Risk Assessment of Banks and Financial Institutions under COVID-19 Crisis

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Abstract. Systemic risk refers to risks that have a broad and severe impact on the entire financial system or economic system. There are similarities in the definition of systemic risk in China and abroad, which usually refer to threats to the entire financial system or economic system, which can trigger a chain reaction and lead to a systemic collapse. In terms of characteristics and measurements, there may be some differences in views and methods at home and abroad. While foreign countries usually pay more attention to the interconnectedness of financial institutions, market liquidity, macroeconomic factors, etc., China may pay more attention to factors such as the stability of financial markets and the role of state-owned enterprises and governments in the economy. The shortcomings of systemic risk abroad may lie in the fact that the unique circumstances of some characteristic countries or regions are sometimes overlooked, because these factors are not universally applicable on a global scale. Due to its unique environment of large economic size, complex financial system, government intervention, and the influence of state-owned enterprises, the study of systemic risk is particularly important for China. This particular situation may require unique methods and metrics to measure and address risks to ensure the stability and sustainability of China's financial system. It is precisely in view of the lack of foreign research on China's specific context that it is of great significance to study the systemic risk of China's banking industry under China's financial system.

Keywords: Liquidity Risk; Credit Risk; Market Risk; Systemic Risk.

1. Introduction

The banking sector has been affected by the pandemic in 2020 in a number of ways, including business, investment and depositor preferences, all of which have contributed to the risks and challenges faced by banks. Macroeconomic development has been suppressed, which has a direct impact on the development of banking operations. Economic stagnation has made it difficult for banks to do business, and it has also exacerbated the instability and volatility of investment products, exposing banks to greater uncertainty in their investment strategies. On the saver side, the tightening of the economic situation has made companies and individuals more cautious, creating a risk-averse preference for highly leveraged investment activities. This preference means that people are more inclined to choose low-risk, relatively stable investment options, which has led to a decline in demand for high-risk, high-reward products offered by banks.

It is worth noting that in order to cope with the impact of the post-epidemic era on economic development, the Federal Reserve has adopted a policy of continuous interest rate hikes. However, this policy also poses significant systemic risks to the banking sector. In a high-interest rate environment, banks face higher borrowing costs, which may limit their ability to lend and finance. In addition, such policies may also change investors' preference for risky assets, leading to portfolio reallocation and volatility in financial markets. In this environment, banks need to carefully evaluate their business strategies and take corresponding measures to mitigate the financial pressure that may be brought about by interest rate hikes.

The many risks posed by the pandemic to the entire banking industry are not only current challenges, but also issues that need to be addressed in the future. In the face of macroeconomic disruptions and increased volatility of investment products, banks need to carefully assess and adjust their investment portfolios to reduce overall risk. At the same time, in response to the changing risk-averse preferences of depositors, banks need to provide more diversified and stable investment

options to meet the needs of different types of customers. In response to the pressure brought about by the Fed's continued interest rate hike policy, banks need to adapt to the challenges brought about by the high interest rate environment by optimizing internal operations and enhancing risk management capabilities.

Therefore, for the banking industry, it is necessary to adjust all aspects from business strategy to risk management. In an uncertain environment, banks need to be more flexible and agile in responding to changes in the external environment, and at the same time, they need to strengthen internal supervision and risk control to ensure the stable operation of banking business and ensure the confidence of customers and financial markets. These measures are not only a response to current challenges, but also an effective prevention and response strategy for future risks.

2. Liquidity Risk

Liquidity risk refers to the risk faced by financial institutions in the face of insufficient funds or the inability to obtain sufficient liquidity in a timely manner [1]. This risk can lead to banks being unable to meet the needs of debt repayments, expenditures, and investments, threatening their normal operations as well as the risk of systemic collapse. As the core of the financial system, banks face liquidity risk due to factors such as their reliance on short-term deposits in their business models, the need for asset-liability matching, and fluctuations in market liquidity. Interest plays a vital role in the banking industry and is one of the main sources of profit for banks. Banks earn interest income through lending, investing, and other financial activities on a deposit-based basis. However, fluctuations and changes in interest rates can have a profound impact on a bank's profitability and risk tolerance. Changes in market interest rates can lead to an imbalance between a bank's assets and liabilities, increasing interest rate spread risk, which in turn challenges banks' earnings and balance sheet soundness [2].

