The Role of Loan Loss Provisions in Competition Toward Bank Stability

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Abstract: This study investigates how competition and loan loss provisions (LLP) affect stability by including the variable of LLP as a moderating factor introduced as a new variable in the research framework. This study used panel data from 2012 to 2021 from Indonesia's largest banks by assets. This study will analyze competitiveness, loan loss provision, and stability using moderated regression. This study determined long-term and short-term results using VAR/VECM. At the short-term level, competition did not significantly affect stability, while stability had a more significant effect on competition. However, increased competition seems to improve banking stability in the long run. The role of allowance of impairment losses varies depending on the period, with its negative impact on stability in the short-term. This study uses loan loss provision (LLP) as a moderating variable to examine the extent to which competition enhances stability. Internal banking policies must strengthen understanding of the impact of loan loss provisions and ensure effective risk management practices. In addition, banks must consider long-term strategies in managing competition by maintaining a balance between healthy competition and sound risk management to achieve long-term stability.

Keyword: Competition, Stability, Loan Loss Provision, VAR/VECM, moderated regression

INTRODUCTION

The financial system's instability can bring various detrimental effects to society (Minsky, 2016). The effects are undeniable because such disruptions can negatively affect the intermediation function of the monetary policy's transmission mechanism and potentially diminish the public's trust in the financial system's integrity. There are severe consequences of disruptions in the intermediation function, and they can undermine economic growth. Meanwhile, disrupted monetary policy transmission can lead to abnormalities in the actualization of monetary policy. Public distrust regarding the financial system's stability might lead investors to withdraw their investments. This subsequent withdrawal of investments can then give rise to challenges in maintaining adequate liquidity within the financial system (Adrian & Shin, 2008).

Banks with stable financial conditions can resist economic and financial shocks. In a shock situation, banks with a solid financial foundation acquire a competitive edge due to their enhanced capacity to effectively handle risk, uphold public confidence, and sustain operational

efficiency (Yensu et al., 2021). In contrast, an unsettled financial system can hinder capital flows and cause a credit crunch, which can result in economic contraction, rising levels of unemployment, and financial instability (Ngaira & Miroga, 2018)

Adequate regulation and supervision are crucial in sustaining the banking sector's stability and financial system. Regulatory and supervisory entities are pivotal in upholding banking and financial sector stability by enforcing mandated regulations and standards (Srivastava et al., 2023). Competition regulation is a framework that can be utilized as a point of reference to uphold stability. The banking sector's stability can be influenced by fluctuations in competition levels among different banks (Chinoda & Kapingura, 2023; Ozili & Outa, 2017). Banks with fair competition tend to have more significant financial resources to maintain stability through better capability to resist market fluctuations and deal with risks. Healthy and efficient competition makes banks attractive for investors and customers, thus contributing to economic and financial stability and preventing crises or economic fragility. This has been summarized in the competition-stability theory (Clark et al., 2018; Khan et al., 2017). However, the heightened level of competition within the banking sector can boost fragility, augmenting the susceptibility to financial instability. Competition within the banking sector may incentivize banks to assume more credit risks to augment their profitability and expand their market presence (Boyd & De Nicolo, 2005).

