# Research on the Causes and Suggestions of Silicon Valley Bank's Bankruptcy

## Based on the Dual Perspective of the Information Age and Interest Rate Impact

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**Abstract.** The bankruptcy of Silicon Valley Bank can be said to be a very representative financial event recently. Now that Silicon Valley Bank, signatory banks and Credit Suisse have all gone bankrupt, only by studying the real reasons behind Silicon Valley Bank can we better formulate policies and optimize the financial system to prevent the recurrence of such events from further bringing chaos to the market. Through sorting out the causes of Silicon Valley Bank, this paper analyzes and summarizes the main causes of the event: the uncontrolled manipulation of the exchange rate by the Federal Reserve, and the seriousness of negative information in the digital era. Therefore, this paper puts forward the following suggestions: banks should actively supervise Interest rate risk and the state should actively formulate policies to deal with the negative impact of the US dollar's uncontrolled interest rate increase, and attach importance to and prevent the credit crisis caused by negative information in the information age.

**Keywords:** Silicon Valley Bank, Federal Reserve raises interest rates, information age

## 1 Introduction

Against the background of chaos caused by inflation, radical monetary tightening policy and some other political wars and military wars, the current global economy is in a downturn. The momentum just emerging from the crisis of the COVID-19 epidemic has begun to slow down. According to the report (The World Economic Situation and Prospects 2023) released by the United Nations recently, the world economic outlook is dim and uncertain. In 2023, the global economic growth rate is expected to be 1.9%, becoming one of the lowest growth rates in decades [1]. Under the premise of poor economic conditions, the phenomenon of thunderstorms in the banking industry frequently occurs. In the past period of time, many banks went bankrupt in succession, the most famous of which is the bankruptcy of Silicon Valley Bank. Silicon Valley Bank


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was founded in 1983 and is the 16th largest bank in the United States, serving technology companies for nearly 40 years. As of December 31, 2022, the total assets of Silicon Valley Bank reached $209 billion, the total amount of investment securities was $120.1 billion, and the net income of this year was $1.5 billion. On March 9, 2023, Silicon Valley Bank was run 42 billion dollars in one day, which lasted less than 48 hours from the news of explosion, the run to the declaration of bankruptcy. This is the largest Bank failure in the United States since the 2008 financial crisis, and also the second largest bank bankruptcy in history.

The failure of Silicon Valley Bank is the consequence of bank run. From a comprehensive perspective, Fang and Yuan (2023) believed that the Silicon Valley Bank run in 2023 was caused by the instability of its debt source and the serious mismatch of its assets and liabilities exposed and worsened under the environment of radical interest rate increase in the United States [2]. Song (2023) believes that Silicon Valley Bank is a very typical "short loan and long loan" model from a macro perspective, and its originator is the Federal Reserve [3]. Han etc. (2023) studied from the perspective of banks against the background of Basel Accords III, and believed that the profit oriented business model is the underlying logic of deconstructing the bankruptcy of Silicon Valley Bank [4]. The aggressive portfolio of securities and its pro cyclical effect, and the regulatory problem of poor regulatory measurement, which led to the occurrence of Liquidity risk, are the direct incentives [4].

At present, in the research field, experts' research on the causes of the bankruptcy of Silicon Valley Bank is profound and comprehensive, whether from the macro Federal Reserve's monetary policy confusion or the micro banks' own asset mismatch, but there is still less research on the reasons for the rapid transmission of negative information. This article analyzes the reasons from the perspective of macro interest rates and information dissemination.

Understanding the development and causes of the Silicon Valley Bank incident is beneficial to prevent and deal with such thunderstorm like incidents in the future. How to deal with the economic recession caused by the US dollar hegemony in the future, how to fundamentally prevent the recurrence of such a thunderbolt event, and how to get inspiration and harvest from the bankruptcy of Silicon Valley Bank. This paper discusses the bankruptcy of Silicon Valley Bank from the reasons and countermeasures.

