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THE INFLUENCE OF CREDIT RISK AND PROFITABILITY ON THE FINANCIAL STABILITY OF BANKS IN INDONESIA FOR THE PERIOD 2019-2023

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Abstract. *This study aims to investigate the effect of credit risk and profitability on the financial stability of banks listed on ASBANDA and the Indonesia Stock Exchange in 2019 - 2023. The population used in this study consisted of 47 banks listed on ASBANDA and the Indonesia Stock Exchange. The method used in sampling is Purposive Sampling. The sample obtained based on the criteria was 47 companies with the observation period 2019 - 2023, so the total observation data was 235 data. The data analysis technique used in this study uses panel data. In this study credit risk is measured using Non Performing loans (NPL), Profitability using Return On Equity (ROA), and bank financial stability ZScore. The results showed that credit risk has no significant effect on bank financial stability. Profitability has a positive and significant effect on bank financial stability.*

Keywords: *Bank Stability, Credit Risk, Profitability.*

1. INTRODUCTION

The banking sector plays a crucial role in efforts to increase a country's economic growth. The efficiency and effectiveness of the banking and financial system plays an important role for the development of a country, the role of the banking sector has become an effective and reliable tool in economic development, where the role of the banking sector is not limited to the activities it carries out, but rather the creation of the right environment for economic development (Saleh & Paz, 2023).

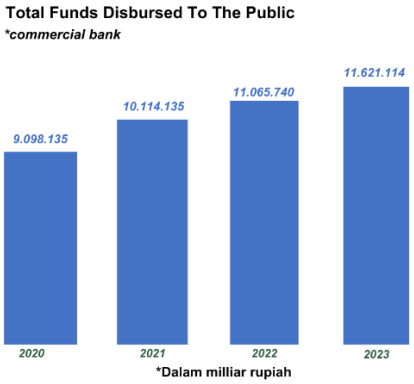

Figure 1 Indonesian Banking Statistics 2023
(Source: Otoritas Jasa Keuangan)

Bank financial stability refers to the condition of a country's financial system functioning optimally and efficiently, and has resilience to both internal and external risks. Therefore, proper financing management can support economic growth while maintaining national economic stability Lestari & Berniz, (2024) Instability in the banking

sector experienced by individual banks can have an impact on the instability of the banking system as a whole and will ultimately disrupt the stability of the banking financial system (Pitasari et al., 2016). Poor bank stability can also worsen the economic conditions of a country because banks cannot carry out their financial intermediary function effectively, through the financial intermediary function banks have an important role in realizing economic growth, income distribution, poverty reduction and financial system stability (Azwar, 2017) .

Credit risk, namely, the risk arising from the inability of customers or other parties to fulfill their obligations to the company (POJK Nomor 6/POJK.04, 2021). To measure credit risk in banking companies, the Non Performing Loan (NPL) ratio is used, which is a ratio that assesses credit risk related to non-payment of obligations by customers or the possibility that debtors cannot repay their debts (Irawati et al., 2019). (My & Quoc, (2022) said that non-performing loans due to failure of obligations by creditors increase the financial stability of banks, competitive factors in the banking industry and changes in the global economy make effective credit risk management in order to reduce loan losses to improve long-term financial stability of banks.

Based on research revealed by Fatoni, (2022) on the 6 largest Islamic banking companies which shows that credit risk has a significant positive effect on bank financial stability, this research is in line with research conducted by Ghenimi et al., (2017); Sri Setiawati, (2020) while the results of research by Dewi & Saraswati, (2024); Dwinanda & Sulistyowati, (2021); Febriani & Dewi Yuniarti, (2022); Violeta Ketaren & Mulyo Haryanto, (2020) show a negative and significant correlation of credit risk on bank financial stability. Different results were revealed by Fatoni & Sidiq, (2019) which stated that credit risk has no effect on bank financial stability.