Furthermore, loan loss provisions (LLP) are significant in upholding the stability of banks and the broader financial system (Hamidah et al., 2023; Kasir, 2020). The loan loss provision is a crucial factor in safeguarding the stability and integrity of banks as they carry out their lending activities to various entities, including individuals, organizations, and governments. Hence, to address anticipated losses, banking regulatory authorities mandate that banks uphold a suitable and satisfactory level LLP. However, the banking sector lacks clarity about the precise definition of what qualifies as an appropriate or satisfactory provision for loan losses (Ozili & Outa, 2017). By establishing an adequate provision for impairment losses, banks can secure sufficient capital to cover losses that may occur due to asset impairment. Thus, sufficient impairment loss helps protect banks from financial stress that may threaten their stability in case of economic uncertainty or stress. Based on the Regulation of Central Bank of Indonesia No.14/15/PBI/2012, Loan loss provisions (LLP) refers to a reserve of funds that a bank provides in response to a decline in the carrying value of a financial asset below its initial carrying valueThe provision of LLP (Loan Loss Provision) is the outcome of a prudential assessment carried out by the bank regarding the allocation of funds, serving as a demonstration of the prudential principles embraced by the bank. The primary aim of establishing an LLP is to reduce the risk of business insolvency faced by financial institutions when creditors or borrowers cannot meet their payment obligations (Irawati & Sihotang, 2023). Therefore, in the future, the banking sector in Indonesia is expected to strengthen policies related to LLP (in addition to continuing to ensure the soundness of CAR capital levels) as an anticipatory measure against credit risk, especially in an increasingly competitive situation in the global economy. It is crucial to acknowledge that LLP holds significant significance in managing variations in bank earnings, contributing to financial stability, as evidenced by prior research on LLP.

The primary objective of this research is to examine the impact of competition and loan loss provisions (LLP) on stability, using competition and LLP as moderating variables introduced as new variables in the designed research model. This study becomes urgent for the banking industries in Indonesia, as they need to maintain stability under intense competition and ensure adequate provision for impairment losses.

LITERATURE REVIEW

According to a study conducted by (Chinoda & Kapingura, 2023), it was observed that the degree of rivalry within the banking industry exerts a notable detrimental influence on the stability of banks. This concept aligns with the perspective of competitive fragility about competition. Establishing a conducive atmosphere fostering better competition among banks should be a priority, as it can diminish the prevalence of non-performing loans and mitigate the danger of bankruptcy within the banking industry. This study aligns with the research conducted by (Muizzuddin et al., 2021), which demonstrates that interbank competition can have a detrimental effect on bank stability. However, it also highlights that the quality of institutions can mitigate this negative impact and promote stability. Furthermore, the findings are consistent with a study conducted by (Albaity et al., 2019), which reveals that competition is associated with increased credit risk, resulting in reduced profitability and heightened vulnerability for individual banks. This result is consistent with the findings of (Cobbinah et al., 2020; Corbae & Levine, 2019; Ijaz et al., 2020; Leroy & Lucotte, 2017), which substantiated the notion that reduced levels of banking rivalry contribute to enhanced economic growth and bolstered financial stability. (Kabir & Worthington, 2017) also revealed the same findings and supported the theory of competition vulnerability in Islamic and conventional banks from 16 developing countries.

A recent study conducted by (El Moussawi & Mansour, 2022) showed that competition positively influenced both cost efficiency and bank stability within their selected sample. (Dutta & Saha, 2020) also reported strong and consistent support for the view linking competition with stability and the concept of trade-off between inclusion and stability. Furthermore, (Azmi et al., 2024) employed the Two Steps System GMM approach to analyze the performance of 17 countries with dual banking systems. The findings of their study offered empirical evidence in favor of the theoretical framework that establishes a correlation between stability and the degree of competition within Islamic banking institutions. (Risfandy et al., 2022) also examined the relationship between stability and competitiveness levels among Islamic and conventional banks across 29 countries from 2010 to 2018. The researchers discovered compelling data indicating that the influence of competition is primarily observed in the destabilization of traditional banks. In regions where the predominant population follows the Islamic faith, the stability of Islamic banks is largely unaffected. This finding substantiates the disparity in research outcomes about the dual banking system, as observed in both studies.

