

Critical Factors Affecting Bank Credit Risk: A Case Study of Commercial Banks in Vietnam

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Abstract

Background: Credit risk is most concentrated in the bad debt ratio. Risk is undesirable for state credit management agencies and direct lending financial institutions but challenging to avoid, especially given the many complex economic developments in domestic and foreign macroeconomics in Vietnam in the past and today.

Objective: The study aims to explore the critical factors influencing bank credit risk at commercial banks in Vietnam.

Methodology: The authors conducted a group discussion with 15 commercial bank managers of 15 commercial banks based on the qualitative method. Also, primary data were collected directly from the sample size of 500 bank staff related to credit risk activities from 100 bank branches from Ho Chi Minh City, Dong Nai Province, Binh Duong Province of Vietnam. This was done using a random sampling technique and online serving, while the structural equation model was used to analyse the data gathered.

Result: The results show that five key factors affect bank credit risk at commercial banks in Vietnam with a significant level of 0.01. These are legal environment and credit policy (LECP), quality of management and internal control processes (QMIC), macroeconomic and political environment (MPE), technology and risk management systems (TRMS) and quality of assets and customer characteristics (QACC). Among these, legal environment and credit policy strongly impact.

Conclusion: The researcher concludes that the legal environment and credit policy are essential for sustainable bank development, especially in a volatile world.

Unique Contribution: This study's results have provided empirical data for understanding factors that influence credit risk management in the financial sector.

Key Recommendation: To improve generalizability, more countries or financial sectors could be included in future studies.

Keywords: Credit risk, legal environment, credit policy, and bank risk management.

Introduction

Credit risk is the most common type of risk in the banking business because credit risk can occur in any activity that potentially involves the risk of breach of obligations by related partners. Many authors have used different forms of expression to mention the concept of credit risk. Specifically, credit risk is the risk of loss arising from a breach by the borrower or partner (Anwar et al., 2023). Credit risk is the risk that the borrower breaches and does not fully perform its obligations to the committed terms of the debt. It can occur when the partner is unable to pay or cannot pay on time; credit risk is related to the possibility of increased monetary loss arising from the breach or perceived change in the partner's ability to breach a financial contract. Credit risk is due to customers not performing or being unable to perform part or all of their debt repayment obligations under the contract or agreement with the bank or foreign bank branch (Abdelaziz et al., 2022). Credit risk is one of the reasons for a decline in bank profits, instability in the commercial banking system, and economic crisis. In addition,

natural disasters, epidemics in general, and the COVID-19 pandemic are risks that cause significant losses to the Vietnamese economy and the world economy.

Moreover, credit risk is the risk of loss arising from a breach by the borrower. However, commercial banks' job is to select borrowers with sufficient goodwill and ability to repay to perform their obligations as committed fully. Therefore, the lack of, or failure to properly and fully implement, the regulations of commercial banks in collecting or processing information when evaluating and monitoring borrowers is the leading cause of credit risk of loans, known as transaction risk (Saleh & Afifa, 2020). In addition, commercial banks perform a single loan transaction and many other loan transactions in lending activities. At any given time, these loans could have credit risk. Therefore, credit risk is created by all loans currently existing in the portfolio, which will contribute to the overall credit risk of commercial banks, known as portfolio risk. Each commercial bank must improve its credit risk management to limit this situation. This requirement requires commercial banks to do better and more effectively in the stages of credit risk management, including identifying potential risks, measuring those risks, and giving appropriate responses. In which: (i) Credit risk identification is the activity of determining the origin or cause of transaction risk and portfolio risk; (ii) Credit risk assessment is the estimation of the level of credit risk or loss for each transaction and the entire loan portfolio; (iii) Once credit risks have been identified and assessed, they need to be responded to using appropriate methods (Kwashie et al., 2022).

