

Analysis and Evaluation of Bank Failure: Evidence from Silicon Valley Bank

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Abstract. As a matter of fact, bank failure always plays a key role in financial analysis, since this is usually the critical reason for financial crisis and systematic risks. With this in mind, the object of this study is the foreign bankrupt bank Silicon Valley Bank, which currently has huge impacts on global financial market. In reality, the importance of the study is that the banking system is not only related to individuals' daily life, but also affect national economic lifeline and the development of the world economy. On this basis, the article mainly expounds some important reasons for the bankruptcy of silicon valley banks and the reflection it brings based on the data analysis. At the same time, the impacts on the US market as well as global market will be demonstrated. In the meantime, the corresponding suggestions for the bank industry as well as Chinese banks are proposed according to the analysis.

Keywords: Bank bankruptcy; credit crisis; risk prevention; economic environment.

1. Introduction

In recent years, the global banking industry has undergone great changes along with the changes in the economic environment, and some banks have failed one after another for various reasons [1, 2]. There are hundreds of banks bankrupt in the United States, and more than ten banks in China have been held in custody, which has brought great losses to the majority of users and impacted the stable development of the financial market. This study will also discuss the bank from the traditional impression of low risk, high credit and go bankrupt. In this study, it will take a closer look at the bankruptcy of Silicon Valley bank as an example.

Silicon Valley Bank's business model is to make loans to early-stage startups and charge high interest rates, and through agreements to obtain stock options or options in the company [3]. The parent company, Silicon Valley Bank Financial Group, holds the equity or options and exercises the options to gain profits when the company goes public (that is, the common investment and loan linkage business of banks at present).

2. Reasons for Failure

2.1. The Antecedents of the Failure

Silicon Valley Bank is a commercial bank in the Silicon Valley area of the United States, which mainly serves scientific and technological innovative enterprises. Through 40 years of unremitting progress, it has become one of the famous venture capital banks in the United States. Nearly half of the technology startups in the United States are the customers of Silicon Valley Bank, and many founders even opened their first corporate account in Silicon Valley Bank. Because it is friendly to entrepreneurs, it is known as the bank that knows the most about tech startups. Silicon Valley Bank also often holds exchange activities for entrepreneurs and investors, forming a strong customer base and a good positive circulation system [4-7]. So far, it took Silicon Valley Bank 40 years to build itself into the first choice of venture capital firms and technology startups, but it only took 36 hours to go bankrupt. As the 16th largest bank in the United States, with \$200 billion in assets, Silicon Valley Bank went bankrupt at Lightspeed (seen from Fig. 1).

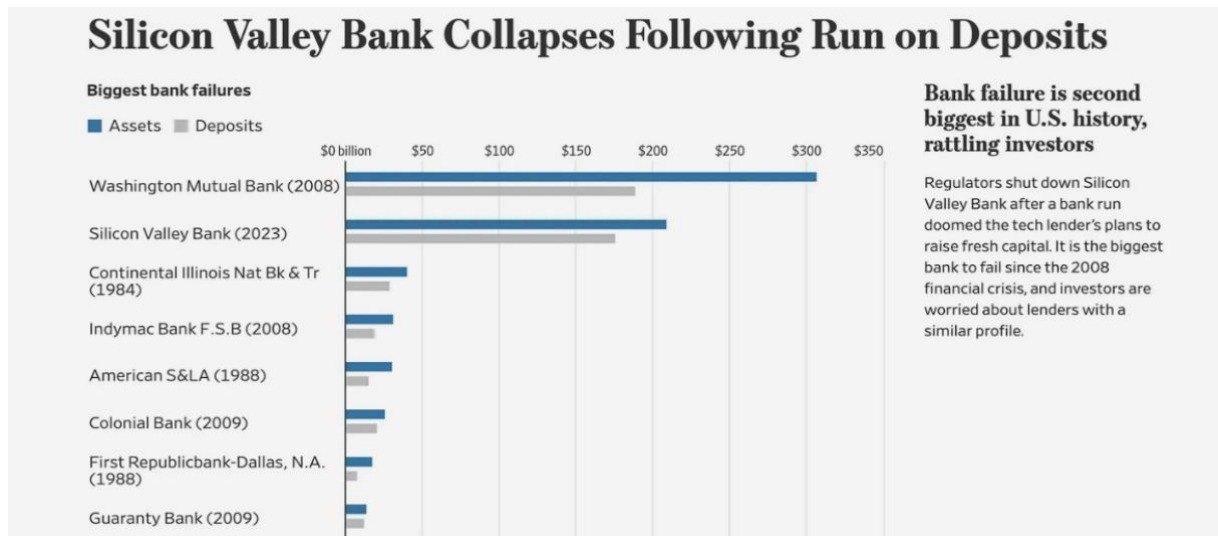


Fig. 1 The silicon valley bank collapses.