Empirical research conducted in several countries has shown that bank profits tend to decrease when banks increase the allowance for credit risk (Ghenimi et al., 2017; Nelson, 2020). However, the results are contrary to the outcomes of a study by (Collins & Shaw, 1995), which demonstrated a negative correlation between low levels of credit risk allowance and banks' profitability. Therefore, it can be inferred that a noteworthy association exists between credit risk allowance and the financial performance of banks, potentially leading to either positive or negative consequences. (Ozili & Outa, 2017) analyzed the literature examining credit risk provisioning practices in the banking sector and revealed that providing credit risk is paramount in upholding financial stability and integrity. For this reason, central banks often mandate banks to maintain optimal levels of credit risk provisioning to reduce expected losses. The study by (Agénor & Da Silva, 2017) also found that managing credit risk through loan loss provisions significantly influences profitability and financial stability. Therefore, the principles governing the management of credit risk are inherently intertwined with the overarching structure of the financial system.

(Laeven & Majnoni, 2005) provided some empirical evidence that emphasizes the importance of the establishment of loan loss allowances as an integral part of bank capital regulation, and the regulation of loan loss allowances and risk-based reserves offers have been shown to have potential benefits in reducing the pro-cyclical effects of capital regulation.

Furthermore, according to (Mahieux et al., 2023), loan loss provisions foster a rise in credit availability. It enhances financial stability within an economy characterized by effective intervention in bank operations and regulatory bodies possessing the power to incorporate data on credit losses into capital regulation. According to Luu et al. (2023), a positive relationship exists between a competitive and competition-oriented organizational culture inside banks and their propensity to employ discretionary LLP. This relationship becomes more pronounced as competition levels escalate.

METHOD

The study involved collecting data from multiple sources, including DataStream, BankScope, and the financial reports published by each bank. This study used a dataset that integrated quarterly time series data with cross-sectional data from the Indonesian banking sector. The sample included all commercial banks in Indonesia that matched the selection criteria between January 2012 and December 2021. These criteria included active operation, provision of annual data within the defined time, and inclusion in the top ten banks based on total assets. Based on their total assets, the quarterly statistics of the twelve significant banks in Indonesia were derived from the sampling results.

In order to conduct data analysis, this study employed a moderated regression approach, wherein stability served as the dependent variable, while competitiveness and LLP were included as independent variables. The VAR/VECM methodology was employed in this investigation to ascertain both the long-term and short-term effects.

$$Y = \alpha_0 + \alpha_1 X + e \qquad (1)$$

$$Y = \alpha_0 + \alpha_1 X + \alpha_2 Z + e \qquad (2)$$

$$Y = \alpha_0 + \alpha_1 X + \alpha_2 Z + \alpha_3 X*Z + e \qquad (3)$$

Where
Y = Stability |
X = Competition |
Z = Allowance of Impairment Loss |
X*Z = Allowance of Impairment Losses, moderating competition

The Lerner index indicated the competition variable in this study. This index assesses the level of power of each firm, whether they are close to perfect competition (value close to 0) or a monopoly market structure (value close to 1), according to the study by (Maudos et al., 2014; Spierdijka & Zaourasa, 2018). The Lerner index is computed with the subsequent equation:

$$\text{Lerner Index} = \frac{p_i - MC_i}{p_i}$$

The variable (P) represents the overall revenue, encompassing interest and operating income, divided by the total assets. The marginal cost (MC) concept refers to the incremental cost of producings an additional output unit. In order to account for technological advancements, the inclusion of the year variable was implemented as a dummy variable within the equation. The translog cost function can be elucidated as per the findings of a study conducted by Mirzaei et al. (2013):

$$Ln \ln TC_{it} = \alpha_0 + \alpha_1 \, x \ln TA_{it} + \frac{1}{2} \, x \, \alpha_2 \, x \, (\ln TA_{it})^2 + \sum_{j=1}^{3} \ln w_{j,it}$$
$$+ \frac{1}{2} \sum_{j=1}^{3} \sum_{k=1}^{3} \beta_{jk} \, x \ln w_{j,it} \, x \ln w_{k,it} + \sum_{j=1}^{3} \gamma_j \, x \ln TA \, x \ln w_{j,it}$$
$$+ \delta \, x \, Year \, Dummies$$

