

ISRG Journal of Economics, Business & Management (ISRGJEBM)



ISRG PUBLISHERS

Abbreviated Key Title: Isrg J Econ Bus Manag

ISSN: 2584-0916 (Online)

Journal homepage: <https://isrgpublishers.com/isrgjebm/>

Volume – II Issue - III (May – June) 2024

Frequency: Bimonthly



THE FACTORS AFFECTING THE BANKING CRISIS IN VIETNAM

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| **Received:** 04.05.2024 | **Accepted:** 08.05.2024 | **Published:** 09.05.2024

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Abstract

The banking sector in Vietnam has experienced various crises over the last decade, impacting the country's economic stability and growth. Understanding the factors that contribute to such crises is crucial for developing preventive measures and ensuring financial stability. This research explores the key determinants of banking crises in Vietnam, focusing on both internal and external factors affecting bank operations. The study aims to identify the main factors influencing the likelihood of a banking crisis in Vietnam and to propose an early warning system to help mitigate future crises. Additionally, the research seeks to provide recommendations for enhancing the resilience of the Vietnamese banking sector. The research employs a quantitative approach, utilizing a multivariate logistic regression model to analyze data from 40 Vietnamese banks over the period from 2013 to 2022. The variables considered include liquidity ratios, asset quality, profitability, ownership structure, and capital adequacy. The study uses secondary data sourced from annual reports and financial statements of the banks, along with relevant news articles and government publications. The findings indicate that factors such as customer deposits, bank borrowings, and non-performing loans significantly influence the likelihood of a banking crisis. The results suggest that banks with higher levels of customer deposits and bank borrowings are more prone to crises, while those with higher levels of capital adequacy are more resilient. The study also highlights the importance of effective risk management practices and diversified funding sources for maintaining financial stability. The study concludes that effective policy measures, including liquidity support, bad debt management, and capital injections, are crucial for enhancing the resilience of Vietnam's banking sector. Moreover, warning thresholds were also introduced to signal a new financial crisis.

Key Words: Banking crisis, Capital adequacy, Liquidity ratios, Non-performing loans, Risk management,

1. INTRODUCTION

Both developed and developing countries are likely to encounter banking crises (Reinhart & Rogoff, 2011). Its consequences do not stop at the banking sector; they also spread to other sectors of the economy, causing growth rates to decrease and unemployment rates to increase (Andersson & Karpestam, 2014). Besides, there are some crises that can trigger institutional reforms that have a positive economic impact in the long run (Andersson, 2016). Monetary policy (Mishkin, 2011; Orphanides, 2011), changes in financial regulation (Eichengreen, 2011; Hanson et al., 2011), or a broader set of reforms to the economic and political institutions of a country (Klingebiel & Laeven, 2002) are reforms that have positive long-term effects and have been studied for more than a decade. Therefore, this study finds the main factors influencing the crisis and proposes institutional reforms to enrich the literature related to this topic. Thereby, institutional reform and the intervention of relevant parties to improve microeconomic results are implemented, minimizing the risk of a new banking crisis.

The banking crises that have erupted in the US since 2007 are the latest in a series of crises that economies around the world have experienced in recent years (Schenk, 2020). During the 1990s, banking crises occurred in Europe (1992–93 crises in the exchange rate regime of the European Monetary System), Latin America (mid-1990s), as well as in East Asia (1997–98 crises in Indonesia, South Korea, Malaysia, Philippines and Thailand) (Schenk, 2020). These crises are costly to varying degrees both in terms of lost output and the financial costs of rescuing the financial sectors (Schoenmaker, 2017).

In Vietnam, although the "banking crisis" in the period 2013–2023 did not occur completely, the Vietnamese banking system still faces many fluctuations and challenges and has a potential risk of crisis. Specifically, bank credit grows rapidly at an average of about 17% per year in the period 2013–2023, contributing to promoting economic growth (Baodientu, 2023). However, the bad debt ratio also increased significantly from 1.69% in 2013 to 2.91% in 2023 (VietNam Banking, 2023). Besides, in 2023, there will also be three main crises in succession: the interest rate race crisis, the clearing payment crisis and the confidence crisis (VnEconomy, 2023).