Credit risks have recently increased rapidly in commercial banks' credit activities after the Covid-19 pandemic in Vietnam. According to estimates from previous studies, it is equivalent to or higher than the bad debt ratio of commercial banks. According to the State Bank's annual report, as of the end of June 2024, bad debt on the balance sheet of the entire credit institution system increased by 5.77% compared to the end of 2023. The bad debt ratio is at 4.56%, higher than 4.55% at the end of 2023 and 2.03% at the end of 2022. Thus, in the last 2 years, the bad debt ratio has been high and is likely to continue to increase, mainly from the group of commercial banks. Internationally, standardised credit risk measurement needs to be improved. Each risk component is measured differently. Previous studies advised institutions to measure their specific risks using internal models. Many developed-country banks employ different risk models to make provisions or calculate appropriate capital to cover losses. These models have yet to be used in Vietnam. Thus, the study's objectives seek to identify factors affecting bank credit risk at commercial banks in Vietnam and offer policy recommendations to bank management to improve credit risk control.

Literature Review

Bank credit risk (BCR)

Many viewpoints exist on credit risk, which happens when a borrower fails to pay his debt according to the contractual arrangement, delaying the payback requirement (Dong & Oberson, 2021). Credit and interest rate risks are significant hazards in banks' lending activities. Credit risk can be quantified by the likelihood of a partner defaulting and the amount the bank loses when they do (Chowdhury et al., 2023). The partner fails in business and loses money, or the partner purposely defaults while still earning. Credit risk can also result from declines in asset value, investment portfolio, or personal credit quality (Akram & Rahman, 2018).

Legal environment and credit policy (LECP)

Legal constraints, including loan collateral, litigation, and debt collection, affect banks' credit risk management (Ferreira et al., 2019). Strong credit standards allow banks to decrease credit risk by carefully managing loans, selecting clients, and monitoring. Credit policies and rules are essential to govern credit institutions and ensure the banking system's security and efficiency (Hassan et al., 2019; Abdulla & Elshandidy, 2023).

Quality of management and internal control processes (QMIC)

Risk management and internal controls help banks promptly discover, assess, and resolve credit difficulties, reducing losses. Credit risk reduction and banking security depend on excellent credit management and internal control (Elamer et al., 2020). Financial institutions may use effective management and control systems to predict, assess, and manage credit risks. Internal controls can identify credit risks early by monitoring borrowers' finances and credit histories (Elshandidy & Zeng, 2022; Adem, 2023).

Macroeconomic and political environment (MPE)

Political and macroeconomic issues include monetary policy, economic growth, exchange rates, and inflation (Dutta & Saha, 2020). An unsteady economy may influence clients' repayability, increasing credit risk. A stable political environment is necessary for credit growth. Metawa et al. (2023) suggest that economic uncertainty produced by unstable political events, such as frequent policy changes or political turmoil, may affect borrowers' confidence and motivation to invest or borrow. International trade agreements, foreign investment, and sanctions affect credit risk (Shcherbatykh et al., 2021).

Technology and risk management systems (TRMS)

Technology in credit risk management can help banks enhance their analytical and forecasting skills by using data analysis, AI, and advanced risk management systems (Naili & Lahrichi, 2022). Technology must be integrated into risk management systems for banks to handle credit risk more efficiently, precisely, and responsively (Rehman et al., 2019). Using technology for risk management requires data analytics and big data. With current data analytics, financial companies may analyse massive amounts of client spending, credit, and market data (Abbas et al., 2019).

Quality of assets and customer characteristics (QACC)

Bank risk is lowered by collateral value and liquidity, which buffers credit risk. Consumer characteristics like collateral, credit history, and income also affect credit risk (Abbas et al., 2019). Clients with stable incomes and good credit can repay more. According to Metawa et al. (2023), banks may efficiently manage credit risk and make informed lending decisions by assessing client characteristics and collateral quality (Dutta & Saha, 2020).

Theoretical Framework

Legal environment and credit policy affecting bank credit risk

Bank credit risk is heavily influenced by lending rules and practices. According to Dong and Oberson (2021), these regulations set criteria and bounds for banks' risk exposure and management. According to Ferreira et al. (2019) and Chowdhury et al. (2023), banks rely on internal credit rules and legal frameworks to manage credit risk. They sustain banks below risk limits, safeguard the financial system from losses, and support hypothesis H1 in Figure 1.