2.2. Balance Sheet Problems

Many reports and analyses have pointed out the irrisibility of the balance sheet, the use of short-term assets to buy long-term investment, those asset misallocation resulting in the failure of the capital chain and a run on the bank. Once there is a run, it will go to the abyss. The main assets of Silicon Valley banks come from lending and investing in early-stage businesses. Silicon Valley Bank's lending and investment businesses have been hit by changes in the US start-up funding market. There may be some issues with its balance sheet. The balance sheet structure is not reasonable, risk control will not be reliable basis, it will create a high probability lead to the bank's financial and liquidity failure (seen from Fig. 2).

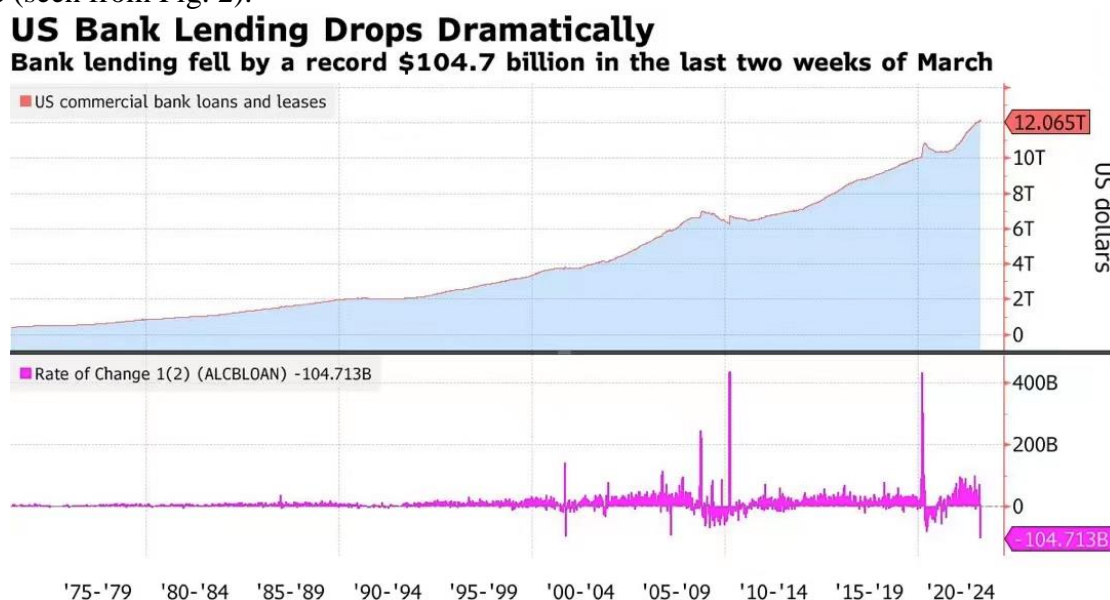


Fig. 2 The US bank leading drops.

2.3. Management Errors and Internal Control Problems

The failure of every bank is related to issues such as deviations in decision-making by its management and insufficient attention to risk management and internal controls. Silicon Valley Bank has no exception. Silicon Valley Bank relies too much on some high-risk customers and businesses, the business concentration is too high, and the lack of adequate evaluation and control of customers' credit and risks leads to the loss of assets and financial risks. In addition, Silicon Valley Bank has its own rules and regulations, processes, examination and approval procedures and other internal control

problems, such as inadequate supervision (need to tell people how one gets this conclusion). It will inevitably bring superposition of various risks to the bank.

3. Possible Impact and Suggestions

3.1. Effects on the U.S.

The failure of Silicon Valley banks may trigger instability and imbalance in the US financial market, which is mainly reflected in the credit tension among financial institutions, thus reducing transactions between each other. This may lead to the poor flow of funds and the tightening of the market, which will affect the financing costs and financing channels of enterprises and individuals, and may even lead to the failure of enterprises and the rise of unemployment rate. (reference : history example or economic theory). Secondly, the failure of banks may lead to volatility and instability in the financial market, which may affect the operation and prices of the stock, bond and money markets. Investors may be worried about the risks in the market and sell off stocks and bonds, leading to price decline in the stock and bond markets. At the same time, currency markets may also be affected, leading to fluctuations in currency values and higher inflation. Finally, in the Silicon Valley region, the failure of banks may lead to the collapse of technology companies and an increase in unemployment, which will affect the economy and job market of the entire Silicon Valley region.