Another factor that affects the financial stability of banks is profitability. Profitability is a ratio that describes how well the company makes sales and returns on its expenses, shows how much profit the company makes each year and sees whether the company has strong prospects in the future (Derizkyo Naupal et al., 2023). A favorable level of profitability is a sign of effective financial management. Companies can experience large financial losses as a result of this on a regular basis, and bankruptcy can occur (Derizkyo Naupal et al., 2023). (Jiang et al., 2023) found that an increase in profitability is associated with a decrease in bank risk, which implies an increase in the stability of the bank. Higher profitability tends to support the overall financial stability of the bank as it can withstand negative shocks and contribute to the overall economy as it can serve as a financial reserve to cover potential future losses or uncertainties (Tibebe & Gujral, 2022). Profitability can serve as a tool to measure the efficiency of a company and the indicator of profitability for banks is Return on Assets (ROA) (Ghofirin & Susesti, 2023).

Research conducted by Heniwati, (2019) indicates that profitability has a positive and significant effect on bank financial stability. The results of this study are also in line with the findings of (Kasri & Azzahra, 2020; Nguyen & Le, 2022). Meanwhile, other studies reveal different results, research conducted by Nidyanti & Kustinah, (2024) states that profitability has a significant negative effect on bank financial stability. Different results are also shown in the research of Marsuki et al., (2022) where profitability does not affect banking stability.

This research update expands the scope of previous research by adding an analysis of regional development banks (BPD) for the 2019-2023 period, in order to gain a more comprehensive understanding of the dynamics of financial system stability in Indonesia. Therefore, the purpose of this study is to re-test the effect of credit risk, as measured by Non-Performing Loan (NPL), and profitability as measured by Return on Assets (ROA), on bank financial stability as measured by Z-score in Commercial Banks and Regional Development Banks in Indonesia.

2. LITERATURE REVIEW

2.1 Financial Intermediation Theory

The theory of financial intermediation put forward by Gurley & Shaw, (1956) discusses the important role of banking where banks have contributed to the economy of a country with intermediation tasks, namely the process of channeling funds from parties with excess funds to parties in need of funding, in this case credit loans. Banking has an important role in the economy, namely to facilitate financing, achieve financial stability and as an implementation of monetary policy, the health level of banks needs to be maintained in order to maintain the financial stability of banks. Credit risk is the potential change in net income and capital market value due to the failure of customers to repay loans (My & Quoc, 2022). Central banks agree that bank credit risk, as indicated by the amount of non-performing loans, is the main cause of financial sector problems during the financial crisis so that credit risk as the origin of the financial crisis can be seen with a high level (NPL) of a bank can lead to the financial stability of the bank (Naili & Lahrichi, 2022).

2.2 Signalling Theory

Signalling Theory or signal theory was developed by Ross, (1977) which states that company executives have better information about their company will be encouraged to convey this information to potential investors or users of financial statements. Signal theory explains how a company should signal to users of financial statements to obtain information through financial statements that they apply conservatism accounting policies that produce higher quality earnings. If the profit reported by the company increases, this information can be categorized as a good signal because it indicates the company's good condition. Conversely, if the reported profit decreases, the company is in bad condition so it is considered a bad signal.

3. RESEARCH METHODS

3.1 Research Data

A quantitative approach is used to examine the effect of credit risk and profitability on financial stability. The Archival Research method allows researchers to access well-documented historical company data, such as annual financial reports, auditor reports, and other company records (Moers, 2007).

3.2 Population and Sample

The population of this study includes individuals or items that meet specific criteria set by researchers for more in-depth examination and analysis. The sample was taken using purposive sampling technique, which is a sample selection method based on certain considerations, criteria, or characteristics (Sugiyono, 2013). The sample consists of regional development bank companies and conventional commercial banks in Indonesia during the 2019-2023 period.