## 2 Bankruptcy of Silicon Valley Bank

### 2.1 Event History

During the period of 0-0.25% low interest rate, Silicon Valley Bank, as the main partner of science and technology innovation companies and investment institutions, has obtained a large number of deposits. From June 2020 to December 2021, SVB's deposits increased from 76 billion dollars to more than 190 billion dollars, nearly twice the growth rate, as shown in Figure 1.

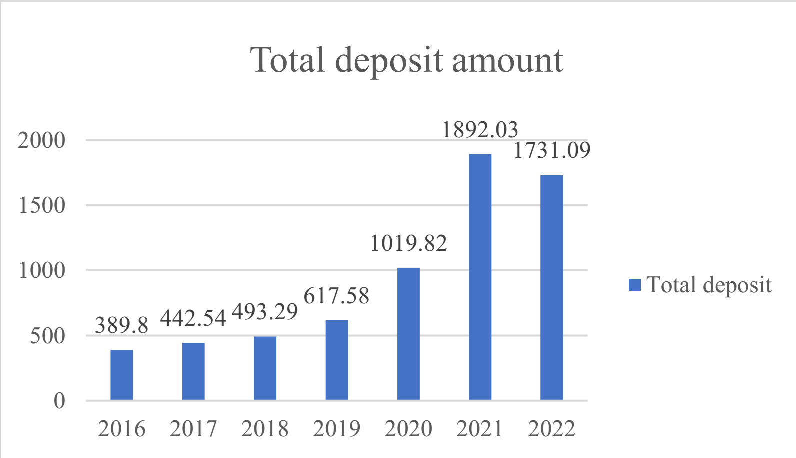


**Fig. 1.** Total deposit amount of Silicon Valley Bank

(Data from Silicon Valley Group's annual report from 2016 to 2022)

At this time, Silicon Valley Bank bought a large number of US bonds and MBS, including many medium - and long-term treasury bond bonds. SVB's MBS holdings have increased from over 20 billion to 100 billion. It is equivalent to allocating 70% of the over 110 billion newly added deposits from 2020 to 2021 to MBS. In 2021, the cash and cash equivalents of Silicon Valley Bank will be only 22 billion, and by the end of 2021, it will even drop to 13 billion, even less than the level in 2020, as shown in Figure 2.

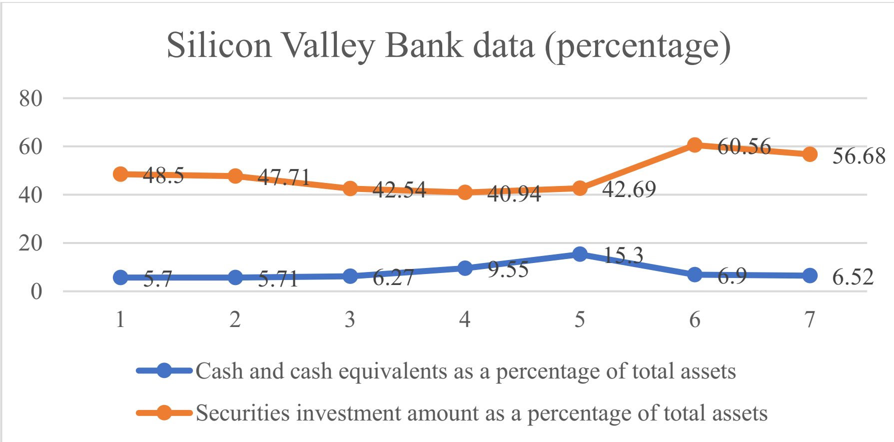


**Fig. 2.** Percentage of cash and securities investment of Silicon Valley Bank

(Data from Silicon Valley Group's annual report from 2016 to 2022)