Quality of management and internal control processes affecting bank credit risk

Credit management and internal control help banks lend safely and reduce credit risk (Abdulla & Elshandidy, 2023). Control and management systems help banks identify, assess, and mitigate risks (Elamer et al., 2020). Banks can significantly reduce credit risk with good internal controls and credit management (Elshandidy & Zeng, 2022). These methods ensure disciplined lending and improve the bank's loan portfolio, boosting financial stability and resilience. Therefore, Figure 1 refutation 2.

Macroeconomic and political environment influencing bank credit risk

Dutta and Saha (2020) say macroeconomic and political conditions strongly affect banks' credit risk. Political stability, government policies, and economic indicators affect banks' risk exposure and borrowers' repayment ability (Metawa et al., 2023). Political and macroeconomic issues affect borrowers' ability to repay and financial health (Shcherbatykh et al., 2021). Financial institutions must monitor the following variables and alter their lending processes, credit regulations, and risk thresholds to limit credit risk from volatile political and economic climates. Figure 1 shows the authors' H3.

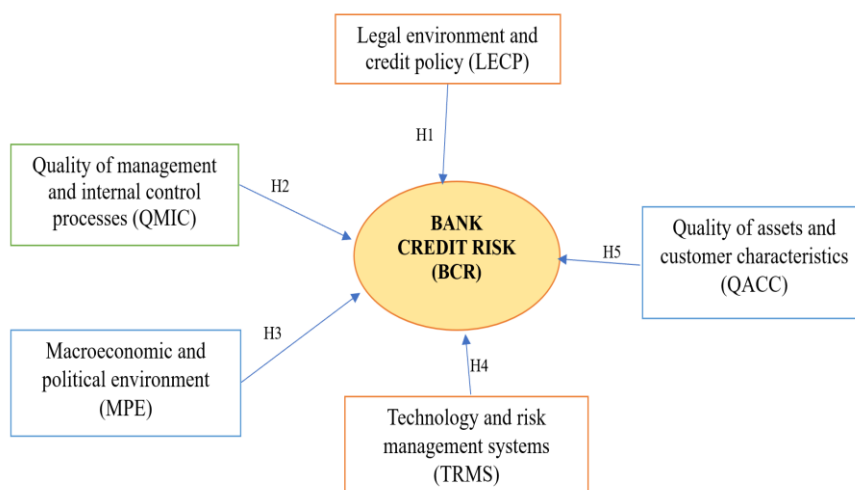
Technology and risk management systems affecting bank credit risk

Technology and advanced risk management systems have transformed banks' credit risk appraisal and control (Naili & Lahrichi, 2022). By using these technologies in credit management, banks can improve decision-making and reduce risk, according to Rehman et al. (2019). Integration improves efficiency, accuracy, and response. Technology integration with advanced risk management systems is crucial to credit risk management, according to Abbas et al. (2019). These tools improve risk assessment, response speed, and decision-making efficiency, helping banks develop more robust credit portfolios. In Figure 1, the authors present H4.

Quality of assets and customer characteristics affecting bank credit risk

Client and collateral quality significantly affect banks' credit risk (Abbas et al., 2019). Banks can improve risk management and reduce defaults (Metawa et al., 2023). High-quality collateral makes banks feel confident lending to borrowers, and consumer qualities can help assess reliability (Dutta & Saha, 2020). After carefully analysing these criteria, banks' lending decisions reduce credit risk, protect financial stability, and promote long-term lending. This led writers to offer Figure 1 for H5.