In response to liquidity risks and interest rate fluctuations, the banking industry has developed a variety of strategies to manage and mitigate these risks. These strategies include, but are not limited to, diversifying funding sources, building effective liquidity reserves, improving the asset-liability structure to reduce dependence on short-term funding, using interest rate risk management tools, asset-liability matching, and optimizing asset liquidity management. The implications of these risks for the banking sector are far-reaching. Liquidity risk and interest fluctuations can negatively impact a bank's profitability, capital adequacy ratio, creditworthiness and overall stability [3]. These impacts can undermine long-term health by exposing banks to balance sheet stress, increased credit risk, declining market share, and regulatory intervention. Finally, anticipating risk is an important aspect that must be considered in a bank's business strategy. Banks need to anticipate and quantify the liquidity risks and interest rate fluctuations they may face and develop appropriate strategies and countermeasures to mitigate the potential impact of these risks to ensure their soundness and sustainability.

In addition, the 2008 financial crisis was a global economic event, mainly triggered by the subprime mortgage crisis and volatility in the financial derivatives market. The crisis has exposed the significant risks that some banks take when investing in subprime mortgages and complex financial instruments, many of which are unable to effectively manage the high correlation and potential default risks in their portfolios [4]. This crisis has revealed the need for risk assessment for banks. The high complexity of bank investments and the cross-holding of financial instruments between banks puts the entire financial system in a situation of risk resonance. Banks' sensitivity to debt defaults and market volatility is not adequately assessed, and the lack of effective risk management mechanisms has led to increased systemic risk. The bankruptcy of institutions such as Silicon Valley Bank was also partly due to the underestimation of the high level of investment in financial markets and their risks [5]. The crisis has highlighted the potential threats that overinvestment, lack of transparency and inadequate risk control mechanisms can pose to the entire financial system.

Thus, the 2008 financial crisis revealed the importance of bank risk assessment, emphasizing the need for comprehensive risk assessment and effective supervision of investment portfolios and financial products to prevent and mitigate the possible negative impacts of systemic risk on the financial system as a whole.

3. Credit Risk

Credit risk is one of the main challenges faced by financial institutions, especially when it comes to high-risk investments made by banks like Credit Suisse. In the banking industry, credit risk refers to the potential loss caused by a borrower or other debtor failing to meet their repayment obligations in accordance with their contractual obligations. This risk is closely related to the borrower's creditworthiness, market conditions, and the likelihood of the debtor defaulting [6, 7]. Banks such as Credit Suisse may take on higher credit risk by pursuing a high-yield strategy that involves dealing with debtors with lower credit ratings and a higher likelihood of default.

The banking industry typically develops a variety of strategies to manage credit risk, including establishing an effective credit risk management framework, diversifying portfolios, and rigorous risk review and monitoring mechanisms. However, the risky investment strategies employed by banks such as Credit Suisse can have a profound impact on their business. While these strategies may deliver high returns, there is also the potential for significant losses, especially in the event of financial market instability or cyclical fluctuations in the economy. Such high-risk strategies may bring significant profits in the short term, but their long-term impact can be highly uncertain. In adverse circumstances, this investment strategy can lead to significant losses and have a serious impact on the soundness and sustainability of the bank. The assessment of expected risk needs to consider a variety of factors, including market expectations, economic conditions, borrower creditworthiness, etc. Under the high-risk investment strategies of banks such as Credit Suisse, the expected risk may be higher than traditional investments, as these strategies typically involve investing in riskier debtors.

In summary, credit risk plays a key role in the high-risk investments of banks such as Credit Suisse. While these investment strategies may deliver high returns, they also come with significant risks and uncertainties, which pose potential challenges to the banking sector and its stability. Therefore, banks need to reduce credit risk through effective risk management and prudent investment decisions to ensure their long-term robustness and sustainability.