Since March 2022, the Federal Reserve has raised interest rates eight times, and the interest rate has increased to 4.50% -4.75%. Liquidity has tightened, the investment environment has worsened, and science and innovation companies have begun to draw heavily. Deposits from Silicon Valley Bank have been flowing out since the peak of $198 billion in March 2022, with an annual decline of $16 billion. In particular, demand interest free deposits have plummeted by $45 billion, accounting for 20 percentage points lower than that at the end of last year, greatly increasing the pressure on interest expenditure at the liability side. At the same time, significant interest rate hikes have led to a reversal of short-term and long-term interest rates, resulting in severe bond losses. Due to its negative convexity, the duration of MBS allocated by Silicon Valley Bank has been prolonged, and the risks and losses have become more and more. At the end of 2022, the book floating loss was as high as $17.5 billion, exceeding its capital equity of $16 billion, and it was in a situation where it could not be realized in the short term or would bear huge losses upon realization.

In 2023, in the context of continuing to raise interest rates, Silicon Valley Bank Financial Group, the parent company of Silicon Valley Bank, announced on March 8 that it planned to dispose of $21 billion Available For Sale, which would result in a loss of $1.8 billion; Plan to raise 2.25 billion US dollars through capital increase and share expansion; Increase the scale of term loans from $15 billion to $30 billion. As soon as the announcement was issued, a serious run was triggered. On March 9, 42 billion US dollars nearly 1/4 of the total deposit of Silicon Valley Bank was run. On March 10, the share price of Silicon Valley Bank plummeted by 68%, the largest decline since 1998. Silicon Valley Bank declared bankruptcy due to insolvency 48 hours after announcing the sale of bonds. On March 11, the U.S. regulatory authorities announced the closure of Silicon Valley Bank and designated the Federal Deposit Insurance Corporation (FDIC) as the bankruptcy administrator on the grounds of "insufficient liquidity and insolvency".

# 3 The Root Causes of the Bankruptcy of Silicon Valley Bank

## 3.1 Continued Rate Hikes by the Federal Reserve

The Federal Reserve used the quantitative easing policy to invest dollars in the global market, and then adopted the policy of raising interest rates to recover dollars, so as to plunder global assets. This time, the bankruptcy of Silicon Valley Bank caused it to use the hegemony of dollars wantonly. As of March 12, 2023, the Federal Reserve has raised interest rates by a total of 450 basis points, becoming the fastest rate hike process for the Federal Reserve in 40 years. The constantly rising interest rates cut off opportunities for cheap funds and exposed the fragility of the economy [5].

Silicon Valley Bank, due to its pro cyclical profitability and its characteristics of serving science and innovation enterprises, was hit by the negative impact of rising interest rates. In terms of assets, Han etc. (2023) proposed that Silicon Valley Bank belongs to the profit oriented business model, which will use term mismatch and leverage to expand the loan scale [4]. The loose policy and low risk will bring great benefits, but when the cycle switching economy is weak, the rising risk will lead to greater risk and default rate than traditional commercial banks [4]. Its asset side is mainly a long-term HTM bond portfolio, which is characterized by good returns when interest rates are low and huge risks when interest rates are high. This amplifies the potential negative impact of rising market interest rates on bank profits and losses. In a time when the Federal Reserve's interest rate hikes and cuts have lost their foresight, such risks become fatal. On the debt side, Huang etc. (2023) proposed that the Federal Reserve's arbitrary interest rate hike policy has chilled the primary financing of technology companies, worsened the financing environment, strained cash flow, and significantly increased the demand for withdrawals [6]. This further aggravated the crisis of Silicon Valley Bank [6].

It is precisely because the interest rate hike caused the US Treasury bonds to hang upside down, leading to a significant decrease in bond prices. At the same time, the asset types within the bank are also subject to significant changes in interest rate allocation. So banks generate a lot of floating liabilities. At the same time, the continuous interest rate increase also made the economic market weak. The sci-tech innovation company could not finance and could only maintain its operation since withdrawing deposits from the Silicon Valley Bank, which made the Silicon Valley Bank lose its assets, lose its liabilities and eventually go bankrupt.