Based on related studies and analyzed in detail above, the authors have synthesized and relied on the 5 most frequently occurring factors affecting bank credit risk in Figure 1:



Source: The authors suggested

Figure 1: The framework for five critical factors influencing the bank credit risk

Figure 1 illustrates that there are five critical factors influencing the bank credit risk of commercial banks in Vietnam: (1) legal environment and credit policy (LECP), (2) quality of management and internal control processes (QMIC), (3) macroeconomic and political environment (MPE), (4) technology and risk management systems (TRMS) and (5) quality of

assets and customer characteristics (QACC).

Research Methods

These phases are essential to examine, evaluate, and analyse the link between variables in a theoretical model and detailed contents. This process follows six key steps:

First, we must identify and define the study problem. The writers did this by considering the unique difficulties associated with bank credit risk. Theoretical underpinnings of bank credit risk were used to determine the subject matter. Theoretical background on ideas related to monetary and financial stability was presented here. When building an initial scale for factors affecting bank credit risk and developing connections between research model components, Hair et al. (2018) stressed the relevance of these initial steps.

Stage 2: The beginning and empirical research. The second stage included focus groups with fifteen bank managers from Ho Chi Minh City, Dong Nai Province, and Binh Duong Province. The conceptual measures from these interactions refined the bank credit risk scale. This stage refined and changed these conceptualisations to develop a more accurate and flexible scale to improve model variables.

Step 3 involved in-person interviews with thirty participants, including fifteen bank managers and fifteen company managers. In the second round, we employed quantitative analytic results to inform primary city interviews. Participants rated numerous banks' credit risk using a questionnaire.

In the fourth step, "scale validation and reliability testing," the authors used exploratory factor analysis (EFA) and Cronbach's alpha to confirm that the preliminary scale was reliable. We processed 455 out of 500 dispersed replies. Here are some important metrics to consider: (i) a Cronbach's alpha value of 0.6 or higher, which guarantees that the scale is reliable; (ii) an exploratory factor analysis (EFA) that checks for validity using criteria like factor loadings of less than 0.4 and uniqueness with loadings below 0.3, which means that at least half of the variance is explained; (iii) a KMO value of 0.5 or higher, with a statistical significance in Bartlett's test ($\text{Sig} < 0.05$).

Step 5: Formal data collection and analysis: The fifth step involved formal data collection, conducted through direct interviews with 500 bank managers engaged in credit activities from January to June 2024 in Ho Chi Minh City, Dong Nai Province, and Binh Duong Province. A random sampling technique was used, and data were analysed using SPSS version 20.0 and AMOS software to evaluate the collected data.

Step 6: Model validation, policy implications, and conclusions: In the sixth step, the authors performed a final validation of the research model using structural equation modelling (SEM), applying EFA and confirmatory factor analysis (CFA) to assess scale validity. Findings were used to draw inferences and propose policy implications. The study concludes with recommendations to strengthen bank credit risk management through model testing and theoretical synthesis.

Study Results

Vietnam's economy had a rough go of it in 2023, but by year's end, there were hints of improvement based on imports and exports were up and running again, investment was levelling off, and regulations about several crucial sectors had been adopted. Following a moderate first half, credit growth is approaching the 14% objective for 2023, and the bond market has also seen a comeback this year, albeit slower than last year. Following the rate reduction, interest rates in Vietnam are currently at historically low levels; they are projected to stay low through 2024, after which they may begin to rise again. Moreover, this study model uses quantitative and qualitative methodologies to evaluate bank credit risk indicators based on 455 responses. Table 1 illustrates that each factor affects Vietnamese commercial banks' credit risk differently and interdependently. Banks may better predict, manage, and reduce credit risk