A banking system crisis can be understood as a serious economic incident when one or more banks and financial institutions encounter difficulties during the same period (Kenedy, 1993). This is often due to a strong decline in assets, asset devaluation, or a high bad debt ratio. In terms of consequences, a banking crisis can lead to a decrease in loans from banks, thereby reducing the production capacity of businesses and personal consumption and causing the economy to decline. Not only that, a banking crisis can spread and impact financial institutions, causing instability in the entire financial system. In addition, public confidence in the banking system will be affected when a crisis occurs, which could cause long-term economic shaking and recession. In addition, banking crises can require a lot of time and expense to recover, prolonging the economic downturn and causing long-term effects on economic and social development (Kenedy, 1993).

The main purpose of this research is to investigate the factors affecting the banking crisis in Vietnam over the past 10 years. From there, analyze the factors inside the bank and consider its influence on the Vietnamese banking crisis to be able to make useful and relevant recommendations. The first is to *identify the*

main and determining factors causing the banking industry crisis in Vietnam (based on historical data and analysis of domestic financial institutions). The second is *the crisis warning threshold of factors*. Finally, it is to *review measures taken by the Vietnamese government and regulatory agencies to minimize the negative impact of the banking industry crisis*.

2. LITERATURE REVIEW

2.1. Overview of the banking system

The banking system serves as a vital component of the financial infrastructure, encompassing a network of institutions that provide a range of financial services to individuals, businesses, and governments. Commercial banks, credit unions, and central banks are key players within this system, each fulfilling distinct roles. Mishkin and Eakins (2015) define banks as financial intermediaries that accept deposits from savers and allocate these funds to borrowers, thereby facilitating the flow of capital in the economy. By channeling funds from surplus units to deficit units, banks enable investment, consumption, and economic growth.

Moreover, banks play a crucial role in facilitating payments and transactions. Through various instruments such as checks, electronic fund transfers, and payment cards, banks enable individuals and businesses to settle financial obligations efficiently (Freixas & Rochet, 2008). This payment function enhances the liquidity and convenience of transactions, reducing the reliance on cumbersome barter systems and promoting economic activity.

Furthermore, banks offer a diverse range of financial products and services tailored to the needs of their customers. These services include savings and checking accounts, loans and mortgages, investment products, insurance, and wealth management solutions. By providing access to capital and financial expertise, banks empower individuals and businesses to achieve their financial goals and mitigate risk (Mishkin & Eakins, 2015).

In addition, the banking system plays a critical role in maintaining financial stability and implementing monetary policy. Central banks, as the apex institutions overseeing the banking system, regulate monetary policy, supervise banks, and act as lenders of last resort in times of crisis (Cecchetti & Schoenholtz, 2014). Through prudential regulations, such as capital adequacy requirements and liquidity standards, central banks mitigate systemic risks and safeguard the integrity of the financial system. Additionally, central banks use monetary policy tools, such as interest rate adjustments and open market operations, to influence economic activity and inflation levels. This dual mandate of financial stability and monetary policy underscores the pivotal role of the banking system in the broader economy.

2.2. Overview of the banking crisis

There have been many scientific research articles and experts from all over the world analyzing and evaluating the causes and consequences of banking crises. The general characteristics of crises all have similar patterns. In fact, the year 1990 witnessed a wave of banking crises in many transition economies, especially in developing countries (Dutttagupta, 2011). Research articles all point out that their causes lie in unsustainable macroeconomic factors, market failures, and government intervention in capital allocation (Laeven, 2011). It is often expressed through booms and busts in credit or asset prices and is resolved by government intervention. This intervention is necessary to avoid the trend of losses and continuous crisis consequences for other banks.