Wang and Gao (2023) also pointed out that the collapse of Silicon Valley Bank is not an accidental case [7]. The continuous explosion of many banks has exposed the potential risks accumulated by the U.S [7]. Financial system in the past few years. The unlimited easing and subsequent violent interest rate hikes since the epidemic have caused sharp fluctuations in global interest rates, exchange rates, and commodity prices, which has also exerted unprecedented market risk management pressure on the financial system [7]. Zhao Wei also found that similar problems are common in the U.S. banking industry, such as the prolonged duration of MBS and the rise of Risk-free rate caused by interest rate hikes, and even the floating losses of the U.S. banking industry. As of the fourth quarter of 2022, according to FDIC statistics, the US banking industry has \$279.5 billion in unrealized losses from AFS and \$340.9 billion in unrealized losses from HTM [8]. This further highlights the seriousness of the Federal Reserve's continued interest rate hikes.

### 3.2 Credit Crisis

Another reason for the bankruptcy of Silicon Valley Bank is that it ignored the speed of negative information transmission and the influence amplified by the media in the digital era, thus causing irreversible consequences.

In fact, the irretrievable trigger of Silicon Valley Bank's share price is that it issued a fund-raising announcement. At the beginning of March 2023, the mood of Silvergate Bank in crisis was spreading. On the day when it declared bankruptcy (March 8), the parent company of Silicon Valley Bank - Silicon Valley Bank Financial Group immediately issued a fund-raising announcement, and the cash crisis of Silicon Valley Bank began to be made public. This triggered the market's concern about its insufficient liquidity and financial losses, and Selling climax of Silicon Valley Bank shares. The technology companies in Silicon Valley panicked about most of their performance, causing herd effect. The next day, nearly 1/4 of the total deposits were run. On March

10, panic spread, and Silicon Valley Bank fell into a liquidity crisis, with its share price plummeting 68%. 48 hours after the announcement of selling bonds, it declared bankruptcy due to insolvency. In fact, with the Federal Reserve continuously raising interest rates and serving science and technology innovation companies, it is also a routine operation to make up for and save losses since the release of financing announcements. However, Silicon Valley Bank chose the wrong time point to release the announcement. It did not take into account that Silvergate had just stopped trading and the market was still in a state of panic with high instability, ignoring the speed and impact of negative information transmission in the information age, which could lead to irreversible consequences.

Zhao Zhihong (2023) also expressed a similar viewpoint. He believed that the Silicon Valley Bank event was due to improper information disclosure, which led to the bank run [9]. In fact, the loan risk of the Silicon Valley Bank was not high, and the asset side did not have too many bad loans. It was the reputation risk that destroyed all this. Kiss, H.J (2018) indicated panicking among customers and loss of confidence in the bank's operations caused a run [10]. In the digital economy era, the speed of bank runs has increased in geometric series. Once a run occurs, the bank will quickly go bankrupt [9]. The sale of assets by Silicon Valley Bank led to market panic, and the issuance of new share raising plans to make up for losses further aggravated the impact of negative information, leading to the collapse of Silicon Valley Bank almost instantly [9]. Dosumu etc. (2023) experimented that social media had a direct negative and significant impact on the U.S. banking crisis and its rapid spread elsewhere [11]. Because the information dissemination methods derived from the digital information age are different from traditional forms, it can be said to be a significant upgrade. Zhou Shuying (2022) proposed that today's communication is no longer a traditional one-way information dissemination, but a bidirectional divergent model [12]. Compared to traditional media such as newspapers, news nowadays generally has charts, videos, and an extension of visual and auditory senses, which not only magnifies the information conveyed but also spreads faster. Sui Yan and Jiang Nan (2023) believe that individual experience, cognition, emotion and value judgment will all affect information communication, and then realize social communication in the Internet field, forming a trend of mass communication, which also brings problems such as difficult adjustment of public opinion [13]. Thus, the impact of negative information will be more severe. Xin Chao (2023) proposed that the current communication capabilities have been fully upgraded and referred to the current society in the so-called Twitter era [14]. Information technology makes negative views more accessible, the result is that herd behavior becomes more rapid and concentrated, may not necessarily make society smarter and calmer, but may exacerbate social fluctuations [14]. All possible risks behind this are issues that we should consider and avoid [14]. In addition, commercial banks are inherently vulnerable, and people often think that liquidity crisis is often the last straw, so the credit of Silicon Valley Bank quickly collapsed. At the same time, it also demonstrates the terrifying impact of credit crises in the financial market. Most people are risk averse, and any move may trigger a herd effect. Credit is like a stabilizer in the economy, and losing credit will inevitably lead to panic and crisis.