The above equation represents the relationship between total cost (TC) and total assets (TA). The cost of labor is reflected in the first input factor, w1. In contrast, the cost of physical capital is reflected in w2 (operating expenses minus personnel expenses divided by fixed assets), and the cost of deposits is reflected in w3 (interest expense divided by total deposits). The marginal cost (MC) can be calculated using the translog model's coefficients and the following formula:

$$MC = \frac{TC}{TA} \cdot \frac{\partial lnTC}{d \ln TA}$$

The logarithmic derivative of the overall cost concerning the logarithm of output can be computed by utilizing the cost function in the below equation:

$$\frac{\partial lnTC}{d \ln TA} = \alpha_1 + \alpha_2 \, x \ln TA_{it} + \sum_{j=1}^{3} \gamma_j \, x \, w_{j,it}$$

The primary objective of studies employing the Lerner index is often to assess the degree of market competitiveness within a particular industry. A value approaching zero on the index signifies a market characterized by perfect competition, wherein all participants engage in intense rivalry. Conversely, if the index is close to 1, the market tends to be in a state of monopoly, where one or a few players dominate the market and the competition is minimal. (Elzinga & Mills, 2011; Feinberg, 1980).

Furthermore, this study's financial stability measurement is based on the Z-score concept. The Z-score reflects bank stability by measuring the probability and insolvency of a bank. This concept explicitly compares the buffers owned by the bank (in terms of capitalization and returns) with the risks (in terms of volatility of returns) to assess the solvency risk of the bank (Ghassan & Guendouz, 2019; Kocisova et al., 2018; Prena & Nareswari, 2022).

$$Z_{it} = \frac{ROA_{it} + \left(\frac{EQ}{TA}\right)_{it}}{\sigma ROA}$$

There are a few key factors from which the z-score is determined. Return on assets (ROA) is used to measure the efficacy of a bank's assets in generating income. Equity to total assets ratio (or simply EQ/TA ratio) measures how much equity a bank has compared to its total assets. The relevant metric here is the standard deviation of asset returns, or ROA. This index measures the amount of randomness or swings in these returns.

A high Z-score indicates a diminished likelihood of bank insolvency, signifying a significantly reduced possibility of the bank encountering financial distress leading to bankruptcy. On the contrary, a low Z-score signifies an elevated probability of experiencing bankruptcy. The Z-Score has gained significant popularity due to its evident capacity to forecast the insolvency of a financial organization. But, a more significant Z-score number

indicates a heightened likelihood that the bank will maintain solvency, meaning it will be capable of fulfilling its financial obligations, and it is improbable that the bank would experience bankruptcy (Chiaramonte et al., 2015; Lepetit & Strobel, 2015). Conversely, a lower Z-score may suggest an elevated bank insolvency likelihood.

Loan loss provisions (LLP) represent the amount adjusted from the recorded value, equivalent to the value that can be recovered through the asset. Using LLP aims to prevent managers from taking excessive risks to achieve objectives in capital management. Based on PSAK 71, effective since January 2020, LLP is calculated using the expected loss method, which follows a proactive approach (Prena & Nareswari, 2022). In the expected loss method, banks are expected to estimate the risk of financial instruments from the time of initial recognition by considering information on projected economic growth, inflation rate, unemployment rate, and commodity price index provided by the Chief Economist at each reporting date, by the provisions in Circular Letter of OJK No. 9 of 2020. Loan loss provisions (LLP) are calculated using the following formula:

$$LLP = \frac{LLP \text{ of Financial Asset}}{Total \text{ of Productive Asset}} x \, 100$$

RESULTS AND DISCUSSION

The first step in the VAR/VECM procedure context involved conducting a stationarity test. Table 1 illustrates the outcomes of the stationarity examination conducted on all variables inside the model. In the context of banking data, the test results indicated that the stability (Z) and competition (LI) variables were stationary at the level. In contrast, the LLP variable was not stationary at that level. However, when the stationarity test was conducted using the first difference, all variables showed a stationarity level.