The focus of this research paper, as mentioned above, is the banking crisis because banks are often considered the center of financial problems. Although the banking crisis has similarities and overlaps with other financial crises such as asset price crashes, currency crises, etc. (based on Kaminsky & Reinhart (2007) reference to the interdependence of banking and currency crises), banks have a more important role in allocating capital in the world economy and specific countries. Therefore, its consequences are always more serious than those of other crises.

Chen and Svirydzenka's (2021) study on the causes of the 1997 Thai crisis defined the banking crisis as being caused by persistent current account deficits accompanied by rising foreign debt and other ineffective management policies. In fact, that country faced a crisis due to the collapse of the Thai baht, which occurred when the Thai government was forced to float the baht as economic growth attracted large amounts of foreign investment into Thailand, mainly in the form of foreign direct investment (FDI) and short-term debt, so banks do not have enough foreign currency reserves to offset and support the fixed exchange rate with the US dollar (Chen and Svirydzenka, 2021). The crisis has had a severe impact on the banking industry in particular as well as Thailand in general in terms of currency depreciation, asset price deflation, and widespread business closures, causing increased unemployment significantly. Besides, according to Huber's (2018) investigation of the banking crisis in Germany, it was found that it was related to a reduction in lending at banks, so they provided a definition of a banking crisis that occurred. occurs when that bank cuts down on lending to any business, leading to the business withdrawing significantly from fixed investments that depend on this bank. In detail, the researcher focused on analyzing loan cuts at Commerzbank, a large German bank, during the 2008–2009 financial crisis. The reduction in lending to businesses for 2 years until the end caused Commerzbank to face a crisis and a slow recovery after the great recession of 2008. In addition, Carmona, Climent, and Momparler (2019) define a banking crisis in the United States as a situation in which a large number of banks fail. Since the start of the financial crisis in 2008, 520 US banks have failed. The increase in bank failures is largely due to the collapse of the US housing market. Falling home prices destroyed the value of securities tied to housing loans, forcing banks to write down the value of assets on their balance sheets.

The cause of the banking crisis has been an issue that many scientists and experts have researched and debated up to now. In theory, it is a situation that occurs when customers massively withdraw money from a certain bank (Clause 5, Article 3, Circular 08/2017/TT-NHNN). In fact, at the end of 2022, SCB faced the problem of customers withdrawing deposits due to the chairman of Van Phat Group, Truong My Lan, publicly disclosing incorrect information about the bank (Hoang, 2022). Although the subjects involved were arrested and punished according to regulations, the impact of the incident still greatly affected the liquidity of SCB as well as other banks.

3. METHODOLOGY AND DATA

3.1. Methodology

Multivariate logistic regression is a statistical technique used to model the relationship between a nominal dependent variable and one or more independent variables. The dependent variable can have more than two nominal values.

$$L_i = \ln\left(\frac{P_i}{1-P_i}\right) = Z_i = \beta_1 + \beta_2 \text{LIQUID} + \beta_3 \text{BANK_DEPOSIT} + \beta_4 \text{BANK_BORROWING} + \beta_5 \text{CUSTOMER_DEPOSIT} + \beta_6 \text{GOV_BORROWING} + \beta_7 \text{NPPLS} + \beta_8 \text{NPPLS} + \beta_9 \text{SIZE} + \beta_{10} \text{ROA} + \beta_{11} \text{ROE} + \beta_{12} \text{CATA} + U_j$$

3.2. Data

The data collected in the quantitative study were summarized and described using descriptive statistics. The database was analyzed, plotted, and measures of frequency, central tendency, and variability were calculated. To determine the typical or most representative value within a group of values, measures of central tendency are used, such as means, medians, and modes (Miksza et al., 2023). The difference between values in a distribution can be measured by min/max values, range, variance, standard deviation, or quartiles. Understanding each component of descriptive analytics is important when analyzing data (Fulk, 2023).

