icameka
THE 2ND INTERNATIONAL CONFERENCE
ACCOUNTING, MANAGEMENT, ECONOMICS, UNISKA
E-ISSN 3089-1566
Proceeding Accounting, Management, Economics Uniska **Volume 2, 2025, pp 415-430**
"The Role of Research in Economics, Management, Accounting to Realizing Sustainable Development"

Profitability, Capital Adequacy, Credit Risk, and Macroeconomics on Financial Stability: The Role of Firm Size

Muhamad Romi Ramadhan Gunawan[1*], Desi Efrianti[2]
[1]*Institut Bisnis dan Informatika Kesatuan*
***Email:** romirmdhn11@gmail.com

ABSTRACT

This study aims to analyze the influence of profitability, capital adequacy, credit risk, and macroeconomic variables on the financial stability of banks with firm size as a moderating variable. The background of this study is underpinned by the importance of the role of banking in maintaining the stability of the national economy as well as the inconsistency of previous research results regarding factors affecting the financial stability of banks. This study uses a quantitative approach with a panel data analysis of 42 conventional banks listed on the Indonesian Stock Exchange during the period 2020–2024. Secondary data were obtained from the annual reports of banks, the Financial Services Authority (OJK) and the Bank of Indonesia (BI). The analysis results show that profitability (ROE) has a significant positive effect on financial stability, while the reference interest rate (BI Rate) has a significant negative effect. The variables of capital adequacy (CAR), credit risk (NPL), and inflation have no significant effect on financial stability. The moderating role of firm size strengthens the influence of ROE and CAR on financial stability, yet it does not significantly influence the relationship between NPLs, BI Rate, and inflation. The findings affirm agency theory, monetary transmission theory, and financial stability theory, as well as provide implications for regulators and bank management in strengthening the resilience of national banking systems.

INTRODUCTION

The impact of the banking industry on the stability and development of an economy cannot be overstated. Besides acting as a financial intermediary, the banking industry is a key distributor of monetary policy. This industry is a major contributor to the growth of a country's GDP and the stability of the financial sector as a whole (Statistics Indonesia, 2025). This is because the performance of large banks on the Indonesia Stock Exchange (IDX), such as BRI, Mandiri, and BCA, tends to capture the macroeconomic conditions of the country (Andi et al., 2023; Setiawati, 2020; Widyastuti et al., 2021).

Despite indications of aggregate indicators of high resilience, as reflected in a high capital adequacy ratio (CAR) of 26.22% and a low non-performing loan (NPL) ratio of 2.25% (OJK, 2024), there are still disparities in the performance between banks. During the COVID-19 pandemic and within an increasing BI Rate environment, from 2020 to 2024, larger banks (KBMI 4) appeared more flexible, diversifying portfolios during such challenging times, while smaller banks faced higher pressures for profitability and liquidity (Bank Indonesia, 2024; OJK, 2024). These findings are not inconsistent with global findings that firm size is crucial in the moderation of both internal and external factors that determine financial stability, especially in terms of capital position and risk-absorbing capacity (Gržeta et al., 2023; Jordà et al., 2017; Kanga et al., 2016).

Previous studies on banking stability-which is usually measured by the Z-Score framework of Altman (1968) and Lepetit & Strobel (2013) have produced mixed evidence

E-ISSN 3089-1566
Proceeding Accounting, Management, Economics Uniska **Volume 2, 2025, pp 415-430**
"The Role of Research in Economics, Management, Accounting to Realizing Sustainable Development"

regarding the effect of profitability, capital adequacy, and credit risk. Some have documented that high profitability and capital tend to strengthen stability (Polizzi et al., 2020; Tran & Nguyen, 2020) , whereas other findings have come up as insignificant or produce opposite results . Furthermore, there is a lack in current literature about the moderating role of bank size, despite empirical support that larger banks are more capable in managing credit risks and dealing with macroeconomic shocks (Benbouzid et al., 2022; Andrieu et al., 2018; Ahmed et al., 2023).

This study, therefore, attempts to investigate the impact of profitability, capital adequacy, credit risk, and macroeconomic indicators on the financial stability of conventional banks listed on the Indonesia Stock Exchange, using company size as a moderating variable.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

The current research is embedded in the following three theoretical frameworks: agency theory, monetary transmission theory, and financial stability theory.

Agency theory

According to Agency theory, the decisions taken by managers will be guided by the degree of alignment or conflict of interests between the management and the owners of the firm. If the interest of the parties involved is together, the management will be interested in increasing the company's profits and the level of company's welfare. Inversely, the imbalance of information is likely to lead managers excessively to put the company's welfare at risk (Ali & Puah, 2019; Jensen et al., 1976).

Monetary transmission theory

According to the theory of monetary transmission, factors such as interest rates and inflation impact the finances of institutions through the credit channel and the cost of borrowing. An increase in the benchmark interest rate (BI rate) raises the cost of obtaining funds, ultimately reducing the demand for credit. On the other hand, inflation that elevates borderline inflation (i.e. exceeding the upper threshold of inflation) may affect the quality, profitability of the credit (Benbouzid et al., 2022; Lestari & Suprayogi, 2020; Mishkin, 1996).

Financial stability theory

Financial stability underscores the importance of the role of capital, profits, and the management of risk in promoting the resilience of the banking system. The stability of the system is often measured with the Z-Score, which reflects the ability of a bank to absorb shocks and remain solvent. (Allen & Wood, 2006; Lepetit & Strobel, 2013; Polizzi et al., 2020) .