Table 3.1 Research Sample Screening with Purposive Sampling Technique

Criteria	Total
Conventional Regional Development Bank (BPD) registered with the Regional Development Bank Association (Asbanda)	22
Conventional Commercial Banks listed on the main board of the Indonesia Stock Exchange	25
Conventional Commercial Banks on BEI and Regional Development Banks (BPD) on ASBANDA which submit annual financial reports for the 2019-2023 period	47

Number of Samples 47 x 5 Years	**235**

3.3 Operational Definition and Variable Measurement

3.3.1 Bank Financial Stability

Banking financial stability is closely related to overall financial conditions. Bank stability is measured based on the level of health and efficiency of the banking system in channeling financing to people who need funds in the form of credit. To assess bank stability, the Z-score variable is used, which is traditionally used as an indicator of banking risk (Yurida et al., 2023).

$$Z - score = \frac{ROA + CAR}{\sigma ROA}$$

Description:

Z-score = Bank Financial Stability ROA = Return On Asset
CAR = Capital Adequacy Ratio
σROA = Standart Deviation of Return on Asset

3.3.2 Credit Risk

Credit risk is the potential change in net income and capital market value due to a customer's failure to repay a loan (Naili & Lahrichi, 2022).

$$NPL = \frac{Total\ non\ performing\ loan}{Total\ loans} x100\%$$

3.3.3 Profitability

Profitability reflects the capacity of an entity to earn profits from one period to the next. According to Cahyani & Sitohang, (2020) one of the company's measures to generate profits is the profitability ratio. This ratio uses (ROA) to measure how effectively revenue is earned from sales and investment. In this study, ROA is used as an indicator of profitability. The calculation model according to Cahyani & Sitohang, (2020) is:

$$ROA = \frac{Net\ Profit\ After\ Tax}{Total\ Assets} x100\%$$

3.4 Data Collection and Data Analysis Techniques

This study collects data through the documentation method, namely by collecting data taken from the company's annual financial statements. The data is related to the variables studied and is sourced from the official website of each company. The use of descriptive data analysis in research aims to explain the research variables, making it easier to understand each of these variables (Lelo & Amalo, 2021).

3.5 Panel Data Regression Analysis

According to Ramdan & Bustomi, (2023) panel data regression acts as a foundation in this research model by measuring similar cross-sectional data units over several periods, Panel data regression allows combining cross-sectional and time-series data. Thus, panel data is a collection of observations taken from several individuals over time.

$$Y = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \varepsilon_{it}$$

Descriptions:

Y = Bank Financial Stability
β_0 = Constant
β_1, β_2, = Independent Variable Regression Coefficient X_1 = Credit Risk
X_2 = Profitability
i = Company
t = Timr
ε = Error

Panel data regression analysis can be done in mainly three ways:

3.5.1 Common Effect Model (CEM)

CEM assumes that the intercept and slope values of each variable are consistent for all units in the time series and cross-section. Models without individual effects (combined effects) are approaches that integrate all time series and cross- sectional data, then apply the OLS method to estimate the parameters (Ramdan & Bustomi, 2023).

3.5.2 Fixed Effect Model (FEM)

FEM is applied to estimate panel data by utilizing dummy variables that reflect differences between individuals, assuming that the regression coefficients remain the same across individuals over time. One way to estimate parameters using FEM is through the Least Squares Dummy Variable (LSDV) method, the LSDV method uses linear regression with an ordinary least squares (OLS) approach in a model that includes dummy variables to capture variation between individuals and time (Hidayah, 2023).

3.5.3 Random Effect Model (REM)

The regression method called REM utilizes the generalized Least Square (GLS) approach to calculate the error in the regression model. Individual effects are treated as random variables with their random effects estimated based on the REM method, unlike the FEM technique which considers them as random components of the estimation error coefficients that cannot be distinguished from independently stated variables. Ramdan & Bustomi opinion, (2023) the tools used to select the three models are:

3.5.4 Selection Method of Panel Data Regression Model

1. Chow Test

The best strategy that combines FEM and CEM in analyzing panel data regression can be identified through the Chow test. This test aims to evaluate the alternative hypothesis (H1) which states that the appropriate panel data regression model is FEM. The hypotheses tested in the Chow test are:

H0: Model used CEM

H1: Model used FEM

When the $chow$ > (n-1),(nT-n-K) or p-value < α, then H0 is rejected, that the FEM is the best. If the CEM is selected, the next step is to perform the Lagrange Multiplier test. On the other hand, if the FEM is identified, the next step is to conduct the Hausman test.