Table 1. The summary of the panel unit root test conducted by Levin, Lin, and Chu (t*)

VARIABLES	Level			First Difference		
	Statistic	Prob.**	Result	t-Statistic	Prob.**	Result
Z-Score	-2.4904	0.0064	Stationary	-13.925	0.0000	Stationary
LI	-4.2021	0.0000	Stationary	-16.512	0.0000	Stationary
LLP	1.4013	0.9194	non	-7.324	0.0000	Stationary

Table 2 shows that in the banking data, there were four cointegrations because all trace statistic values were above 0.05. Because cointegration exists, the estimation used the Vector Error Correction Model (VECM). There were three cointegrations where the trace statistic value was above 0.05. There was at least one cointegration, so the estimation also used the Vector Error Correction Model (VECM).

Table 2. Johansen Cointegration Test

No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.455	882.688	47.856	0.0000
At most 1 *	0.446	591.584	29.797	0.0000
At most 2 *	0.353	308.196	15.495	0.0000
At most 3 *	0.187	99.456	3.841	0.0000

The Optimal Lag in this Study Was

determined based on the calculation results of many criteria, including the LR, FPE, AIC, and HQ values. These criteria consistently indicated that the ideal lag corresponds to lag two. Hence, the lag that yielded the most favorable results under the employed model was lag two.

This suggests that the present occurrence was influenced by the events that transpired in the preceding one or two periods.

Table 3. Length of optimal lag

Lag	LogL	LR	FPE	AIC	SC	HQ
0	2476.868	NA	5.06E-10	-10.05231	-10.01817	-10.0389
1	2587.492	218.9992	3.45E-10	-10.43696	-10.26629*	-10.3699
2	2623.125	**69.964***	**3.18e-10***	**-10.51677***	-10.20956	**-10.39614***

The values and results must be tested for VAR stability to guarantee accuracy and dependability. The root's modulus should be less than one to ensure the model's stability. From what can be seen in Table 3, it seems that all roots have modulus values that are smaller than one. As a result, we can assume that the chosen lag for the VAR model is optimal and stable.

Table 4. VAR stability test

Root	Modulus
-0.311963 - 0.385813i	0.496
-0.311963 + 0.385813i	0.496
-0.208406 - 0.396523i	0.448
-0.208406 + 0.396523i	0.448
-0.041081 - 0.350760i	0.353
-0.041081 + 0.350760i	0.353
0.238	0.238
-0.232	0.232

The Vector Error Correction Model (VECM) analysis results are shown in Tables 4 and 5, covering both the short and long-term results. According to the results of this study, several factors, including competition and LLPs, as well as the interplay between the two, influence the financial security of banks. Banks can better weather market storms when there is a high degree of competition, a large number of reserves, and careful management of profits.

Table 5. Coefficient estimates for the integration of stability variables (Z1), competition (LI), and LLP in the short-term.

Error Correction:	D(Z1,2)
CointEq1	-0.055794
	[-3.48509]
D(Z1(-1),2)	**-0.606083***
	[-13.7815]
D(Z1(-2),2)	**-0.304064***
	[-7.05501]
D(LI(-1),2)	-25.95425
	[-0.54115]
D(LI(-2),2)	-0.707698
	[-0.01748]
D(LI(-1)*LLP(-1),2)	**3959.508***
	[2.08335]
D(LI(-2)*LLP(-2),2)	1414.045
	[1.25165]
D(LLP(-1),2)	**-1087.194***
	[-2.25525]

D(LLP(-2),2)	-383.8062
	[-0.79274]
C	0.000302
	[0.00014]
R-squared	0.337
Adj. R-squared	0.325

t-table: 2.333 at α =1%*; 1.648 at α = 5%**; and 1.283 at α=10%***

Table 6. Coefficient of integration estimates between variable Z1, LI, LLP in long-term