HYPOTHESIS

Effect of Profitability on Financial Stability

According to agency theory, efficient management will manage company assets to increase profitability without increasing financial risk (Ali & Puah, 2019). Based on financial stability theory, high profitability strengthens internal capital and enhances a bank's ability

to withstand economic shocks (Polizzi et al., 2020) . Empirical research also supports this, showing that profitability has a positive impact on bank stability in various countries (Kanga et al., 2016; Tran & Nguyen, 2020; Farahiyah et al., 2025; Ridwan et al., 2025)
H1: Profitability (ROE) has a positive effect on bank financial stability.

Effect of Capital Adequacy on Financial Stability

According to financial stability theory, strong capital enables banks to absorb losses and maintain market confidence during periods of crisis (Polizzi et al., 2020) . Meanwhile, according to agency theory, high capital reduces conflict between shareholders and management because the risk of failure is more manageable (Jordà et al., 2017) . Empirical findings indicate that an increase in the CAR ratio strengthens solvency and reduces systemic risk (Benbouzid et al., 2022; Gržeta et al., 2023; Nabila et al., 2023; Sudana et al., 2019).
H2: Capital adequacy (CAR) has a positive effect on bank financial stability.

Effect of Credit Risk on Financial Stability

According to agency theory, excessive risk-taking behavior can increase non-performing loans and weaken the stability of financial institutions (Ali & Puah, 2019) . In financial stability theory, an increase in NPLs reduces profitability and worsens a bank's capital position (Lepetit & Strobel, 2013) . Empirical research also finds that a high NPL ratio significantly reduces banking stability (Ghenimi et al., 2017; Naili & Lahrichi, 2022; Noveryanto & Yorinda, 2021; Violeta Ketaren & Mulyo Haryanto, 2020).
H3: Credit risk (NPL) has a negative effect on bank financial stability.

Effect of interest rate (BI Rate) on financial stability

According to monetary transmission theory, an increase in the benchmark interest rate raises funding costs and diminishes credit demand, which can adversely affect bank profitability (Mishkin, 1996) . Financial stability theory posits that fluctuations in interest rates influence bank liquidity and the quality of assets (Benbouzid et al., 2022) . Empirical studies indicate that rising interest rates lead to a decline in bank performance and stability across various nations (Andi et al., 2023; Davis et al., 2020; Manihuruk et al., 2024; Tran & Nguyen, 2020).
H4: Interest rate (BI Rate) has a negative effect on bank financial stability.

Effect of Inflation on financial stability

Monetary transmission theory suggests that elevated inflation diminishes purchasing power and heightens the risk of default, thereby undermining the financial positions of banks (Mishkin, 1996) . Financial stability theory asserts that inflationary pressures lead to a decrease in bank asset values and profitability (Allen & Wood, 2006) . Empirical investigations reveal that sustained inflation exacerbates the financial stability of banks in developing nations (Andi et al., 2023; Hamda & Sudarmawan, 2023; Joaqui-Barandica et al., 2021; D. R. Lestari & Suprayogi, 2020).
H5: Inflation has a negative effect on financial stability.

E-ISSN 3089-1566
Proceeding Accounting, Management, Economics Uniska Volume 2, 2025, pp 415-430
"The Role of Research in Economics, Management, Accounting to Realizing Sustainable Development"

Moderating Effect of Firm Size on the Relationship between Profitability and Financial Stability

Agency theory indicates that larger firms possess superior governance and oversight mechanisms for managing profits, which enhances stability (Ali & Puah, 2019) . Financial stability theory suggests that a larger size facilitates greater revenue diversification, thereby amplifying the impact of profitability on financial resilience (Gržeta et al., 2023) . Research demonstrates that the influence of profitability on stability is more pronounced in larger banks (Ahmed et al., 2023; Mahmood et al., 2019).

H6: Firm Size moderates on the Relationship between Profitability and Financial Stability.

Moderating Effect of Firm Size on the Relationship between Capital Adequacy and Financial Stability

In the context of agency theory, the size of a firm plays a crucial role in determining how effectively capital is utilized to alleviate conflicts of interest between managers and owners (Jordà et al., 2017) . According to financial stability theory, larger banks with robust capital reserves are more capable of sustaining liquidity and enduring external pressures (Benbouzid et al., 2022) . Empirical studies indicate that the positive correlation between Capital Adequacy Ratio (CAR) and stability is more pronounced in larger banks (Gržeta et al., 2023; Polizzi et al., 2020; Setiawati, 2020).

H7: Firm Size moderates on the Relationship between Capital Adequacy and Financial Stability.

Moderating Effect of Firm Size on the Relationship between Credit Risk and Financial Stability

Agency theory suggests that larger organizations typically possess superior risk management systems, which can help mitigate the effects of non-performing loans (Andrieu et al., 2018) . In line with financial stability theory, larger banks with diversified portfolios demonstrate greater resilience to fluctuations in non-performing loans (NPLs) (Tan & Floros, 2012) . Empirical evidence supports the notion that the adverse impact of credit risk on stability is less severe for larger banks (Ghenimi et al., 2017; Naili & Lahrichi, 2022).

H8: Firm Size moderates on the Relationship between Credit Risk and Financial Stability.

Moderating Effect of Firm Size on the Relationship between BI Rate and Financial Stability

According to monetary transmission theory, an increase in interest rates leads to higher funding costs and a decrease in credit demand (Mishkin, 1996) . Additionally, agency theory posits that larger banks with a variety of funding sources are better equipped to modify their financing strategies and lessen the effects of rising interest rates on stability (Benbouzid et al., 2022) . Research conducted by Davis et al. (2020); Lestari & Suprayogi (2020); Yudaruddin et al. (2023) reveals that larger banks exhibit greater resilience to changes in interest rates compared to smaller banks.