2. Hausman Test

The Hausman test serves to determine the more appropriate model between REM and FEM in panel data regression analysis. Meanwhile, the Chow Test is conducted with reference to the alternative hypothesis (H1) indicating that the appropriate model for panel data regression is the FEM model. The following is the hausman test hypothesis:

H0: The model used is REM

H1: Model used FEM

In rejecting H0, there must be sufficient evidence, according to the Hausman statistic spread chi-square, if the χ 2 value of the test results is greater than χ 2 (k,α) (where K is the total of predictor variables) or if the p-value is smaller than α.

3.6 Classical Assumption Test

3.6.1 Heteroscedasticity Test

The opinion of Setya Budi et al., (2024) in the regression model, the fulfillment of the

conditions is considered successful if the residual variance between observations has the same value, known as homoscedasticity. If the residual variance remains stable across the entire range of predicted values, this is also called homoscedasticity. Conversely, if the variance varies, this condition is known as heteroscedasticity. Thus, if the test results show a value above 0.05, it can be concluded that there is no heteroscedasticity.

3.6.2 Multicollinearity Test

The multicollinearity test aims to determine whether there is a significant linear relationship between two or more independent variables in the regression model. This process is done by analyzing the correlation matrix among the independent variables. If a correlation coefficient of 0.8 or more is found between two or more independent variables, this indicates the presence of multicollinearity in the data (Alviani, 2021).

3.6.3 Autocorrelation Test

The autocorrelation test serves to evaluate whether there is a correlation between successive observations in a data, both in the context of time series data and cross-sectional data. Autocorrelation can be detected using the serial correlation method. If the probability value of the test is less than 0.05 (a commonly used significance level), this indicates the presence of an autocorrelation problem (Alviani, 2021).

3.7 Hypothesis Test

3.7.1 Test t

The partial t test, also known as the hypothesis test, is used to show that the explanatory variable partially affects the dependent variable. This test seeks to ascertain whether the influence of the independent variable on the dependent is significant or not. A two-way test with a large enough level is used to conduct this test, namely α = 0.05 (5%). The following are the test criteria: this test is carried out using a two-way test with a significant level. α = 0,05 (5%).

The test criteria are as follows: (i) If the significance value> 0.05, it means that the independent variable has no significant effect on the dependent variable. (ii) If the significance value is ≤ 0.05, it means that the independent variable has a significant effect on the dependent variable (Laili, 2021).

4. RESULTS AND DISCUSSION

4.1 Descriptive Statistics

Data statistics are used to provide an overview of average information (mean), standard deviation, highest value (maximum), and lowest value (minimum). The following table shows the results of descriptive statistical analysis:

Table 4.1 Descriptive Statistics

	N	Minimum	Maximum	Mean
ZSCORE	235	0,441	203,55	50,10
NPL	235	-0,000	0,049	0,011
ROA	235	-1,589	0,600	0,017

Descriptive statistical analysis was conducted on the research variables, namely ZScore (Bank Financial Stability) (Y) as the dependent variable, as well as Credit Risk (NPL) (X1) and Profitability (ROA) (X2) as independent variables. The calculated statistical parameters include Maximum, Minimum, Mean, and Standard Deviation values. Details of the analysis results are presented below:

1. ZScore of Bank Financial Stability

The descriptive statistical analysis shows that the ZScore ranges from 0.44 (lowest, recorded by Bank Artha Graha Internasional in 2020) to 203.55 (highest, recorded by

Bank Kaltimtara in 2023). The mean value is 50.10.

2. Credit Risk

The Credit Risk variable, with 235 observations, has a minimum value of -0.001 (Bank Sultra in 2021) and a maximum value of 0.049 (Bank Victoria Internasional Tbk in 2019). The mean value is 0.011.