3.2. Effects on the Global

The failure of a Silicon Valley bank may also have some impact on the global economy and financial markets. First, the failure of Silicon Valley Bank could trigger instability and imbalances in the US financial market, which could have a ripple effect on global financial markets [8]. Global financial markets are closely connected, and a bank failure could trigger volatility and instability in global financial markets. Second, the failure of Silicon Valley banks could affect the development of the global technology industry. Silicon Valley is one of the most important science and technology innovation centers in the world, and its science and technology innovation and development also have an important impact on the development of the global science and technology industry. The failure of banks may limit the innovation and development of science and technology in Silicon Valley, which will have an impact on the development of the global science and technology industry. Finally, the failure of banks may trigger global economic recession and instability, which will have an adverse impact on global economic and social stability. The failure of banks may lead to the obstruction of capital flow and the tightening of the market, which will affect the financing costs and financing channels of global enterprises and individuals, and may even lead to the contraction of the global economy and the rise of unemployment rate.

3.3. Suggestions

In the process of analyzing the reasons for the bankruptcy of Silicon Valley Bank, the risk management loopholes of the bank and the insufficient supervision of small and medium-sized banks in the United States have gradually emerged. On the one hand, at present, when China's "Commercial Bank Capital Management Measures (Trial)" is revised, it is necessary to deeply analyze domestic and foreign bank risk cases, and improve the sensitivity, comparability and transparency of capital management, strengthen liquidity risk management, the implementation of large customer concentration management and other new international supervision trends into the country's bank supervision requirements. On the other hand, whether it is a large integrated commercial bank or a small and medium-sized commercial bank that focuses on a certain field and takes a differentiated operation route, it should strictly abide by the basic logic and method of risk management. Once banks violate the basic logic of risk management, they often face huge risks [9, 10].

First, adhere to the basic principles of commercial bank risk management. Banks should always adhere to the three principles of safety, liquidity and profitability in operation and management, and strengthen prudent operation. Silicon Valley banks inverted the order of the three principles, focusing

on profitability and ignoring liquidity. The history of global banking is littered with cases of banks ignoring basic principles and taking risks that led to rapid build-up of risk and subsequent banking crises. During the international financial crisis in 2008, the British bank Northern Rock's illiquid assets accounted for as high as 86%, and eventually went bankrupt due to the drying up of liquidity.

Second, set a prudent risk appetite. Hard constraints on deposits and soft constraints on loans lead to the inherent fragility of commercial banks, which makes it even more necessary to set a prudent risk preference. Risk preference refers to the risk level that banks are willing to accept within the scope of their own risk tolerance, which is reflected in the rational expectation of business environment, active arrangement of various risk structures and reasonable determination of risk boundaries under the premise of capital constraints. A bank's market risk preference should meet the needs of the overall asset-liability portfolio management and achieve a reasonable balance between risk control and operating performance, current income and long-term value. Silicon Valley banks have aggressive risk appetite and neglect asset liability portfolio management, resulting in serious maturity mismatch. The commercial banks of the country should continuously optimize the organizational structure of risk management and strengthen risk governance under the steady and prudent risk preference.

The third is to establish the concept of cross-cycle management. At present, the ratio of reserves to total assets of large US commercial banks is 10 per cent, while the corresponding indicator for small commercial banks is 6 per cent, which is less able to withstand risks across cycles. For the commercial banks of the country, it is necessary to improve the macroeconomic analysis ability, the business cycle research ability and the corresponding industry, product selection ability, and do a good job in cross-cycle management.

Fourth, one will strengthen liquidity risk management. Basel III emphasizes the importance of liquidity risk management and establishes liquidity coverage ratio, net stable fund ratio and other liquidity risk management regulatory standards. In bank failures, including Silicon Valley Bank's, the liquidity crisis is often the straw that breaks the camel's back. Silicon Valley Bank, for example, clearly had major problems with liquidity risk stress testing and contingency planning. China's Banking and Insurance Regulatory Commission issued the Measures for the Liquidity Risk Management of Commercial Banks in 2018, determining the liquidity risk management framework of Chinese commercial banks. Chinese commercial banks should make full use of stress testing and other risk management tools. When setting scenarios, they should comprehensively consider macro and micro economic changes and counterparty credit changes to evaluate the sensitivity of banks to liquidity stagnation in the short term and their ability to solve asset-liability maturity mismatch in the medium and long term.