H9: Firm Size moderates on the Relationship between BI Rate and Financial Stability.

Moderating Effect of Firm Size on the Relationship between Inflation and Financial Stability

E-ISSN 3089-1566
Proceeding Accounting, Management, Economics Uniska Volume 2, 2025, pp 415-430
"The Role of Research in Economics, Management, Accounting to Realizing Sustainable Development"

According to monetary transmission theory, elevated inflation raises operational expenses and diminishes the capacity of borrowers to fulfill loan repayments (Mishkin, 1996) . Agency theory posits that larger banks characterized by robust governance and efficiency can alleviate the adverse effects of inflation on financial performance (Kanga et al., 2016). Additionally, research conducted by Joaqui-Barandica et al. (2021) revealed that the size of a firm lessens the impact of inflation on the financial risk faced by banks.
H10: Firm Size moderates on the Relationship between Profitability and Financial Stability.

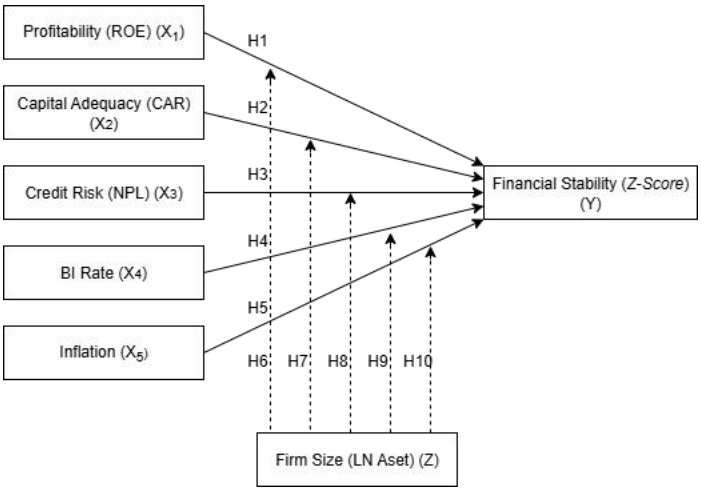

Figure 1. Model analysis

METHODS

This study uses a quantitative approach with panel data analysis to analyze the influence of internal and external factors on bank financial stability and the role of firm size as a moderating variable. This approach was chosen because it combines time and entity dimensions, resulting in more accurate and efficient estimates than a single data model (Ghozali, 2020).

Population and Sample

The population for this research encompasses all conventional banks that are listed on the Indonesia Stock Exchange (IDX) from 2020 to 2024. The sample was determined through purposive sampling based on the following criteria (Sugiyono, 2020):

Table 1. Sample Selection Procedure

Description	Total
Banking companies listed on the IDX	45
Less: Companies that are conventional banks	(3)
Less: Companies that publish complete annual financial reports during the period 2020-2024	-
Less: Companies that have complete research variable data	-
Final number of companies	42
Total firm-year (5years)	210

Source: *Indonesia Stock Exchange 2025*

Data Collection

To ensure transparency and replication of this study, it is based primarily on secondary data from publicly available and reliable sources. The data was obtained from official reports of Bank Indonesia (BI) and the Financial Services Authority (OJK), as well as annual financial reports of financial institutions (Bank Indonesia, 2024; OJK, 2024) . To obtain relevant financial and macroeconomic variables, the data collection process included careful documentation and literature review.

Variable Measurement

The operational definition, measurements, and rationales for selecting each variable are summarized in table 2.

Table 2. Variable Measurement

Variable	Measurement	Reasons
Financial Stability Z-Score (Y)	$\frac{\text{ROA} + \frac{\text{Equity}}{\text{Total Assets}}}{\sigma(\text{ROA})} \times 100\%$	Financial stability was chosen because it is the main indicator of a bank's resilience to bankruptcy risk. The Z-Score reflects a combination of profitability, capitalization, and financial performance volatility, which illustrates a bank's ability to withstand economic shocks. The higher the Z-Score, the lower the likelihood of default. This concept is widely used in global banking research as a primary measure of financial system stability (Gržeta et al., 2023; Lepetit & Strobel, 2013; Polizzi et al., 2020).
Profitabilitas (ROE) (X1)	$\frac{Net\ Income}{Total\ Equity} x\ 100\%$	The variable of profitability is expressed by ROE, which indicates the ability of a bank to generate profits from the capital at its disposal. High profitability reflects management efficiency in managing assets and increases the resistance to financial risks. Several previous studies indicated that ROE exerts a positive impact on the financial stability of a bank (Ali & Puah, 2019; Kanga et al., 2016; Tran & Nguyen, 2020).
Capital Adequacy (X2)	$\frac{\text{Total Capital}}{\text{Risk} - \text{Weight Assets}} \text{x}\ 100\%$	CAR is employed to measure the extent to which a bank's capital can cover asset risks and potential losses. Banks with a high capital ratio possess a greater capacity to absorb losses and maintain public confidence. This indicator is also used to evaluate the overall strength of the financial system (Benbouzid et al., 2022;

E-ISSN 3089-1566
Proceeding Accounting, Management, Economics Uniska **Volume 2, 2025, pp 415-430**