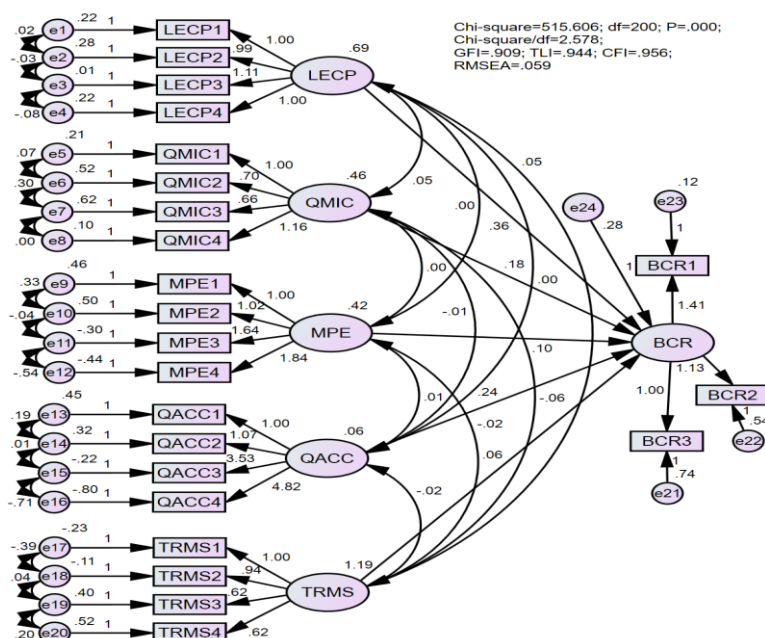
by systematically examining and optimising these areas, enabling sector growth and financial stability.

Table 1: The results of testing Cronbach's alpha and average value for critical factors

Items	Cronbach's alpha	Mean	Standard Deviation
Legal environment and credit policy (LECP: LECP1, LECP2, LECP3, LECP4)	0.934	3.073	0.956
Quality of management and internal control processes (QMIC: QMIC1, QMIC2, QMIC3, QMIC4)	0.834	3.506	0.859
Macroeconomic and political environment (MPE: MPE1, MPE2, MPE3, MPE4)	0.944	3.029	0.953
Technology and risk management systems (TRMS: TRMS1, TRMS2, TRMS3, TRMS4)	0.928	3.074	0.96391
Quality of assets and customer characteristics (QACC: QACC1, QACC2, QACC3, QACC4)	0.814	2.388	0.680
Bank credit risk (BCR: BCR1, BCR2, BCR3)	0.789	3.255	1.019

Source: The authors used SPSS 20.0, Amos.

Table 1 summarises the dependability and descriptive data for important credit risk variables in Vietnamese commercial banks. Cronbach's alpha, mean scores, and standard deviations for each factor reveal internal consistency and trends for each construct. Internal consistency is measured by Cronbach's alpha, with values above 0.7 indicating strong reliability. This table has strong reliability across all parameters, with Cronbach's alpha 0.789–0.944. The mean values show each factor's average rating on a scale of 1 to 5, measuring about 1.0. Finally, all factors' strong Cronbach's alpha values show that survey items measure constructs reliably. According to the mean ratings, management and internal controls mitigate credit risk, while asset quality and client attributes are less important.



Source: The authors used SPSS 20.0, Amos.

Figure 2: Testing key factors impacting bank credit risk

Figure 2 shows that all five criteria statistically affect bank credit risk, albeit to different degrees. The legal environment, credit policy, and management and internal control mechanisms are essential in risk mitigation, emphasising solid regulatory frameworks and good management. Technology, risk management systems, and the macroeconomic and political climate have a more minor but nonetheless significant impact than asset and customer quality.

This analysis reveals that policy, management, and control enhancements best lower bank credit risk.

Table 2: Testing five key factors influencing bank credit risk of commercial banks

Relationships			Standardized estimate	S.E	C.R	P value	SE-Bias	Result
BCR	<---	LECP	0.470	0.043	8.329	***	0.002	Accepted H1
BCR	<---	QMIC	0.187	0.047	3.775	***	0.001	Accepted H2
BCR	<---	MPE	0.101	0.038	2.611	0.009	0.004	Accepted H3
BCR	<---	QACC	0.091	0.062	3.932	***	0.003	Accepted H5
BCR	<---	TRMS	0.108	0.022	2.855	0.004	0.001	Accepted H4