Fifth, the implementation of risk concentration management. Silicon Valley Bank's clients are mainly companies in the fields of technology, life science and health care, and 59% of its assets are invested in bonds, which is highly concentrated in risk. When commercial banks of the country make use of comparative advantages to focus on developing customers and business in a certain field, they should pay close attention to the risk concentration degree of industry, region, customer and product, and appropriately disperse asset portfolio; Liquidity risk limits such as cash flow gap limits and debt concentration limits should be set according to the bank's own business scale, complexity and preference.

With regarding to Chinese banks, The main business and model of Silicon Valley Bank have enabled it to operate successfully for nearly 50 years. Its investment and loan linkage model has incubated many outstanding technology giants and become a benchmark in the field of technology and finance. Silicon Valley banks have a low credit non-performing rate and a high return rate of equity investment in the linkage business. However, due to interest rate risk, liquidity risk and weak expectations management, such a small and beautiful bank eventually went bankrupt due to a run. Silicon Valley banking crisis has the following enlightenment to the country's commercial banks and the development of science and technology finance.

First, a rational view of Silicon Valley bank's technological innovation financial business model. Silicon Valley Bank's losing assets have nothing to do with the technology industry itself, and its business model of sci-tech finance is still worth learning from. The Silicon Valley model provides financial services for start-ups, as well as financing support for venture capital institutions. The Silicon Valley model has proved to be a sustainable business model after a long period of practice. At the end of 2022, the loan balance under the investment and loan linkage in Shanghai was 7.859 billion yuan, an increase of 315.9% year-on-year, but it only accounted for 1.4% of the total loan balance of science and technology enterprises, and the scale was still small. It is still necessary to further break through the business blocking points and play the incubation role of the investment and loan linkage mode.

Second, small and medium-sized banks need to strengthen their liquidity management capabilities when they form their characteristic operation capabilities. Small and medium-sized banks still need to strengthen the prediction of interest rate risk and liquidity risk while forming the characteristic business model. According to the customer characteristics of science and technology enterprises, branches of large banks can also be encouraged to provide professional support, while managing asset and liability risks at the head office level. At present, the main way for commercial banks in Shanghai to develop science and technology finance is to set up science and technology characteristic departments or branches. For example, Shanghai Pudong Development Bank has set up a specialized structure of "Science and technology financial Service Center", and Bank of Communications has set up a Caohejing Science and Technology branch. These branches rely on the huge assets of the parent bank, the probability of liquidity risk is relatively small.

Third, governors will improve the monetary policy toolbox and give full play to the lender of last resort function. The central bank should make crisis emergency plans and enrich monetary policy tools. In performing the lender of last resort function, it should respond quickly, investigate quickly to understand the root causes of problems, reduce moral hazard and quickly replenish liquidity for temporarily troubled banks. At the same time, do a good job of market public relations management in the new media era, and inject confidence into the market.

Fourth, be vigilant against the impact of interest rate hike and panic spread on small and medium-sized banks in the country. Between large withdrawals and withdrawals in dollar liquidity, risk events can flare up in the weak links of the financial system. The UK pension crisis, the Credit Suisse bank thunderstorm, the Blackstone default and the collapse of Silicon Valley banks are also the risk points that break out on this logical chain. The country should pay close attention to the change of interest rate in dollar market and monitor the health status of assets and liabilities of some small and medium-sized banks with relatively poor deposit stability. In addition, one should also pay attention to banks with a high proportion of unit deposits, because the deposit insurance coverage rate of corporate deposits is low, and the run pressure is greater than that of individual deposits.

Fifth, strengthen the information disclosure and expectation management of commercial banks. When the financial system is in trouble, confidence is more precious than gold. Silicon Valley Bank's announcements did not disclose key information, raising investor concerns, undermining depositors' confidence and ultimately triggering a run. Liquidity risk management should also pay attention to the stock market contagion mechanism and form a coordinated linkage with investor management.

Sixth, bank grading supervision still needs to consider the principle of consistency. On February 18, 2023, the former Banking and Insurance Regulatory Commission (CIRC) officially introduced the Measures for the Capital Management of Commercial Banks (Draft for Comments), which clarified the principle of grading management of commercial banks. While improving the regulatory fineness and comparability, the country should adhere to the consistency of regulatory essence between banking institutions of different levels and different types of risks to avoid regulatory absence and regulatory arbitrage.

4. Conclusion

To sum up, the failure of Silicon Valley banks not only has a major impact on the banking industry and financial markets, but also has a larger impact on consumers, depositors, start-ups and technological innovation. The collapse of Silicon Valley Bank also reminds us that risk management is crucial in the operation of commercial banks. Banks should focus on risk management and strengthen risk assessment and control to maintain their competitiveness and market position. Overall, these results offer a guideline for bank risk analysis.

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