		Gržeta et al., 2023; Polizzi et al., 2020).
Credit Risk (NPL) (X3)	$\frac{Total\ NPL}{Total\ Credit} \times 100\%$	The NPL ratio is used to illustrate asset quality and the effectiveness of a bank's credit risk management. An increase in NPLs indicates a decline in credit quality, which can reduce profitability and threaten financial stability. The negative relationship between NPLs and bank stability has been demonstrated in several international studies (Andrieu et al., 2018; Ghenimi et al., 2017; Naili & Lahrichi, 2022).
BI Rate (X4)	BI benchmark interest rate (%)	The monetary policy is represented by the benchmark interest rate, which influences directly the cost of funds and net interest margins of banks. Accordingly, a rise in interest rates amplifies funding costs, suppresses credit demand, and may affect financial stability consequently. Previous studies have documented that changes in interest rates adverse banking performance and stability (Benbouzid et al., 2022; Davis et al., 2020; Mishkin, 1996).
Inflation (X5)	BI annual inflation rate (%)	Inflation is a macroeconomic variable that affects public purchasing power, asset quality, and bank income stability. Increased inflation may heighten credit risk and lower bank profitability. A number of studies identified the negative impact of inflation on bank stability, such as Joaqui-(Joaqui-Barandica et al., 2021; Kanga et al., 2016; Tran & Nguyen, 2020).
Firm Size (Z)	Ln (*Total Asset*)	Firm size was chosen as a moderating variable because banks with larger total assets generally have better risk diversification capabilities, access to funding, and operational efficiency. Large scale also helps strengthen the influence of profitability and capital on financial stability (Ahmed et al., 2023; Gržeta et al., 2023; Mahmood et al., 2019).

Data Analysis Techniques

This research applies panel data regression analysis to analyze how the conditions of the macroeconomy, credit risk, profitability, and capital adequacy influence financial stability in banks, as well as analyzes the moderating role of firm size. The model was chosen

E-ISSN 3089-1566
Proceeding Accounting, Management, Economics Uniska Volume 2, 2025, pp 415-430
"The Role of Research in Economics, Management, Accounting to Realizing Sustainable Development"

because panel data combines timeseries and cross-sectional dimensions for a more accurate estimate than that obtained from single-data models. According to Ghozali (2020) , the testing of classical assumptions was done particularly to find multicollinearity, and the results showed no inter-correlation of independent variables above 0.85. Testing of the best regression model criteria for this study (Common Effect, Fixed Effect, and Random Effect) was based on Chow, Hausman, and LM tests, respectively. According to Basuki & Prawoto (2019) all these tests were conducted at 5% significance level ($p < 0.05$) using EViews 12 software. According to (Sugiyono, 2020).

The multiple linear regression model equation used is as follows:

$$Y = \alpha + \beta1X1 + \beta2X2 + \beta3X3 + \beta4X4 + \beta5X5 + \varepsilon$$

Keterangan:

Y = Z-Score
α = Constant
β = Regression Coefficient
X1 = ROE
X2 = CAR
X3 = NPL
X4 = BI Rate
X5 = Inflation
ε = Standard Error

The Model Regression equation is:

$$Y = \alpha + \beta1X1 + \beta2X2 + \beta3X3 + \beta4X4 + \beta5X5 + \beta6(X1 \times Z) + \beta7(X2 \times Z) + \beta8(X3 \times Z) + \beta9(X4 \times Z) + \beta10(X5 \times Z) + \varepsilon$$

Keterangan:

Y = Z-Score
α = Constant
β = Regression Coefficient
X1 = ROE
X2 = CAR
X3 = NPL
X4 = BI Rate
X5 = Inflation
Z = Firm Size
ε = Standard Error

RESULTS

Table 3. Multicollinearity Test

Variable	ROE (X1)	CAR (X2)	NPL (X3)	BI Rate (X4)	Inflation (X5)
ROE (X1)	1.000000				
CAR (X2)	-0.020885	1.000000			
NPL (X3)	-0.159667	0.008688	1.000000		
BI Rate (X4)	0.036178	-0.067745	-0.032768	1.000000	
Inflation (X5)	0.007513	-0.019619	0.110261	0.331548	1.000000

E-ISSN 3089-1566
Proceeding Accounting, Management, Economics Uniska Volume 2, 2025, pp 415-430
"The Role of Research in Economics, Management, Accounting to Realizing Sustainable Development"

Source: *Processed data using Eviews12*

A multicollinearity assessment was performed to confirm the absence of significant relationships among independent variables that might disrupt the estimation outcomes. According to the findings presented in Table 3, the correlation coefficient among independent variables remained below the 0.85 threshold, leading to the conclusion that the model is devoid of multicollinearity. In studies utilizing panel data, separate evaluations of other classical assumptions such as heteroscedasticity, autocorrelation, and normality were not carried out, as the individual and time effects inherent in the panel model (both fixed and random effects) have already accounted for these variations (Basuki & Prawoto, 2019). Therefore, the multicollinearity assessment was deemed adequate to verify that the regression model adheres to the fundamental assumptions and is suitable for subsequent estimation (Sugiyono, 2020).

Tabel 4. Model Estimation Test

Regression Equation	Chow (p-value)	Hausman (p-value)	Lagrange Multiplier	Best Model
Before Moderation	0.0000	1.0000	0.0000	Random Effect Model
After Moderation	0.0000	1.0000	0.0000	Random Effect Model

Source: Processed data using Eviews12

The findings presented in Table 4 indicate that both prior to and following moderation, the Chow test produced a p-value of less than 0.05, thereby leading to the rejection of the Common Effect model. Furthermore, the Hausman test, which yielded a p-value exceeding 0.05, suggested that the Random Effect Model (REM) was more suitable than the Fixed Effect Model. Additionally, the Lagrange Multiplier test corroborated that the REM was superior to the Common Effect Model. Consequently, both before and after moderation, the panel data model employed was the Random Effect Model, as it is the most effective in capturing variations over time and across entities (Basuki & Prawoto, 2019; Benbouzid et al., 2022; Gržeta et al., 2023; Polizzi et al., 2020).