3. Profitability

Based on descriptive statistical testing, the profitability variable is known to have a total (N) of 235 then the lowest value result of -1.589 is found in Bank Jago Tbk in 2019 and the highest value of 0.600 is found in Bank Artha Graha Internasional Tbk in 2023. The mean value is 0.017.

4.2 Panel Data Regression Model Selection

In panel data analysis, there are three commonly used approaches: fixed effect model (FEM), random effect model (REM), and common effect model (CEM) (Ghatak & Das, 2019). These three models offer different ways of treating variation between units.

In determining the most appropriate model between CEM and FEM in panel data analysis Hutagalung & Darnius, (2022), the Chow test is used. This test compares the performance of the pooled least squares (POLS) regression model with the FEM model. The null hypothesis (H0) in the Chow test states that the appropriate model is POLS (insignificant), while the alternative hypothesis (Ha) states that the FEM model is more appropriate.

Based on the Chow test calculation with the help of Stata software, the probability value (p-value) of 0.0000 was obtained. Since this value is smaller than the significance level of 0.05, the null hypothesis (H0) is rejected, and the FEM is identified as a more representative model than the CEM.

Table 4.2 Chow Test Identification of Common Effect or Fixed Effect

F (48, 186)	81.21
Prob > F	0.000

As FEM has been proven to be more appropriate than CEM, the Hausman test was conducted to determine the choice between FEM and REM. Based on the results of the Hausman test estimated using Stata software, a probability value (p-value) of 0.890 was obtained. Since this value is greater than the significance level of 0.05, REM was identified as a more suitable model than FEM.

Table 4.3 Hausman Test Result

Chi2 (2)	=	(b-B) ‘ [(V_b-V_B)^(-1)] (b-B)
	=	0.23
Prob > chi2	**=**	0.890

4.3 Classical Assumption Test

The validity of the multiple linear regression model is evaluated through a series of classical assumption tests, namely tests for multicollinearity, heteroscedasticity, and autocorrelation. The findings from these tests will be described as follows:

(i) The multicollinearity test aims to verify the absence of significant relationships among independent variables that could potentially lead to multicollinearity issues. To detect multicollinearity, the following criteria are used: a tolerance value less than 0.1 and a VIF below 10 indicate the absence of multicollinearity. Conversely, multicollinearity is detected if the tolerance value is less than 0.1 and the VIF is greater than 10.

Based on the data in Table 2.6, the VIF value for both NPL and ROA variables is recorded at 1.01, while their tolerance value (1/VIF) is 0.993318. Referring to the multicollinearity test criteria, where a VIF value below 10 and a tolerance value above

0.10 indicate the absence of multicollinearity, it is concluded that the model is free from this issue.

Table 4.4 Multicollinearity Test Result

Variable	VIF	1/VIF
NPL	1.01	0.993318
ROA	1.01	0.993318
Mean VIF	1.01	

(ii) The assumption of homoscedasticity (similarity of residual variance) in the regression model is evaluated through the heteroscedasticity test, which is an important prerequisite in regression analysis. The assumption of homoscedasticity, i.e. the similarity of residual variance, is one of the prerequisites of a good regression model. Based on the test, if the significance value (sig 2 tailed) exceeds 0.05, it can be concluded that there is no heteroscedasticity problem.

Based on the data presented in Table 2.7, a value of 0.4422 was obtained. Because the probability value is greater than the significance level of 0.05, it can be concluded that the assumption of homoscedasticity is fulfilled and the model does not experience heteroscedasticity problems.

Table 4.5 Heteroskedastisidas Test Result

Chi2 (1)	=	0.59
Prob > chi2	=	0.4422

(iii) Autocorrelation testing is carried out to evaluate the assumption of residual independence, where one of the relevant methods is the Runs test. It should be emphasized that this test is applied to residuals, not to profitability variables. The interpretation of the test results is based on the value of p (Sig.): if p (Sig.) > 0.05, then it can be concluded that there is no autocorrelation; on the other hand, p (Sig.) < 0.05, then there is an indication of autocorrelation in the residual.