Cointegrating Eq.:	CointEq1	t-Test
D(Z1(-1))	1	dependent
D(LI(-1))	-2466.327***	[-6.14008]
D(LLP(-1))	8303.616***	[2.64737]
D(LI(-1)*LLP(-1))	150770.6***	[15.8943]
C	-18.21536	

t-table: 2.333 at α =1%*; 1.648 at α = 5%**; and 1.283 at α=10%***

The Relation Between Competition and Stability

The results suggest that in the short term, competitive pressures do not significantly affect stability. In contrast, stability can influence competitiveness within a limited time frame. A stable banking system can lead to efficient capital allocation for investment purposes. Implementing successful investment strategies might result in a subsequent augmentation of savings, establishing a cyclical relationship between investment and savings. This cyclical process can foster intensified competition within the banking sector. The previous studies that support this hypothesis are (Hope et al., 2013; Liu et al., 2013).

Instead, the results suggest that competition, as assessed by the weak Lerner index, may improve banking sector stability in the long run. According to these results, a lower Lerner Index indicates more competition, which is good for long-term stability. When there is more rivalry amongst banks, conditions become more stable. The findings of this study provide empirical support for the competition-stability theory (Dutta & Saha, 2020; El Moussawi & Mansour, 2022; Fu et al., 2014). An increase in interest rates is related to a decline in competition in the banking sector. The borrower is, therefore, incentivized to seek new loans as the interest rate rises. However, it is crucial to recognize that rising interest rates may increase the likelihood of borrowers defaulting on their obligations. This is primarily due to the increased financial burden imposed on them through higher interest payments. The volume of non-performing loans held by banks might increase if the risk of default is high and widespread. One possible explanation for the increased vulnerability of the financial system is the prevalence of non-performing loans. When a bank has a lot of bad loans on its books, it might be challenging to carry out daily tasks and meet its obligations to depositors. The issue above may cause disruptions in the financial industry, with knock-on effects for other areas of the economy (Liu et al., 2013).

However, when competition between banks is high, the market forces lenders to provide more attractive interest rates to win new business, which benefits borrowers. Lower interest rates can reduce the occurrence of non-performing loans by reducing the default risk associated with borrowers. As a result, this has the potential to strengthen the financial sector. Therefore, it is generally agreed that more competition in the banking sector leads to more excellent stability. Low interest rates, efficient credit risk management, and the prevention of the buildup of non-performing loans all constitute a severe threat to the economy as a whole if they are not addressed, and this is mainly due to the system's ability to do these things (Fiordelisi & Mare, 2014).

The relation between LLP and Stability

In the short term, the findings indicate that the lag 1 LLP had a statistically significant adverse impact on stability in the subsequent period, specifically in lag 2. The presence of LLP at lag 1 exhibited a detrimental effect on stability at lag 2, indicating a noteworthy pattern in the association between LLP and short-term temporal stability. In the present scenario, it appears that the accumulated LLP from the preceding period has a contrasting effect on stability during the subsequent two periods, specifically when considering quarterly data. The study shows that for banks to reduce loan-related losses, they need to implement effective risk management procedures. While the importance of loan loss provisions in maintaining bank stability may not be readily evident in the short term, it will become so over time. Long-term studies show that loan loss provisions improve predictability. This exemplifies the significance of loan loss provisions in ensuring the long-term health of Indonesia's financial sector; the more significant a bank's loss reserves, the better it will be able to manage credit risk and prevent losses (Ozili & Outa, 2017). This strengthens the statement of Ismail et al. (2005) that financial stability can be maintained if banks have loss reserves that are strong enough to face uncertainty in both economic conditions and the business cycle. Loan loss provisions can minimize the bank's risk from economic conditions without reducing its operational resources, such as a decrease in asset value and credit risk that can occur due to uncertain economic conditions. Loan loss provisions can minimize the bank's risk from economic conditions without reducing its operational resources, such as a decrease in asset value and credit risk that can occur due to uncertain economic conditions. This keeps banks strong in the face of external pressures. LLP is not only a protective tool but also a resource that can be used for growth and expansion. By having adequate reserves, banks may feel more confident in taking controlled risks to expand their loan portfolio or pursue promising investment opportunities. In other words, LLP provides the necessary flexibility for banks to operate in an uncertain environment while maintaining stability and customer confidence.