Tabel 5. Regression Results

Variable	Coefficient	Prob.	Effect	Decision
ROE → Z-Score	6.830153	0.0000	Positive Significant	Accepted
CAR → Z-Score	0,082299	0.2065	Not Significant	Rejected
NPL → Z-Score	-0.581151	0.7760	Not Significant	Rejected
BI Rate → Z-Score	-27.17524	0.0001	Negative Significant	Accepted
Inflasi → Z-Score	-1.407286	0.7828	Not Significant	Rejected
ROE*SIZE → Z-Score	2.361047	0.0123	Positive Significant	Accepted
CAR*SIZE → Z-Score	0.425884	0.0156	Positive Significant	Accepted
NPL*SIZE → Z-Score	-4.885589	0.5939	Not Significant	Rejected
BI Rate*SIZE → Z-Score	-7.181346	0.1111	Not Significant	Rejected
Inflation*SIZE → Z-Score	3.683552	0.2169	Not Significant	Rejected

Source: Processed data using Eviews12

DISCUSSION

E-ISSN 3089-1566
Proceeding Accounting, Management, Economics Uniska Volume 2, 2025, pp 415-430

Explanation of Discussion 1

Profitability (ROE) has a significant positive effect on bank financial stability (coefficient = 6.830153; p = 0.0000). This result indicates that the higher a bank's ability to generate profits from its equity, the stronger its resilience to risk. Based on agency theory, efficient management of shareholder capital increases investor confidence and reduces agency conflicts (Jensen et al., 1976). Meanwhile, financial stability theory explains that high profits strengthen capital and financial buffers (Allen & Wood, 2006) . This finding is consistent with research by (Ali & Puah, 2019; Polizzi et al., 2020; Tran & Nguyen, 2020) , which shows that profitability is a key determinant of bank financial stability in various countries.

Explanation of Discussion 2

Capital adequacy (CAR) shows a positive but insignificant relationship to financial stability (coefficient = 0.082299; p = 0.2065). Theoretically, financial stability theory emphasizes that capital serves as a risk buffer and increases depositor confidence, while agency theory states that strong capital can reduce excessive risk-taking behavior. However, these insignificant results suggest that other factors such as efficiency and risk structure may influence the relationship between CAR and stability (Jordà et al., 2017; Kanga et al., 2016) . Similar results were also found by Benbouzid et al. (2022) and Gržeta et al. (2023) , who confirmed that the effect of CAR on stability is highly dependent on economic conditions and the implementation of Basel III policies.

Explanation of Discussion 3

Credit risk (NPL) showed a negative but insignificant effect on bank financial stability (coefficient = -0.581151; p = 0.7760). Based on agency theory, increasing NPLs may reflect weak management oversight of non-performing loans, which threaten stability. Meanwhile, financial stability theory states that high credit risk erodes bank profitability and capital. These results align with research by (Andrieu et al., 2018; Naili & Lahrichi, 2022) , which found that the effect of NPLs on stability is not always significant, depending on the risk mitigation system and macroeconomic conditions. However, research by Ghenimi et al. (2017) and Setiawati (2020) still confirms that increasing NPLs in the long term can reduce bank financial resilience.

Explanation of Discussion 4

The BI Rate has a significant negative effect on bank financial stability (coefficient = -27.17524; p = 0.0001). These results support the monetary transmission theory, which states that increases in benchmark interest rates narrow the net interest margin and suppress bank liquidity (Mishkin, 1996) . Simultaneously, financial stability theory explains that interest rate pressures can reduce banks' ability to maintain capital and profitability. These findings align with studies by Anjom & Faruq (2023); Benbouzid et al., (2022); Davis et al., (2020); Lestari & Suprayogi (2020) , which show that rising interest rates pose systemic risks to the banking sector.

Explanation of Discussion 5

E-ISSN 3089-1566
Proceeding Accounting, Management, Economics Uniska **Volume 2, 2025, pp 415-430**

Inflation exerts a negative yet statistically insignificant influence on the financial stability of banks (coefficient = -1.407286; p = 0.7828). As per the monetary transmission theory, elevated inflation can diminish purchasing power and heighten credit risk. Conversely, the financial stability theory posits that inflation may suppress profits and undermine the capital position. This finding is consistent with the studies conducted by (Dewi & Saraswati (2024); Joaqui-Barandica et al. (2021); Setiawati (2020); Tran & Nguyen (2020), which demonstrate that the impact of inflation on stability is contingent upon the economic conditions of a nation. Consequently, the influence of inflation in Indonesia appears to be weak during the period from 2020 to 2024, as price stability is relatively upheld through cautious monetary policy.

Explanation of Discussion 6

The ROE*SIZE interaction has a significant positive effect on financial stability (coefficient = 2.361047; p = 0.0123). These results indicate that bank size strengthens the positive effect of profitability on financial resilience. Based on agency theory, large banks have better governance and efficiency, while financial stability theory emphasizes diversification and stronger capital buffers at a larger scale. These results are consistent with research by Ahmed et al. (2023) and Gržeta et al. (2023), which found that size strengthens the impact of profitability on stability in the global banking sector.

Explanation of Discussion 7

The interaction between CAR and SIZE demonstrates a notable positive influence on financial stability (coefficient = 0.425884; p = 0.0156). According to financial stability theory, larger banks with robust capital reserves possess an enhanced ability to withstand financial shocks. Concurrently, agency theory suggests that larger banks are generally more adept at capital management. These findings corroborate the work of Polizzi et al. (2020) and (Gržeta et al., 2023) , which indicated that the size of a company can amplify the favorable correlation between capital and stability.