Table 4.6 Autocorrelation Test Results

Obs	= 235
N(runs)	= 26
Z	= -12.09
Prob> |z|	= 0

4.4 Hypothesis Test

Based on the results of classical assumption testing on panel data, indications of autocorrelation and heteroscedasticity were detected. In accordance with the recommendations Gujarati & Porter, (2009) the Generalized Least Squares (GLS) method is applied to overcome these problems. The GLS method is the right approach when the basic assumptions of classical linear regression are violated, especially related to independence and residual homoscedasticity. The results of the analysis after the implementation of GLS are presented as follows.

Based on the data in Table 2.5, the results of the first hypothesis test show the significance value of the NPL variable 0.795. Since the tested value was higher than the established significance (α = 0.05), it can be concluded that NPLs do not have a significant influence on the bank's financial stability. Thus, the first hypothesis (H1) was rejected. The NPL coefficient obtained was 93.42.

Based on the test of the second hypothesis (H2), the ROA variable was proven to be significant with a significance value of 0.005, thus indicating a significant influence of ROA on the bank's financial stability, the ROA Coefficient was recorded at 605.58. These findings indicate that there is a positive and significant influence of ROA on bank financial stability, so hypothesis 2 (H2) is accepted.

Table 4.7 Hypothesis Test Results

ZScore	Coefficient	std. err.	z	P>|z|
NPL	93.42	360.31	0.26	0.795
ROA	605.58	217.26	2.79	0.005
_cons	31.66	6.17	5.12	0.000

4.5 Discussion

4.5.1 The Effect of Credit Risk on Bank Financial Stability

This study results in an analysis that NPLs do not have a significant influence on bank financial stability, so the hypothesis (H1) is rejected. The results of this study are different from the conclusions generally found in previous studies, which identified a significant relationship between NPLs and bank financial stability, both positive and negative. Although the NPL coefficient showed a positive correlation direction, statistically, the increase in NPLs did not significantly affect bank stability during the study period. There are several things behind this, including the effectiveness of credit risk management implemented by banks, regulators provide various relaxations and incentives to banks to manage NPLs such as credit restructuring, payment delays, and reduction of provision requirements. This policy helps banks to reduce the negative impact of NPLs on financial stability (Zaghdoudi, 2019). The low average NPL during the 2019-2023 period (1.15%), compared to the high capital adequacy ratio (26.8%), indicates that the bank has a strong cushion to absorb potential credit losses. This explains why the impact of NPLs on financial stability was not significant in this study. This view is in line with the findings of Khan et al., (2020), who emphasized that the magnitude of the NPL ratio significantly affects the impact of credit risk on bank financial stability.

Although the increase in NPLs is still a threat to financial stability, this research shows that the negative impact can be mitigated by a number of factors, especially through good credit risk management and appropriate regulatory interventions, which ultimately contribute to maintaining bank financial stability. Finally, effective NPL control remains an integral part of efforts to maintain investor and public trust, which in turn contributes positively to the distribution of funds to the economy (Zaghdoudi, 2019).

4.5.2 The Effect of Profitability on Bank Financial Stability

Based on the results of the analysis, it indicates that the profitability of operations through ROA is positively and significantly correlated with financial stability at the bank (ZScore), so H2 is accepted. This implies that the bank's increased efficiency in generating profits from its assets and capital contributes to strengthening its financial stability. Referring to the results of research by Derizkyo Naupal et al., (2023) which emphasizes high profitability reflects strong growth and performance in the future. Good profitability is recognized as an important indicator of effective financial management and plays a crucial role in preventing substantial financial losses, even potential bankruptcy (Derizkyo Naupal et al., 2023). Furthermore, the research of Jiang et al., (2023) found that increased profitability correlated with a decrease in bank risk, which directly had a positive impact on improving bank stability. Higher profitability serves as a cushion against economic shocks and contributes significantly to the stability of the financial system as a whole, as it provides reserves to prevent potential losses or face uncertainty in the future (Tibebe & Gujral, 2022).