The Relationship between LLP Variables Moderating Competition Variables and Stability Variables

The findings from both short-term and long-term studies indicate that LLP enhances the impact of competition on stability. LLP enhances the impact of lag 1 competition on stability in lag 2 in a positive manner within a short-term context. In banking, the impact of competition during the preceding period (lag 1) gains more prominence about stability during the subsequent period (lag 2) when loan LLP is also considered. This suggests that LLP can be utilized to mitigate risk and enhance stability within the banking industry, particularly in highly competitive environments.

In the long term, the existence of loan loss provisions enhances the impact of competition on stability. A more extensive loan loss provision can promote better risk mitigation among the banks. Mitigation includes more thorough credit assessments, minimizing the risk of poor debts, and better risk management in general. These measures can increase customer trust and strengthen healthy market competition. In turn, healthy competition can result in a more stable banking industry more stable. Apart from that, this positive effect may benefit not only the banks but also the customers. Banks with higher capacity in risk management will gain greater trust from their customers. This can result in more favorable interest rates, develop innovative banking products, and improve overall service quality. With increasing customer trust, the market competition becomes healthier. The presence of healthy competition among banks, wherein they strive to offer superior services to consumers, has a beneficial impact on the overall stability of the banking sector. When financial institutions engage in competitive behavior to outperform their counterparts, they are more inclined to implement optimal

strategies for risk management and ensure the preservation of their stability. This can reduce the risk of a crisis or instability that could harm the macro economy.

CONCLUSION

The findings of this study show the complexity of the connection of competition, loan loss provisions, and stability within the banking industry, with a particular emphasis on a specific temporal context. In the short term, competition does not substantially impact stability, although stability does influence competition. Nevertheless, the long-term stability will be diminished due to heightened competition. Loan loss provisions provide varying outcomes in both the short and long run. In the immediate term, the provision for loan losses adversely affects stability, underscoring the significance of risk mitigation to mitigate credit risk. Nevertheless, over an extended period, the implementation of loan loss provisions yields a favorable effect on stability, indicating that both the preservation of stability and the maintenance of loan loss reserves by banks may be achieved.

These results show the significance of loan loss provisions in maintaining banking sector stability and the importance of employing appropriate risk management procedures. These findings hold substantial implications for strategic decision-making within the industry. From a banking perspective, the present study implies careful risk management, especially in managing the allowance of impairment losses. In the short term, the impact of loan loss provisions may not always be visible, and therefore, banks need to understand that changes in risk management practices can have significant long-term effects. Internal banking policies must strengthen understanding of the impact of loan loss provisions and ensure effective risk management practices. In addition, banks must consider long-term strategies in managing competition by maintaining a balance between healthy competition and sound risk management to achieve long-term stability.

From the policy perspective, the banking industry should be regulated very carefully, considering the complexity of these relationships. Regulations should provide banks sufficient flexibility to compete and innovate while maintaining adequate controls to prevent systemic risks. Continuous monitoring and assessment of the impact of policies is thus highly critical. In addition, the government can enhance risk management procedures within the banking sector through monitoring and training initiatives, particularly regarding utilizing loan loss provisions. It is essential to ensure that banks maintain sufficient reserves to manage economic uncertainty effectively, lowering the likelihood of a crisis. The government can also create an environment that supports long-term competition in the banking industry by adopting policies that facilitate the entry of new competitors and, thereby, creating long-term stability in the banking sector.

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