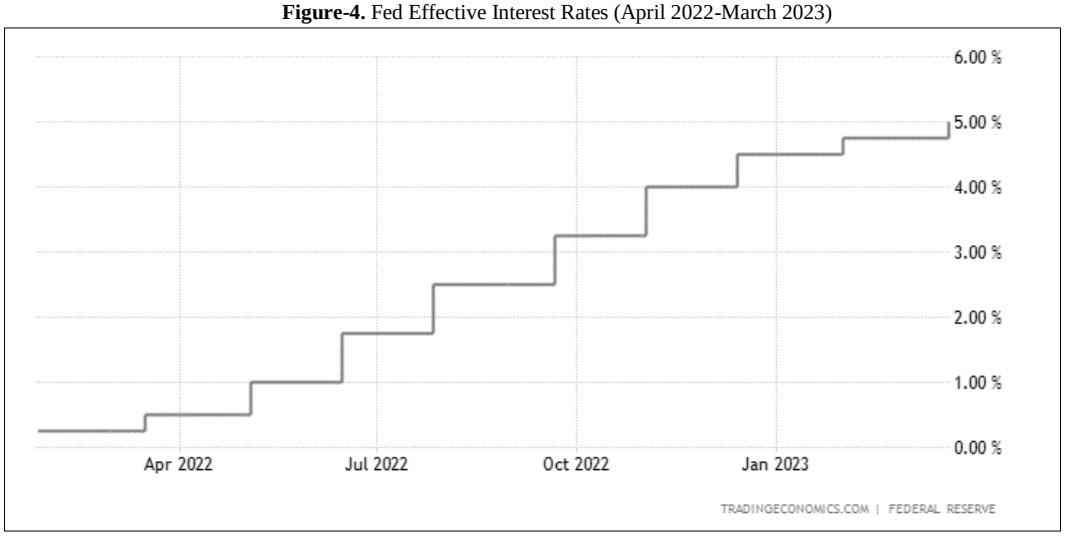
Table 3 shows that the ratio of capital and reserves to total liabilities ranges between 7.3%-7.9%, which is a weak percentage compared to the bank size. Total finance to total liabilities ranges between 31.4% -39.1%, which is

also a weak percentage compared to the nature of the bank's activity, mainly represented in providing financing to emerging technology companies. Deposit-based financing ranges between 35% -44.3%, which indicates that the bank faces a problem (operational risk) in utilizing deposits. This explains SVB's tendency to invest in long-term bonds, as it ranged between 42.7%-60.6% of total assets. The bank failed to manage bond risks, so when interest rates rose, the bond portfolio's value suffered huge market losses (market and interest rate risks). SVB has a good ability to collect bad debts, as its percentage did not exceed the maximum ratio recommended by BCBS (2009) of 6% of the total finance. One of the risks faced by the bank is that a very high percentage of its liabilities were demand deposits and ranged between 88.5% - 95.3%. Therefore, when the run occurred, the bank faced requests for cash withdrawals that amounted to $42 billion within two days. The BCBS (2009) determined that liquid assets to total assets should range between 30-40%. SVB was not committed to this standard ratio, as its liquid assets to total assets ranged between 6.5%-15.3%, meaning that SVB failed to manage liquidity risks. Therefore, it could not meet the customers' withdrawals timely.

4.2.3. SVB and Federal Reserve

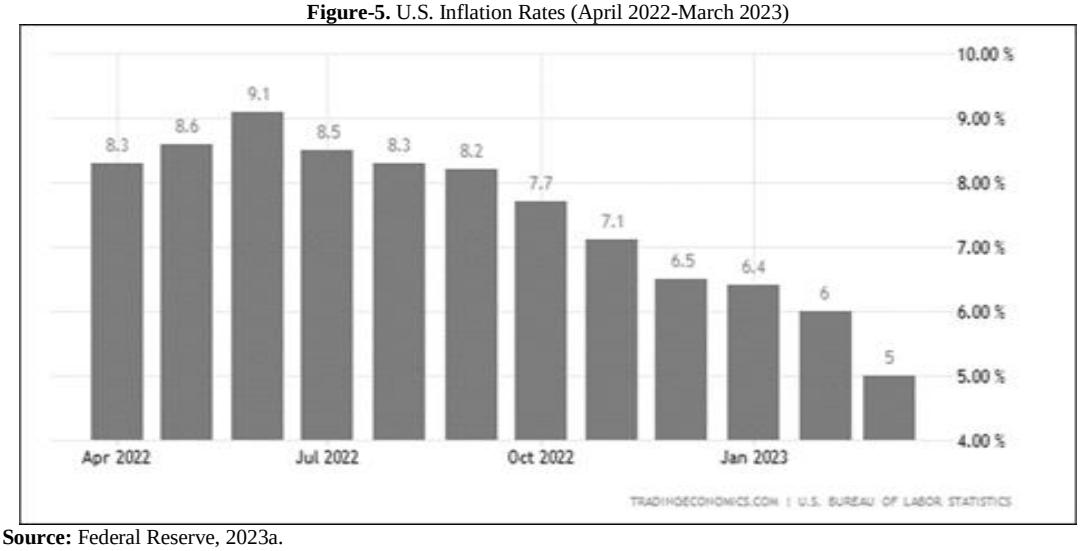
The Federal Reserve raised the interest rate to reach 4.65% in March 2023 as part of its plan to combat inflation. As a result of the decrease in the market price of the bond below the nominal value (Discount), the market value of the SVB portfolio fell. Therefore, SVB incurred a heavy loss when liquidating securities to meet cash withdrawal requests. It seems now that SVB's liquidity risk management practices were poor.