Thus, the increase in profitability directly and substantially strengthens the bank's financial stability. Capital generated from high profitability acts as a buffer against the negative impact of credit risk on financial stability. Growing profitability also gives a positive signal to investors, which ultimately makes public trust increase to continue to store funds in banks, so that the facility of distributing funds to the community can make the economy grow (My & Quoc, 2022).

Thus, the increase in profitability directly and substantially strengthens the bank's

financial stability. Capital generated from high profitability acts as a buffer against the negative impact of credit risk on financial stability. Growing profitability also gives a positive signal to investors, which ultimately makes public trust increase to continue to store funds in banks, so that the facility of distributing funds to the community can make the economy grow (My & Quoc, 2022).

CONCLUSION

This study aims to examine the influence of credit risk and profitability on the financial stability of banks listed on ASBANDA and the Indonesia Stock Exchange. The results of the analysis in the previous chapter can be summarized as follows:

From the credit risk study, which was proxied by NPLs, it did not have a statistically significant effect on the financial stability of banks. These findings imply that high NPL levels do not substantially affect banks' financial stability in the sample and study period. Possible interpretations of these findings are the effectiveness of credit risk management implemented by ASBANDA-affiliated banks, as well as regulatory intervention through various policies, such as credit restructuring, payment delays, and reduction of provision requirements. These policies have most likely helped banks mitigate the negative impact of NPLs on financial stability. However, it is important to emphasize that although NPLs are not significant in the context of this study, their potential impact on financial stability still needs to be watched out, especially in the face of future changes in economic conditions.

This study shows that profitability, as measured using ROA, has a positive and statistically significant influence on bank financial stability. The findings indicate that the more profitable a bank (ROA) grows, the stronger its financial stability. This means that banks with high profitability have a greater capacity to absorb potential losses and overcome economic challenges. ROA reflects the extent to which banks are able to generate profits from the assets they manage. Banks with high profitability tend to show better management efficiency as well as more effective risk control, which directly supports financial stability. The results of this study have practical implications, namely that bank management needs to make increasing profitability one of the main strategies to strengthen financial stability.

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Table and Figure

Table 3.1 Research Sample Screening with *Purposive Sampling* technique

Criteria	Total
Conventional Regional Development Bank registered with the Regional Development Bank Association (Asbanda)	22
Conventional Commercial Banks listed on the main board of the Indonesia Stock Exchange	25
Conventional Commercial Banks on BEI and Regional Development Banks on ASBANDA which submit annual financial reports for the 2019-2023 period	47
Number of Samples	**235**

(Source: ASBANDA & BEI Year 2019-2023)

Table 4.1 D*escriptive Statistics*

	N	Minimum	Maximum	Mean
ZSCORE	235	0,441	203,55	50,10
NPL	235	-0,000	0,049	0,011
ROA	235	-1,589	0,600	0,017

Tabel 4.2 chow test identification of common effect or fixed effect

F (48, 186)	81.21
Prob > F	0.000

Tabel 4.3 Hausman Test Result

Chi2 (2)	=	(b-B) ' [(V_b-V_B)^(-1)] (b-B)
	=	0.23
Prob > chi2	=	0.890

Tabel 4.4 Multicollinearity Test Result

Variable	VIF	1/VIF
NPL	1.01	0.993318
ROA	1.01	0.993318
Mean VIF	1.01	

Tabel 4.5 Heteroskedastisidas Test Result

Chi2 (1)	=	0.59
Prob > chi2	=	0.4422

Tabel 4.6 Autocorrelation Test results

Obs	= 235
N(runs)	= 26
Z	= -12.09
Prob> |z|	= 0

Tabel 4. 7 Hypothesis Test Results

ZScore	Coefficient	std. err.	z	P>|z|
NPL	93.42	360.31	0.26	0.795
ROA	605.58	217.26	2.79	0.005
_cons	31.66	6.17	5.12	0.000

Figure 1.1 Indonesian Banking Statistics 2023