Source: The authors used SPSS 20.0, Amos. *** is significant at the 0.01 level

Based on the hypothesis tested on five fundamental components, Vietnamese commercial bank credit risk (BCR) is shown in Table 2. Standardised estimates, standard errors (S.E.), critical ratios (C.R.), P values, SE-bias, and findings for each predicted relationship reveal the relevance and degree of these influences. The hypothesis Testing and Significance levels analysis of Table 2 demonstrates that each hypothesis (H1 to H5) links a factor to bank credit risk. Significant P values below 0.01 support all five hypotheses, indicating that these factors affect BCR. The "***" signifies significance at the 0.01 level, indicating that the connections investigated are statistically significant with 99% confidence, demonstrating that these factors reliably affect bank credit risk.

Table 3: Key factors impacting bank credit risk of commercial banks in Vietnam

Code	CR	AVE	MSV	ASV	Results
TRMS	0.954	0.845	0.008	0.005	Very good
LECP	0.942	0.804	0.208	0.044	Very good
QMIC	0.804	0.523	0.033	0.010	Very good
MPE	0.980	0.801	0.005	0.001	Very good
QACC	0.977	0.949	0.006	0.002	Very good
BCR	0.841	0.648	0.208	0.052	Very good

Source: The authors used SPSS 20.0, Amos.

Table 3 analyses the critical factors affecting bank credit risk (BCR) for commercial banks in Vietnam, using Composite Reliability (CR), Average Variance Extracted (AVE), Maximum Shared Variance (MSV), and Average Shared Variance (ASV) indicators to assess their reliability and validity. These measures fully evaluate model construct reliability and validity. According to Table 3, composite Reliability (CR) measures the internal consistency of items within each construct, akin to Cronbach's alpha, with a CR score above 0.7 indicating strong reliability. CR values range from 0.804 to 0.980, showing that all constructions reliably measure their underlying notion.

Discussion of Findings

The results present an empirical analysis of the hypothesised relationships between five critical factors and bank credit risk of commercial banks in Vietnam. Based on reports standardised estimates, standard errors (S.E.), critical ratios (C.R.), P values, and SE-bias for each relationship, offering insight into both the statistical significance and relative strength of each factor's influence on bank credit risk following:

(1) The legal environment and credit policy construct are the most significant factors of bank credit risk in this model, as shown by the relationship and highest standardised estimate

(0.470). The large critical ratio (C.R. = 8.329) strengthens and stabilises this association (Hassan et al., 2019; Abdulla & Elshandidy, 2023). A significant positive correlation ($P < 0.01$) indicates that regulatory framework and lending policies significantly impact risk exposure in Vietnamese banks. This supports literature emphasising a solid legal and regulatory environment to reduce default risk and ensure compliance. Regulations, including capital adequacy, loan categorisation, and non-performing loan provisioning, encourage cautious lending and structure credit risk management.

(2) The quality of management and internal control processes component affects BCR moderately but significantly, with a standardised value of 0.187. The C.R. of 3.775 and $P < 0.01$ indicate that sustainable credit risk management requires effective management and robust internal controls (Elamer et al., 2020; Elshandidy & Zeng, 2022). The positive link shows that quality internal controls risk assessment, credit approval, and monitoring reduce risk.

(3) Technology and risk management systems have a standardised estimate of 0.108, showing a mild but statistically significant effect on bank credit risk with C.R. = 2.855, $P = 0.004$ (Naili & Lahrichi, 2022; Rehman et al., 2019). This positive association suggests that modern technology and risk management systems mitigate risk less directly than legislative or managerial considerations.

(4) The macroeconomic and political climate has a statistically significant but minor effect on bank credit risk, with a standardised estimate of 0.101, a C.R. of 2.611, and a P value of 0.009. Macroeconomic analysis should be integrated into credit risk models to help banks manage risk from economic downturns and political developments. According to Abbas et al. (2019) and Metawa et al. (2023). Internal and external factors affecting credit risk all have an interactive relationship. Well-controlled factors inside commercial banks will limit credit risks and vice versa. When the economy recovers, businesses grow, more profits are generated, and businesses will quickly repay the loan. When the economy is in recession, companies have difficulty fulfilling loan obligations, leading to credit risks with commercial banks.