Figure-4. Fed Effective Interest Rates (April 2022-March 2023)



Source: Federal Reserve, 2023a.

Figure-5. U.S. Inflation Rates (April 2022-March 2023)



Source: Federal Reserve, 2023a.

Figures 4 and 5. Show that inflation and long-term interest rates in the U.S. fluctuated over time in response to economic and financial disturbances. Federal Open Market Committee (FOMC) members noted that inflation remained very high and the labor market remained tight for a long time. As a result, they recommended some additional tightening and appropriate policies to reach a sufficiently restrictive policy firming to return inflation to 2% by raising interest rates to limit the money supply and reduce the demand for cheap money (Federal Reserve, 2023b). Therefore, The Fed raised the Fed funds rate by 25bps to 4.75%-5% in March 2023, pushing borrowing costs to new highs since the GFC of 2007-2008. The last Federal policy succeeds reduced the annual inflation rate to 5% in March of 2023 but the interest rate rose. On the other hand, the SVB board was not keeping up with the

changes taking place in the field of Fed policies, therefore, the investment portfolio was negatively affected by the rise in interest rates.

Moody's Credit Rating Corporation noticed that the SVB placed a high amount of its assets in 10 years T-bills and as a result of the high interest rates, it notified the SVB's CEO (Greg Becker) that it would reduce the bank's rating by two points. This is one of the pressures that the SVB was exposed to, as its CEO feared that this would lead to a bank's disturbance. After negotiations, the bank accepted Modi's advice to sell part of its investment portfolio and reinvest it in assets that generate a significant return. On March 8, 2023, the SVB announced that it had sold over USD21 billion worth of its investments, borrowed USD15 billion, and would conduct an emergency sale of its shares to raise USD2.25 billion. This occurred during a period of height-ended uncertainty for the technology sector. Despite the steps taken by the SVB, Moody's downgraded the bank on the same day (Taub, 2023). Investors in several venture capital firms have urged their portfolio companies to withdraw their deposits from the bank. The depositors were alerted to this step and they understood that the SVB suffering a liquidity problem. By March 9, customers had withdrawn $42 billion, leaving the bank with a negative cash balance of about $958 million. As a result, on March 10, 2023, SVB failed to provide financial services and access to credit for individuals, families, and businesses. A bank run occurred and failed in less than 48 hours.

4.3. Is the SVB′s Failure a New Slow Version of the GFC?

The failure of SVB caused financial turmoil in the US. Following the SVB, two banks failed and one liquidated. There are several concerns about a repeat of the 2008 crisis. On March 8, 2023, the holding company for the California - based Silveragate Bank announced that it would begin the process of ending its operations and voluntarily liquidating the bank, ending a long descent for the crypto-focused firm (Schwartz, 2023). On March 12, the Department of Financial Services- New York State closed Signature Bank and appointed the FDIC as a receiver. It was the 29th largest bank, with gross assets of USD110.4 billion and total deposits of USD88.6 billion as of December 31, 2022 (FDIC, 2023b). Signature Bank was one of two banks that were widely used in cryptocurrencies after Silvergate Bank (Abdel, 2023). First Republic Bank has failed despite efforts of the U.S. government and private banks to keep it afloat. JPMorgan Chase bought most of the troubled bank's assets and, on May 1, 2023, JPMorgan Chase is reopening First Republic's 84 offices across eight states under its banner.

Regulators said that "Both insured and uninsured Signature Bank clients will be able to access all of their deposits in a few days under the same systemic risk exemption available to SVB clients". Much like Signature's business is in SVB, where clients are made up almost entirely of corporations, Signature had a deposit base that was mostly uninsured-nearly 90% of deposits, versus 93% of domestic deposits in SVB. This may have caught the attention of regulators eyeing banks with large uninsured deposit bases (Khalijiuwn, 2023). SVB and Signature Bank are two banks that cater to corporate needs and have ties to the technology industry, which has been struggling due to the sharp declines in the cryptocurrency markets and the resulting jitters among investors (BBC, 2023).