# 4 Suggestions

## 4.1 Suggestions on Interest Rates

Improper macroeconomic policy behavior is often considered an important cause of systemic financial risks. The government should make long-term plans when formulating economic policies, rather than abandoning the principle of market stability. It cannot be without foresight, focusing only on short-term benefits, and abandoning long-term plans, just like the Federal Reserve's approach brings painful consequences. For other countries, we should continue to pay attention to the changes in the status of the US dollar and take positive measures to address the negative effects of its hegemonic position.

From the perspective of banks, although risk assessment is not an area that commercial banks are good at, it is difficult to make forward-looking judgments on variables such as interest rates, exchange rates, and liquidity tightness in a complex and ever-changing macro environment. It is important to pay attention to the comprehensive balance of assets and liabilities, match the source of funds with the term of use, and timely use risk hedging tools to control reserve risks at a reasonable level, in order to ensure the stability and long-term development of enterprises. How to develop a new set of Interest rate risk management and control methods suitable for the times is also a problem we need to discuss. To strengthen the dynamic management of commercial banks, commercial banks should also actively apply the risk diversification theory, disperse the funds invested, and form a multi-level risk portfolio, so as to reduce the risk of interest rate changes to small and medium-sized commercial banks. In addition, the Silicon Valley Bank incident should not negate the Silicon Valley scientific innovation financial model. The state and policies should continue to encourage commercial banks to increase their support for scientific and technological innovation, continue to improve innovation practices, including the investment and loan linkage model. In terms of supervision, we should strengthen the supervision of small and medium-sized banks, especially the supervision of Liquidity risk and Interest rate risk, which is really effective.

## 4.2 Suggestions for Preventing Credit Crisis

Banks must be sensitive to market conditions and market conditions and must see changes in the financial cycle and the logic of the financial market. Because the economic market is constantly changing, fluctuations are inevitable. All banks' asset liability ratios must be rapidly adjusted according to this new structure and logic. If they remain unchanged, they can only be hit by risks and generate losses. Moreover, banks need to carefully examine the information transmission brought about by the digital era, and always be vigilant about the speed and infectivity of information transmission. Commercial banks need to take comprehensive measures, be forward-looking, conduct reputation risk assessments, and develop comprehensive contingency plans for their announcements. When publishing an announcement, it is important to be cautious in the release of press releases, taking into account both the public's acceptance and the need to convey truthful and detailed information to the public, in order to meet their information needs. Not only should the information disclosed be truthful and comprehensive, but also the content and timing of the publication should be appropriate. It is necessary to distinguish between those that spread slowly and those that need to be expanded and controlled as soon as possible, and to make analysis based on specific situations. Only by disclosing complete information can ambiguity be prevented. The bank needs a good public relations team. A successful public opinion crisis response cannot be separated from a mature Crisis communication system. The most effective way to cope with a crisis is to face the crisis directly, actively clarify, timely disclose relevant true information, and carry out positive publicity and guidance in a timely manner. By leveraging the power of public opinion, we can establish a good image of the company. When a crisis rapidly occurs, the only thing that can maintain market confidence is the credit of the enterprise itself, which is the result of its long-term accumulation.