(5) The factors of asset quality, customer characteristics, and bank credit risk have the most negligible impact on BCR (0.091) but still have a significant effect (C.R. = 3.932, $P < 0.01$). This illustrates that collateral quality and customer traits like creditworthiness and income stability are essential but less crucial than other credit risk reduction factors.

Conclusion and Recommendations

A poll of 500 bank managers found that the legal environment, credit policy, management quality, and internal control systems affect Vietnamese commercial bank credit risk the most. These findings highlight the need for credit risk management regulation and internal control. Technology, risk management, and macroeconomic and political conditions have little influence but can increase risk prediction and context. While statistically significant, asset quality and customer characteristics have little direct impact, suggesting Vietnamese banks prioritise systemic controls and external regulatory frameworks over asset-based risk reduction. The implication of the results suggests balancing legislative and managerial changes with technical tools and macroeconomic analysis to strengthen credit risk management techniques based on the policy recommendations below:

(1) Commercial banks must enhance legal and credit policy based on a standardised estimate of 0.470. Commercial banks should update and enforce credit rules such as classification, non-performing loan provisioning, and capital sufficiency. Implementing strict international standards-aligned regulations helps increase banks' credit risk resilience. The government also simplifies foreclosure and collateral enforcement through updated laws to speed up debt recovery. Legal certainty helps banks recover loans and reduce borrower default costs. Banks must build industry limits, focus on lending to essential industries and fields, limit long-term credit, and concentrate on lending to sectors with fast capital turnover cycles.

(2) Commercial banks must strengthen management and internal control systems based

on a standardised estimate of 0.187. Commercial banks should implement strong internal controls to manage the credit lifecycle from loan origination to monitoring and recovery. Audits, risk assessments, and strict approval processes are used to prevent high-risk loans. Commercial banks also spend ongoing training for personnel on risk management, credit evaluation, and compliance standards. High-risk assessment requirements and early credit risk identification require well-trained workers. Continually improving capacity and updating and changing behaviours and habits for operations in the new period is complex, so it is necessary to consolidate the system of regulations and processes toward digitalisation.

(3) Commercial banks must increase technology and risk management based on a standardised estimate of 0.108. They should encourage data analytics, machine learning, and predictive modelling to improve credit risk assessment accuracy. Banks may make data-driven choices by monitoring and identifying new threats in real-time with advanced technologies. In addition to commercial banks' digital banking, cybersecurity protects sensitive financial data and maintains client trust. Banks should follow tight cybersecurity protocols, update their systems, and use encryption to reduce cyber risks.

(4) According to a standardised estimate of 0.101, commercial banks must enhance macroeconomic and political conditions. Mitigating economic volatility could help commercial banks build early warning systems for economic hazards. Banks should also monitor GDP growth, inflation, and currency rates through warning systems. This lets banks predict recessions and alter loan policy. Banks should undertake periodic stress tests to measure loan portfolio resilience under unfavourable economic scenarios.

(5) A normalised estimate of 0.091 suggests commercial banks should improve asset and customer quality. Commercial banks should rigorously evaluate collateral value, borrower creditworthiness, and debt-to-income ratios. Complete risk assessments can help banks find borrowers with steady repayment capacity and reduce default risks. To preserve asset quality and develop comprehensive collateral valuation standards, banks should conduct regular collateral assessments, especially for high-risk loans, to ensure collateral remains sufficient and appropriately represents market realities.

Limitations and future research: This study focuses on Vietnamese commercial banks, restricting its applicability to other nations or financial sectors. Regulatory environments, economic situations, and customer characteristics may affect risk dynamics across geographies and sectors. To improve generalizability, more countries or financial sectors could be included in future studies. Future research could compare legal, economic, and cultural factors on bank credit risk across countries. Such research would reveal how regulatory laws and risk management practices mitigate credit risk globally.

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