TABLE 1: SUMMARY OF VARIABLES

Variables	Symbol	Items	Types	Measurement	Source
Liquid Asset Ratio	LIQUID	358	Independent variable	Liquid assets to total assets	(Vietnam's Banking Financial Soundness Indicators, 2019)
	BANK_DEPOSIT	358	Independent variable	Deposits at other credit institutions over total assets	Luong (2015)
	BANK_BORROWINGS	358	Independent variable	borrowings from other banks to total assets	Luong (2015)
	CUSTOMER_DEPOSIT	358	Independent variable	Customer deposits to total assets	Luong (2015)

	GOV_BORROWINGS	385	Independent variable	Loans from the Government and State Bank of Vietnam on total assets	Luong (2015)
Non-Performing loans	NPPLS	358	Independent variable	Non-performing loans to total assets	Luong (2015)
	SIZE	358	Independent variable	Natural log of total assets	Luong (2015)
Return on average assets	ROA	358	Independent variable	Dividing its net income by its total assets.	(Hargrave, 2023)
Return on average equity	ROE	358	Independent variable	Divide net income by the value of shareholders' equity	(Fernando, 2023)
	POE_OWNER	358	Independent variable	A dummy variable equal to 1 if the largest shareholder is a private company or individual and 0 otherwise.	Luong (2015)
	CATA	358	Independent variable	CATA: total capital over total assets	(Ray & Chakraborty, 2014)
CRISIS	CRS	358	Dependent variable	A dummy variable equal to 1 if crisis and 0 otherwise.	Luong (2015)

4. RESULT

TABLE 2A: OVERVIEW OF VARIABLES USED IN REGRESSION

Variable	Obs	Mean	Max	Min	Std. Dev.
YEAR	358	2017.41061	2022	2013	2.90592
CRISIS	358	0.06983	1	0	0.25522
LIQUID	358	0.03591	0.14491	0.00027	0.02339
BANK_DEPOSIT	358	0.09890	1.12291	0.00002	0.0978
BANK_BORROWINGS	358	0.05745	0.34624	0	0.0663
CUSTOMER_DEPOSIT	358	0.64605	0.9345	0.00326	0.18831
GOV_BORROWINGS	358	0.01436	0.25605	0	0.03122
NPPLS	358	0.01123	0.13876	0	0.01233
SIZE	358	8.16417	11.25619	6.80869	0.52839

ROA	358	0.01182	0.21585	-0.00447	0.02032
ROE	358	0.0923	0.62673	-0.07925	0.09063
CATA	358	235499.63	84308830	0.00648	4455860
POE_OWNER	358	0.73743	1	0	0.44065

Source: Author's calculation

TABLE 2b: REGRESSION RESULTS

Variable	Coef.	Std. Err.	z-stat	P-value	95%CL
CONSTANT	-10.45	5.357	-1.951	0.051	(-20.949, 0.050)
LIQUID	-27.61	19.795	-1.395	0.163	(-66.403, 11.192)
BANK_DEPOSIT	-5.94	4.743	-1.253	0.210	(-15.240, 3.351)
BANK_BORROWINGS	11.33	6.060	1.870	0.062	(-0.546, 23.208)
CUSTOMER_DEPOSIT	6.36	3.225	1.972	0.049	(0.040, 12.680)
GOV_BORROWINGS	9.23	11.610	0.795	0.427	(-13.527, 31.985)
NPPLS	-3.08	26.097	-0.118	0.906	(-54.230, 48.068)
SIZE	0.06	0.622	0.972	0.331	(-0.615, 1.824)
ROA	-62.88	76.810	-0.819	0.413	(-213.420, 87.668)
ROE	-5.35	7.842	-0.683	0.495	(-20.724, 10.018)
CATA	5.17	3.045	1.699	0.089	(-0.795, 11.139)
POE_OWNER	-0.75	0.605	-1.245	0.213	(-1.939, 0.433)

Source: Author's calculation

The results obtained from the multivariate logit model, as shown in Table 1, provide a detailed view of how and to what extent financial variables influence the likelihood of a bank in Vietnam facing a crisis. Among the factors analyzed, customer deposit ratio (coefficient 6.36, $p < 0.05$) and amount borrowed from other banks (coefficient 11.33, $p = 0.062$) appear as strong predictors. significant indicators, with both having positive coefficients, implying a positive association between increases in these indicators and the likelihood of a crisis.