Explanation of Discussion 8

The interaction of NPL and SIZE is found to be insignificant (coefficient = -4.885589; p = 0.5939), suggesting that the size of a bank does not mitigate the effect of credit risk on stability. Agency theory posits that larger banks should implement more efficient risk management systems; however, financial stability theory indicates that the adverse impact of NPLs may not be counterbalanced solely by the size of assets. This outcome aligns with the research conducted by Andrieu et al. (2018) dan Naili & Lahrichi (2022) which revealed that the connection between NPLs and stability frequently hinges on the structure of the portfolio and the efficiency of operations.

Explanation of Discussion 9

The interaction between BI Rate and SIZE produced a negative but insignificant result (coefficient = -7.181346; p = 0.1111). The monetary transmission theory considers that the interest rate hike impacts all types of banks, whether big or small, while the agency theory suggests that big banks are in a position to be more resistant to interest rate pressures. However, this result aligns with the studies of Davis et al. (2020) and Benbouzid et al. (2022)

E-ISSN 3089-1566
Proceeding Accounting, Management, Economics Uniska Volume 2, 2025, pp 415-430
"The Role of Research in Economics, Management, Accounting to Realizing Sustainable Development"

Benbouzid et al. (2022); Davis et al. (2020); Lestari & Suprayogi (2020); Yudaruddin et al. (2023), stating that the impact of interest rates on stability is systemic and thus difficult to internalize based on one's size.

Explanation of Discussion 10

The interaction between Inflation and SIZE was positive but insignificant (coefficient = 3.683552; p = 0.2169). According to monetary transmission theory, inflation could reduce the real income of banks, but the adjustment ability may be higher for larger banks. At the same time, financial stability theory postulates that the size of banks facilitates better robustness to economic fluctuation. However, these empirical results are not significant and therefore support the arguments of (Joaqui-Barandica et al., 2021; Kanga et al., 2016; D. R. Lestari & Suprayogi, 2020), stating that such a moderating role of size on inflation is context-specific and dependent on domestic economic conditions.

CONCLUSION

The results showed that the Random Effects Model was the best model based on the Chow test, the Hausman test, and the Lagrange Multiplier test. The R^2 value increased from 0.250824 to 0.274906 after being moderated by firm size (SIZE), indicating that the SIZE variable improves the model's ability to explain banking financial stability.

Partially, profitability (ROE) had a positive and significant effect on financial stability, in line with agency theory Jensen et al. (1976) and financial stability theory (Allen & Wood, 2006). CAR and NPL did not have a significant effect, indicating that the effectiveness of capital and credit risk management is largely determined by each bank's internal policies (Anggraini & Aisjah, 2024; Setiawati, 2020). Based on monetary transmission theory Mishkin (1996), the BI Rate had a significant negative effect, while inflation had no significant effect (Hidayati et al., 2025). The SIZE variable has been shown to strengthen the influence of ROE and CAR on stability, but does not moderate the influence of NPL, the BI Rate, or inflation (Akmal et al., 2025; Alamsyah et al., 2023). Overall, profitability and capital adequacy, especially in large banks with strong asset and funding structures, are the main determinants of financial stability in Indonesia.

Implications

These findings strengthen agency theory, monetary transmission, and financial stability, which emphasize that both internal and external factors play a crucial role in maintaining banking system resilience (Allen & Wood, 2006; Jensen et al., 1976; Mishkin, 1996). Practically, banks need to improve profitability and capital efficiency, while the Financial Services Authority (OJK) and Bank Indonesia need to consider these findings in formulating monetary policy and supervising small banks, which are more vulnerable to interest rate fluctuations.

Limitations

This study is limited to the 2020–2024 period, uses the Z-Score as the sole indicator of financial stability, and only considers two macroeconomic variables: the BI Rate and

inflation. This does not fully reflect the complexity of systemic risk and the long-term dynamics of the banking sector (Allen & Wood, 2006; E. I. Lestari & Berniz, 2024).

Recommendations

Subsequent research is recommended to extend the observation period, add other macroeconomic variables such as exchange rates, economic growth, or market volatility, and use the Dynamic Panel GMM method to improve estimation accuracy and reduce potential endogeneity bias (Akmal et al., 2025; Anggraini & Aisjah, 2024).

REFERENCES

Ahmed, A. M., Sharif, N. A., Ali, M. N., & Hágen, I. (2023). Effect of Firm Size on the Association between Capital Structure and Profitability. *Sustainability (Switzerland)*, *15*(14). https://doi.org/10.3390/su151411196

Akmal, M. R., Pribadi, M. I., & Anshari, R. (2025). Pengaruh Ukuran Perusahaan dan Risiko Kredit terhadap Stabilitas Keuangan Bank di Indonesia Periode 2019-2023. *GEMILANG: Jurnal Manajemen Dan Akuntansi*, *5*(2), 766–782. https://doi.org/10.56910/gemilang.v5i2.2570

Alamsyah, M. F., Akuba, A., & Bimbing, M. A. G. (2023). Pengaruh Ukuran Perusahaan TerhadapNilai Perusahaan Melalui Struktur Modal Sebagai Variabel Mediasi. *Jurnal Fokus Manajemen Bisnis*, *13*(1), 91–105. https://doi.org/10.12928/fokus.v13i1.7580

Ali, M., & Puah, C. H. (2019). The internal determinants of bank profitability and stability: An insight from banking sector of Pakistan. *Management Research Review*, *42*(1), 49–67. https://doi.org/10.1108/MRR-04-2017-0103

Allen, W. A., & Wood, G. (2006). Defining and achieving financial stability. *Journal of Financial Stability*, *2*(2), 152–172. https://doi.org/10.1016/j.jfs.2005.10.001

