

Revelations from the Collapse of Silicon Valley Bank: From the Perspective of Risk Management of Financial Institutions

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Abstract

This article examines the main reasons for the collapse of Silicon Valley Bank (SVB) in March 2023 from a regulatory and risk management perspective. By analyzing SVB Financial Group's 10-K filings, we found that the economic value of its equity was indicative of excessive interest rate risk on SVB's balance sheet more than a year before it collapsed. Our analysis reveals significant shortcomings in SVB's risk management practices, but also highlights weaknesses in the financial regulatory regime. The paper concludes with a few recommendations that provide useful ideas for policymakers, regulators, and risk managers.

Keywords: Financial Regulation, Silicon Valley Bank, Risk Management

Introduction

Silicon Valley Bank (SVB) is the 16th largest bank in the United States, founded in 1983 and headquartered in Santa Clara, California, and is a member of the Federal Reserve System. It has 17 branches in California and Massachusetts and is primarily focused on financing start-up tech companies. From a revered example of banking innovation to a run on the negative side of the run, the nearly 40-year-old Silicon Valley Bank (SVB) has had a major impact on the financial system in a matter of days.

The reasons for the bankruptcy of Silicon Valley Bank

Asset-liability mismatch and maturity mismatch

Most of SVB's deposits come from tech startups, which are usually short-term in nature. But banks invest a lot of money in fixed-income securities such as long-term Treasuries. Silicon Valley Bank, like other commercial banks in the United States, chose to use low-cost funds to increase its holdings of Treasury bonds and MBS on the asset side. In 2020, SVB's portfolio investment was US\$49.3 billion, an increase of US\$20.2 billion over the previous year, and expanded to US\$127.959 billion in 2021, an increase of US\$78.652 billion over the previous year, 4.4 times that of 2019^[1]. When market interest rates rise rapidly, the market value of these bonds falls sharply, causing bank balance sheets to deteriorate. At the same time, banks are facing severe liquidity pressures as the financing environment in the technology industry tightens, and many startups are accelerating their withdrawals from Silicon Valley Bank.

Poor risk management and lack of regulation

Silicon Valley Bank is overly reliant on a single industry (tech startups) and lacks adequate risk diversification. At the same time, the bank's internal risk control measures were not perfect, and it failed to respond to market changes and run risks in a timely manner. The U.S. regulators are relatively lenient in their supervision of small and medium-sized banks, and there is a certain regulatory vacuum. The Economic Growth, Regulatory Relief, and Consumer Protection Act, passed in 2018, raised the threshold for bank assets subject to strict regulation, and indirectly lowered the supervision of mid-sized banks such as Silicon Valley Bank.

Market panic and runs

On March 9, 2023, Silicon Valley Bank announced that it had sold \$21 billion of available-for-sale securities (AFS) in response to falling bond prices in response to the high interest rate environment brought about by the Federal Reserve's rapid and large interest rate hikes, and said that this operation resulted in a loss of \$1.8 billion. At the same time, Silicon Valley Bank plans to refinance \$2.25 billion in equity funds to provide liquidity support to the bank to cope with securities investment losses. The news sparked panic in the market. On the same day, SVB Financial Group's stock price plummeted by more than 60%, and depositors concentrated on running on deposits of \$42 billion^[2]. The collapse of Silicon Valley Bank has triggered concerns about other small and medium-sized banks, and there has been a more serious run effect. Many depositors, fearing similar problems at other banks, have withdrawn their deposits. This panic has further exacerbated the liquidity pressure of small and medium-sized banks, creating a negative cycle. At the same time, the rapid spread of social media and digital platforms has amplified panic and accelerated the run.

Analysis of the bankruptcy of Silicon Valley Bank

Market Risk

In a low-interest rate market environment, SVB invests heavily in Treasury and mortgage-backed securities. While these investments are relatively safe from a credit risk perspective, they bear significant interest rate risk. When the Federal Reserve began to raise interest rates, interest rates rose rapidly, causing the value of these assets to plummet, causing huge losses for Silicon Valley Bank.