However, it is worth noting that non-performing loan ratio (NPPLS) and ROA, although often considered important indicators of bank financial health, do not show a significant statistical association in the model. our picture. The coefficient of NPPLS is -3.08 ($p = 0.906$) and ROA is -62.88 ($p = 0.413$), both of which do not reach the threshold of statistical significance, suggesting that in the Vietnamese banking context, other factors may play a role.

more important role in influencing the likelihood of a crisis occurring.

For ROE, an index that reflects return on equity, the coefficient is -5.35 ($p = 0.495$), which also does not show a statistical association. This partly reflects that banks can maintain high ROE without minimizing the risk of financial crises. In contrast, the ratio of capital to total assets (CATA), with a coefficient of 5.17 ($p = 0.089$), although not reaching the threshold of statistical significance, shows a trend that may have a relationship with the ability crisis.

This analysis provides new insight into the financial structure and operations of banks, suggesting that a balance must be considered between optimizing profits and managing risk and cash flow. Focusing on both sides of the books – assets and liabilities – can help banks not only strengthen their financial health but also increase their ability to withstand market uncertainties.

5. RECOMMENDATION

After running the multivariate regression results, CUSTOMER_DEPOSIT and BANK_BORROWING are statistically significant and have a positive sign for the probability of a crisis occurring. According to studies on banking crises, liquidity risk has a negative impact on customer deposits (Le et al., 2023). In the context of a crisis, the withdrawal threshold can be influenced by many different factors. Excessive withdrawals lead to bank failures due to liquidity problems, even in the absence of factors such as well-informed consumers or post-crisis consumption (Carmona, 2007). In addition, the vulnerabilities causing the crisis also include macroeconomic factors, including high inflation and low bank profits (Cashin & Duttagupta, 2008). In addition, research by Ennis and Keister (2010) also shows the nature of consumer behavior during times of crisis when there is a fear of bank bankruptcy. Therefore, the threshold for mass withdrawals is influenced by liquidity risks, macroeconomic instability, and depositor behavior.

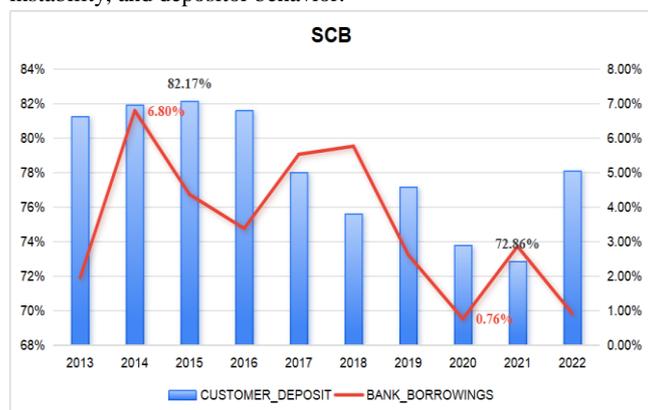


Chart: Ratio of customer deposits and other bank loans to SCB's total assets of SCB in 10 years crisis - (Source: Author's calculations)

Although it is impossible to provide 100% accurate forecasts, the model provides forgotten indicators such as the ratio of customer deposits and the amount borrowed from other banks to total assets. The rate of borrowing from other banks is important, partly due to the fact that some banks accept losses when borrowing from other banks at high interest rates in order to lend to businesses at lower interest rates. Analysis based on SCB's deposit ratio during nearly 10 years of crisis shows that the deposit ratio decreased by 10%. Therefore, a decrease of 10% can be considered an alarming threshold for a new crisis. For other bank loan rates, based on the chart below, the alarming level will be a decrease of 6.04%.

With the above warning threshold, banks need to report indicators to the central bank for timely intervention measures such as liquidity support, taking over crisis banks, or consolidating weak banks. Regarding measures to establish bad debt management and liquidity support, banks can consider recovering bad debts with the purpose of stabilizing liquidity before the risk of a crisis.

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