Altman, E. I. (1968). FINANCIAL RATIOS, DISCRIMINANT ANALYSIS AND THE PREDICTION OF CORPORATE BANKRUPTCY. *The Journal of Finance*, *23*(4), 589–609. https://doi.org/10.1111/j.1540-6261.1968.tb00843.x

Andi, B. Q., Heru, K., & Hikmah, K. (2023). Pengaruh Kinerja Perbankan dan Makro Ekonomi terhadap Stabilitas Perbankan pada Bank Pembangunan Daerah di Indonesia tahun 2017-2022. *Strata Social and Humanities Studies*, *1*(2), 156–168. https://doi.org/10.59631/sshs.v1i2.111

Andrieu, G., Staglianò, R., & van der Zwan, P. (2018). Bank debt and trade credit for SMEs in Europe: firm-, industry-, and country-level determinants. *Small Business Economics*, *51*(1), 245–264. https://doi.org/10.1007/s11187-017-9926-y

Anggraini, M. R., & Aisjah, S. (2024). Pengaruh Risiko Kredit, Risiko Likuiditas, Dan Tingkat Kecukupan Modal Terhadap Profitabilitas. *Jurnal Management Risiko Dan Keuangan*, *3*(1), 87–98. https://doi.org/10.21776/jmrk.2024.03.1.08

Anjom, W., & Faruq, A. T. M. O. (2023). Financial Stability Analysis of Islamic Banks in Bangladesh. *European Journal of Business and Management Research*, *8*(3), 320–326. https://doi.org/10.24018/ejbmr.2023.8.3.1953

Badan Pusat Statistik. (2025). Pertumbuhan Ekonomi Indonesia Triwulan IV-2024. In *Badan Pusat Statistik* (Issue 17).

Bank Indonesia. (2024). *Kajian Stabilitas Keuangan No 43*.

Basuki, A. T., & Prawoto, N. (2019). *Analisis Regresi dalam Penelitian Ekonomi dan Bisnis*. RajaGrafindo Persada.

Benbouzid, N., Kumar, A., Mallick, S. K., Sousa, R. M., & Stojanovic, A. (2022). Bank credit risk and macro-prudential policies: Role of counter-cyclical capital buffer. *Journal of Financial Stability*, *63*. https://doi.org/10.1016/j.jfs.2022.101084

Davis, E. P., Karim, D., & Noel, D. (2020). The bank capital-competition-risk nexus – A global perspective. *Journal of International Financial Markets, Institutions and Money*, *65*. https://doi.org/10.1016/j.intfin.2019.101169

Dewi, J. S., & Saraswati, B. D. (2024). Determinan stabilitas perbankan di Indonesia: Pendekatan makro dan mikro prudensial. *Journal of Business & Banking*, *13*(2), 305–320. https://doi.org/10.14414/jbb.v13i2.4470

Ghenimi, A., Chaibi, H., & Omri, M. A. B. (2017). The effects of liquidity risk and credit risk on bank stability: Evidence from the MENA region. In *Borsa Istanbul Review* (Vol. 17, Issue 4, pp. 238–248). Borsa Istanbul Anonim Sirketi. https://doi.org/10.1016/j.bir.2017.05.002

Ghozali, I. (2020). *25 Grand Theory Ilmu Manajemen, Akuntansi Dan Bisnis*. Yoga Pratama.

Gržeta, I., Žiković, S., & Tomas Žiković, I. (2023). Size matters: analyzing bank profitability and efficiency under the Basel III framework. *Financial Innovation*, *9*(1). https://doi.org/10.1186/s40854-022-00412-y

Gujarati, D. N., & Porter, D. C. (2006). *Basic Economics* (15th ed.). Douglas Reiner.

Hamda, I., & Sudarmawan, B. N. (2023). *Islamic Review: Jurnal Riset dan Kajian Keislaman The Effect of Macroeconomics Variables on Islamic Bank Stability During COVID-19 Pandemic: Evidence From Indonesia*. https://doi.org/10.35878/islamicreview.v12.i1.682

Hidayati, N., Badina, T., & Fatoni, A. (2025). Pengaruh Faktor Internal Bank dan Makroekonomi Terhadap Stabilitas Bank Perekonomian Rakyat Syarah. *Jurnal Masharif Al-Syariah: Jurnal Ekonomi Dan Perbankan Syariah*, *10*(1). https://doi.org/10.30651/jms.v10i1.24933

Jensen, M. C., Meckling, W. H., Benston, G., Canes, M., Henderson, D., Leffler, K., Long, J., Smith, C., Thompson, R., Watts, R., & Zimmerman, J. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. In *Journal of Financial Economics* (Issue 4). Harvard University Press. http://hupress.harvard.edu/catalog/JENTHF.html

Joaqui-Barandica, O., Manotas-Duque, D. F., & Uribe-Gil, J. M. (2021). *"Commonality, Macroeconomic Factors and Banking Profitability"* (13). www.ub.edu/irea/

Jordà, Ò., Richter, B., Schularick, M., Taylor, A. M., & Jordà, O. (2017). *Bank Capital Redux: Solvency, Liquidity, and Crisis Bank Capital Redux: Solvency, Liquidity, and Crisis`Oscar*. http://www.frbsf.org/economic-research/publications/working-papers/wp2017-06.pdf

Kanga, D., Murinde, V., & Soumare, I. (2016). *especially Eddie Dekel and Akassi Sandrine Kablan; and the Department of Finance Staff Seminar, University of Birmingham, UK. Also, we thank seminar participants at the African Development Bank* (Vol. 22).