Credit Risk

SVB faces increased credit risk, partly due to deteriorating loan quality. SVB's main customer base is technology innovation companies, which are often subject to market risk and competitive pressures due to unstable revenues and cash flows. Starting in the second half of 2022, SVB's loan recovery ratio fell sharply and the non-performing loan ratio rose as

technology stocks fell sharply and some prominent technology companies faced financial fraud, lawsuits, and bankruptcies, so the bank had to deal with increased credit risk^[3].

Operational risk

The collapse of Silicon Valley Bank underscores its inadequacies in setting up stress test scenarios. The bank's top management did not adequately assess the likely impact of macroeconomic factors, particularly the rapidly rising interest rate environment, on the bank. In addition, the position of Chief Risk Officer at Silicon Valley Bank was vacant for about eight months in 2022, and a new Chief Risk Officer was not hired until January. This lack of senior management can lead to deficiencies in the bank's ability to identify and manage emerging risks. At the same time, SVB's board of directors and management committee lacked members with experience in risk management. Only one of the seven board members on a bank's risk committee has a background in risk management. This situation may result in the board of directors being unable to ask appropriate questions and mitigation strategies to management when faced with technically complex risks.

Revelation of the bankruptcy of Silicon Valley Bank

Matching and management of bank assets and liabilities

When constructing and adjusting balance sheets, banks should strive to balance short-term and long-term capital supply and demand, liquidity and profitability objectives and strategies, and risk and safety indicators to improve the compatibility and robustness of balance sheets. In order to objectively reflect the impact of the decline in asset value on the balance sheet, provision for impairment of assets such as reloans, rediscounts, and fixed assets should be made in accordance with the principle of value. At the end of the period, the book value should be compared with the recoverable amount, and the losses that have been incurred should be accrued in a timely manner to prevent the risk of overvaluation of small assets^[4].

Diversification and balance of banking operations

Silicon Valley Bank's failure reflects the homogeneity and imbalance of its business model. SVB's over-reliance on loans and investments in the technology sector and neglect opportunities in other industries and markets has left the bank's revenue and profits highly exposed to the cyclical and volatile nature of the technology sector. Therefore, banks should diversify and balance their businesses, i.e., seek suitable investment and loan opportunities in different industries and markets to improve the stability and sustainability of revenues and profits.

The importance of risk managers

As an important role in the bank's risk control, risk managers must play a leadership role and pay attention to the assessment of liquidity buffers, potential financing needs and overall balance sheet resilience. At the same time, risk managers should understand the impact of various contingencies on banks through a variety of methods, including contingency liquidity plan scenarios.

The Board of Directors and senior management should set an example, build a good risk management system, and make every effort to create an in-depth risk management atmosphere within the bank. According to its own development strategy, banks can also continuously update their employees' concepts and optimize their knowledge structure through phased training, online education and other channels, so as to build an excellent workforce with pure thinking, efficient work and good at learning, and promote the construction of bank risk management culture.

Prudent economic policy

The collapse of Silicon Valley Bank highlights the negative impact of the Federal Reserve's aggressive interest rate hikes. The government should avoid frequent changes and excessive operations in fiscal and monetary policies to avoid exacerbating public risks, especially during economic recovery and buffer periods. When implementing policies, it is necessary to maintain a macro-prudential perspective and take into account the impact of economic regulation on large and small financial institutions^[5].

Strict regulatory measures

The imperfection of the financial regulatory system was one of the reasons for the collapse of Silicon Valley Bank. The government should strengthen risk control over banks, including establishing and improving information disclosure systems, risk assessment and control mechanisms, strengthening supervision and punishment of banks' related-party transactions and benefit transfer behaviors, strengthening supervision over banks' capital adequacy ratios and leverage ratios to prevent banks from lending excessively and taking unnecessary risks, and urging banks to strengthen measures such as disposing of non-performing assets and replenishing capital in a timely manner to improve their ability to resist risks.

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