When U.S. President Joe Biden tells people that their money is safe, it means that the government takes financial failure seriously. Biden's assurances came after the collapse of SVB and Signature. But this is not only about the U.S., as the value of shares in many banks around the world has declined ((BBC, 2023) March 18).

Vice Chair for Supervision Board of Governors of the Fed System in the events of SVB Bank said that "Our banking system is sound and resilient, with strong capital and liquidity. The Fed, working with the T-Department and the FDIC, took decisive actions to protect the U.S. economy and strengthen public confidence in our banking system. These actions demonstrate that we are committed to ensuring that all deposits are safe. We will continue to closely monitor conditions in the banking system and are prepared to use all of our tools for any size institution, as needed, to keep the system safe and sound. At the same time, the events of the last few weeks raise questions about evolving risks and what more can and should be done so that isolated banking problems do not undermine confidence in healthy banks and threaten the stability of the banking system as a whole" (Barr, 2023).

What seems different in the collapse of the three aforementioned banks they are banks specialized in investing in a specific scope, namely the technology sector and emerging companies. This is what makes the matter far from what happened in the 2008 crisis. Where all the banks were concerned about problems related to the real estate market, relayed by Lehman Brothers, the fifth bank in America and it was a global banker. The other thing is that there are quick responses from the Fed and regulators to contain the crisis of SVB and It is what was not available during the GFC.

5. Conclusion and Policy Implications

The paper aimed to answer important questions regarding the failure of the Silicon Valley Bank (SVB) on March 10. What is SVB? How and why does it fail? Are other US banks at risk? Is the SVB turmoil the beginning of another global financial crisis (GFC)? And what are the learned lessons from the turmoil? The analysis concluded that:

SVB was established in 1983 as a financial institution specializing in providing financial services to emerging technology companies. SVB's headquarter is located in Santa Clara, California. It grew rapidly, ranking sixteenth in the U.S. in terms of assets, which reached USD211 billion by the end of 2022. Supervisors did not fully appreciate the extent of the vulnerabilities as SVB grew in size and complexity.

The turmoil of SVB is less about clients' panic than about poor management of liquidity and interest rates risk. Where the bank was without a senior most risk officer for about eight months in 2022. SVB invested too much money in a long-term investment portfolio reaching 56.7% of total assets by the end of 2022. In 2023 the Fed rise

the interest rate to 4.9 as a monetary policy to fight inflation. Thus the market value of the SVB investment portfolio declined and caused the failure.

As a result of the failure of SVB, the panic wave has swept away two of the largest U.S. banks. The FDIC took control of Signature Bank and First Republic Bank. This is an indication that the financial turmoil exceeded the single bank and began to expand outside the SVB, forming a fear of a repeat of the events of the GFC of 2008.

The primary evidence indicates that what happened to the three collapsing banks is far from the scenario of the 2008 crisis. As they specialize in the emerging technology sector and venture capital while the American banks in 2008 suffered from the collapse of the real estate sector as a result of the Lehman Brothers disaster on September 15, 2008. And this was confirmed by the U.S. President and the Fed regarding the turmoil of March 10, 2023.

Although bank failure causes hurt the economy, there are useful lessons learned by stakeholders (policymakers, regulators, banks, customers, ...etc. including:

- The regulators need to review the regulations of emerging markets, startups, and venture capital, and reformulate the supervisory standards for emerging risks. This will help them to interact well and embrace the best international practices.
- The supervisory authorities should stress to oblige banks to apply stress testing and bank governance and follow up on implementing the results and issue appropriate decisions promptly.
- Stress testing should cover all safety, soundness, and ratings as well as examinations in the areas of liquidity, interest-rate risk, governance, and risk management.
- The risk of uninsured deposits is still an important point that needs to be addressed, as it poses a threat to depositors and their loss of confidence in banking systems.
- Policymakers must pay attention to how the economy is performing and how sectors (banking sector) respond to the policies applied (Fed interest rate and the response of SVB).
- The Specialized and commercial banks need to activate internal control and adhere to the implementation of the BCBS Standards on stress testing and banks governance.
- Banks should be knowing that rapid growth in customers' deposits requires rational management to generate income, otherwise, they will become a burden on them. Banks without good utilization of funds will expose themselves to systematic risk (credit, market, operational). Therefore, high professional competencies in risk management are important.
- Risk management departments in banks need to interact and respond appropriately to market signals, economic conditions, and macro policies. This help protects banks from expected risk timely.
- Depositors and customers should have learned and understood from the history of banks' failure that the panic deepen the crisis causing a bank run.
- Customers should have adequate information about banks such as bank ratings and at least consider their performance indicators for the previous three years.
- Depositors should diversify their deposits (investments, demand, time, …etc.) and they do not put all their money in one bank. This will help them to avoid the risks of uninsured deposits and loss of all their funds.

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