Lepetit, L., & Strobel, F. (2013). Bank insolvency risk and time-varying Z-score measures. *Journal of International Financial Markets, Institutions and Money*, *25*, 73–87. https://doi.org/10.1016/j.intfin.2013.01.004

Lestari, D. R., & Suprayogi, N. (2020). PENGARUH FAKTOR INTERNAL DAN FAKTOR MAKROEKONOMI TERHADAP STABILITAS BANK UMUM SYARIAH DI INDONESIA PERIODE 2012-2018. *Jurnal Ekonomi Syariah Teori Dan Terapan*, *7*(11), 2062–2073. https://doi.org/10.20473/vol7iss202011pp2062-2073

Lestari, E. I., & Berniz, Y. M. (2024). Pengaruh Persaingan, Ukuran Perusahaan, dan Leverage Terhadap Stabilitas Bank di Indonesia. *Jurnal Bisnis Dan Manajemen)*, *10*(1).

Mahmood, F., Han, D., Ali, N., Mubeen, R., & Shahzad, U. (2019). Moderating effects of firm size and leverage on the working capital finance-profitability relationship: Evidence from China. *Sustainability (Switzerland)*, *11*(7). https://doi.org/10.3390/su11072029

Manihuruk, F. E., Sari, A., Sitohang, G. S., & Hasyim Hasyim. (2024). Pengaruh Faktor-Faktor Ekonomi Makro Terhadap Stabilitas Perbankan Di Indonesia. *Akuntansi*, *3*(2), 55–68. https://doi.org/10.55606/akuntansi.v3i2.1987

Mishkin, Frederic. S. (1996). The Channels of Monetary Transmission Lessons for Monetary Policy Frederic S Mishkin. *National Bureu of Economic Research*.

Nabila, A., Miranti……the, T., Stability, S. B., Zahra, A., & Miranti, T. (2023). THE SHARIA BANK STABILITY: HOW FINTECH AND FINANCIAL RATIO FIXED IT? *Research Journal on Islamic Finance*, *09*. http//jurnal.radenfatah.ac.id/index.php/i-finance

Naili, M., & Lahrichi, Y. (2022). Banks' credit risk, systematic determinants and specific factors: recent evidence from emerging markets. *Heliyon*, *8*(2). https://doi.org/10.1016/j.heliyon.2022.e08960

Noveryanto, B., & Yorinda, I. A. (2021). Fungsi Early Warning Indicator (EWI) Pada Pemantauan Kredit Dengan Klasifikasi Loan at Risk Sebagai Salah Satu Faktor Penentu Profitabilitas Bank di Indonesia. *Jurnal Kajian Ekonomi Dan Kebijakan Publik*, *7*(1). www.iaiglobal.or.id

Otoritas Jasa Keuangan. (2024, December 13). *Siaran Pers: Sektor Jasa Keuangan Yang Resilient Untuk Mendukung Pertumbuhan Ekonomi Nasional*. Ojk.Go.Id. https://ojk.go.id/id/berita-dan-kegiatan/siaran-pers/Pages/RDKB-November-2024.aspx

Polizzi, S., Scannella, E., & Suárez, N. (2020). The Role of Capital and Liquidity in Bank Lending: Are Banks Safer? *Global Policy*, *11*(S1), 28–38. https://doi.org/10.1111/1758-5899.12750

Setiawati, R. I. S. (2020). ANALISIS PENGARUH FAKTOR-FAKTOR FUNDAMENTAL KINERJA BANK DAN MAKRO EKONOMI TERHADAP STABILITAS PERBANKAN DI INDONESIA. *Jurnal Ilmiah Bisnis Dan Ekonomi Asia*, *14*(2), 123–132. https://doi.org/10.32812/jibeka.v14i2.194

Sudana, Marlina, L., Tinggi, S., Islam, A., & Bandung, P. (2019). *PENGARUH KECUKUPAN MODAL DAN EFISIENSI OPERASIONAL TERHADAP PROFITABILITAS PADA BANK CIMB NIAGA SYARIAH*. *4*(1).

Sugiyono. (2020). *Metode Penelitian Kuantitatif*. CV Alfabeta.

Tan, A. Y., & Floros, C. (2012). Bank profitability and inflation: the case of China. *Journal of Economic Studies*, *39*, 6. http://eprints.hud.ac.uk/id/eprint/17221/http://eprints.hud.ac.uk/

Tran, S. H., & Nguyen, L. T. (2020). Financial Development, Business Cycle and Bank Risk in Southeast Asian Countries. *Journal of Asian Finance, Economics and Business*, *7*(3), 127–135. https://doi.org/10.13106/jafeb.2020.vol7.no3.127

Violeta Ketaren, E., & Mulyo Haryanto, A. (2020). PENGARUH KINERJA KEUANGAN TERHADAP STABILITAS PERBANKAN YANG TERDAFTAR DI BURSA EFEK INDONESIA (Studi Kasus pada Bank yang Terdaftar di BEI Tahun 2014-2018). *DIPONEGORO JOURNAL OF MANAGEMENT*, *9*(2), 1–13. http://ejournal-s1.undip.ac.id/index.php/dbr

Widyastuti, H., Andriyani, K. A., & Leon, F. M. (2021). DAMPAK MANAJEMEN RISIKO PADA KINERJA KEUANGAN BANK UMUM KONVENSIONAL DI INDONESIA. *Jurnal Magister Akuntansi Trisakti*, *8*(1), 29–44. https://doi.org/10.25105/jmat.v8i1.8148

Yudaruddin, R., soedarmono, wahyoe, Nugroho, B. A., Fitrian, Z., Mardiany, M., Purnomo, A. H., & Santi, E. N. (2023). Financial technology and bank stability in an emerging market economy. *Heliyon*, *9*(5). https://doi.org/10.1016/j.heliyon.2023.e16183