4. Market Risk

Market risk can be described in terms of interest rate movements and rate hikes, which are key macroeconomic policies in the financial sector. The implementation of interest rate hike policy is a means by which the central bank regulates the money supply and affects overall economic activity, usually by raising interest rates to reduce the pace of economic activity in order to curb inflation or limit the formation of financial bubbles. The implementation of interest rate hikes often has a profound impact on the banking sector. In a high-interest rate environment, banks face higher borrowing costs, which may lead to a decline in borrowing demand and limit the ability of businesses and individuals to raise funds. At the same time, interest rate hikes may affect investors' appetite for risk assets, leading to portfolio reallocation and financial market volatility [8]. The collapse of Silicon Valley Bank in 2008 also reflected the importance of managing banks' balance sheet exposure in a high-interest rate environment.

The banking sector needs to carefully evaluate its business strategy in an environment of rising interest rates. Banks may adopt strategies to reduce their risk exposure, such as adjusting their loan portfolios, seeking a more prudent asset allocation, and increasing their liquidity reserves to cope with the financial pressure that may be brought about by interest rate hikes. The impact of such policies and events can be significant, not only on the profitability and balance sheet of the banking sector, but also on financial markets and the real economy as a whole. Interest rate hikes could trigger

volatility in both stock and bond markets, negatively impacting corporate investment, consumer credit, and economic growth. The collapse of Silicon Valley Bank also highlights the importance of risk management in the banking industry in a high-interest rate environment. The market's expectation of the risk of interest rate hikes and bank failures will directly affect the behavior of investors and financial institutions. Expectations of interest rate hikes could trigger an early market reaction, leading to volatile stock and bond prices. Perceived risks in the banking sector may lead to portfolio adjustments and more prudent management of capital and liquidity to mitigate potential interest rate shocks [9].

In summary, interest rate hikes and bank failures play an important role in the context of market risk, which has a profound impact on the banking industry's business strategy, financial markets and the economy as a whole. Understanding the potential impact of these events on risk can help develop more effective risk management strategies to mitigate the uncertainty and volatility faced by the financial system.

5. Systemic Risk

Systemic risk refers to the potential risks that are unique to the financial system and have a wide range of negative impacts on the entire economic system [10]. Its essence lies in the possibility that a risk event will spread throughout the financial system, leading to systemic collapse. This risk transcends the confines of individual financial institutions or specific markets and has a ripple effect, often triggered by complex cross-linkages, shared risks, and information asymmetry.

The process of assessing systemic risk involves a series of reports and analyses aimed at providing a comprehensive understanding of the potential threats and interconnectedness of the financial system. These reports often rely on a variety of data sources, statistical models, and economic indicators in order to capture different aspects and manifestations of systemic risk. These assessments provide a comprehensive understanding of systemic risks and propose strategies and measures to address them. The modeling process plays a key role in understanding and assessing systemic risk. This process involves using mathematical, statistical, and econometric methods to build models to describe, quantify, and predict risk propagation mechanisms within the financial system. These models are designed to simulate complex interactions and risk transmission in financial markets to identify key factors that can lead to the outbreak of systemic risk. Through assessment and modelling, it can gain a more comprehensive understanding of the nature, sources and transmission mechanisms of systemic risks. This approach provides regulators, policymakers, and financial institutions with deeper insights to help them more effectively prevent and respond to potential systemic collapses and provides an important reference for maintaining financial stability and sustainable development.

6. Conclusion

This paper provides a detailed discussion of systemic risk, looking at risks within the financial system that can have broad and severe impact on the economy as a whole. The paper highlights the similarities and differences between China and foreign countries in the definition, characteristics, and measurement of systemic risk, and points out that foreign countries focus more on financial institution linkages, market liquidity, and macroeconomic factors, while China pays more attention to the stability of financial markets and the role of state-owned enterprises in the economy. In addition, the paper highlights the shortcomings of foreign research on systemic risk in China's special context, especially in China's huge economic scale, complex financial system, and the impact of government intervention. Therefore, it is important to conduct research on the systemic risk of China's financial system.

Extending to the discussion of interest rate hike policy, it can be observed that interest rate hike policy plays an important role in the financial sector, and its implementation affects the operation of the banking industry and the economic environment. In a high-interest rate environment, banks face

higher borrowing costs, which may limit borrowing demand and investment activity, while also affecting the stability of financial markets. In this context, risk management for financial institutions and markets is particularly important. As highlighted in the paper, the assessment and modelling of systemic risk can help to better understand the risk transmission mechanisms in the financial system, which in turn can support the formulation of effective policies and strategies.

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