## 5 Conclusion

By combing the causes of Silicon Valley Bank and studying the causes of Silicon Valley Bank's bankruptcy from multiple perspectives, this paper analyzes the reasons for the Federal Reserve's chaotic monetary policy and the rapid spread of negative information in the digital era, which led to the occurrence of the Silicon Valley event. And they provided suggestions on how to better manage internal risks in the context of US dollar hegemony, as well as suggestions on strengthening market credit to prevent sudden credit collapses. This has laid a favorable foundation for enterprises to strengthen their credit and internal management under the current conditions.

However, there is still a deficiency that the proposed opinions only demonstrate feasibility from a theoretical perspective. However, there may be many unexpected situations in the actual situation. The subsequent research suggests combining practice to find more specific and implementable solutions.

## References

1. UN. (January 25, 2023). World economic situation and prospects in 2023[R/OL]. New York: United Nations, 2023.
2. Fang Yi, Yuan Yan. The Causes and Countermeasures of the Run on Silicon Valley Bank and Northern Rock [J]. Accounting Monthly, 2023,44 (09): 14-18. DOI: 10.19641/j.cnki.42-1290/f.2023.09.002
3. Yang Shasha. The crisis trilogy, the explosion of Silicon Valley Bank is just the beginning [N] Global Times, 2023-03-22 (011). DOI: 10.28378/n.cnki.nhqsb.2023.002413
4. Han Hongling, Peng Yao, Liu Qiang, Chen Hanwen. Research on the Bankruptcy of Silicon Valley Bank in the Context of Basel Accords III -- Based on the Dual Perspective of Business Model and Regulatory Measurement [J]. Accounting Monthly, 2023,44 (09): 3-13. DOI: 10.19641/j.cnki.42-1290/f.2023.09.001

5. Xiong Qiyue, Lv Haomin, Chu Xiao, Huang Xiaojun. The impact and enlightenment of the collapse of the Silicon Valley Bank in the United States [J]. International Finance, 2023 (04): 57-66. DOI: 10.16474/j.cnki.1673-8489.2023.04.04.004
6. Huang Yeni, Zhou Bian. Analysis of the causes of Silicon Valley Bank crisis and its enlightenment to China's banking industry [J]. China's money market, 2023 (5): 78-80). The impact is very bad not only at the bank level, but also at the macro environment level
7. Wang Jiaqiang, Gao Yan. Causes of Silicon Valley Bank's failure, prospect of Systematic risk and policy enlightenment [J] Tsinghua Financial Review, 2023 (4): 63-67
8. Zhao Wei. Six Questions about the Bankruptcy of Silicon Valley Bank [J] Securities Market Weekly, 2023 (10): 1. DOI: 10.3969/j.issn.1004-6291.2023.10.001
9. Zhao Zhihong. Agility is a key dimension to measure the level of bank risk management - based on the analysis of Silicon Valley Bank events [J] Banker, 2023 (5): 28-29. DOI: 10.3969/j.issn.1671-1238.2/023.05.005
10. Kiss, H.J., Rodriguez-Lara, I., Rosa-Garcia, A., 2018. Panic bank runs. Econom. Lett. 162, 146–149.
11. Dosumu O.E., Sakariyahu R., Oyekola O., Lawal R.,2023. Panic bank runs, global market contagion and the financial consequences of social media. Econ. Lett. Article 111170
12. Zhou Shuying. Analysis of the Impact of New Online Media on the Effectiveness of Information Communication [J]. China New Communications, 2022-24 (18): 55-57
13. Sui Yan, Jiang Nan. Accelerating Society and Mass Communication: The Tension of Information Modernity [J]. Journal of Peking University (Philosophy and Social Sciences Edition), 2023,60 (02): 153-163
14. Xin Chao. Enlightenment from the US Bank Run Crisis [J] Securities Market Weekly, 2023 (11): 12-14 DOI: 10.3969/j.issn.1004-6291.2023.11.004