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The Relationship between Key Financial Indicators and Bank Performance: A Case Study of 10 Major Indonesian Commercial Banks

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Abstract
This study focuses on 10 central Indonesian commercial banks listed on the Indonesian Stock Exchange from 2008 - 2022. Given Indonesia's significant economic growth and the crucial role of banks in its economy, we aim to explore the impact of key financial indicators - capital adequacy ratio, loan-to-deposit ratio, net interest margin, non - non-performing loan ratio, and net profit - on bank performance. By using descriptive and quantitative methods with secondary data, along with purposive sampling and panel data analysis via E- In views 10, we find novel results. Unlike previous studies, we discovered that capital adequacy and net profit profit negatively affect bank performance, while net interest margin has a positive impact. Additionally, the loan-to-deposit ratio and non-performing loan ratio show no significant effects. This challenges inconsistent findings and provides new insights for understanding bank performance in emerging economies like Indonesia, especially considering the unique economic events within the study period.

INTRODUCTION

The banking system plays a crucial role in the modern economic world. The banking system one of digital financial. The use of digital financial technology is becoming more widespread in society (Lutfillah et al., 2024). Banks are actively involved in capital formation and contribute to economic growth by collecting personal savings and lending them to businesses. This process positions banks as key players in facilitating the creation of new capital within a country. (Hersugondo et.,al 2021). As Chou and Buchdadi (2016) mentioned, the Indonesian banking sector has faced multiple economic crises during its development, especially the severe crisis in 1998. This crisis led to the collapse of the banking system, and many banks failed one after another. To address these problems, the Indonesian banking sector began implementing a series of reforms after the crisis, including revising regulatory policies on capital adequacy to improve the quality of commercial banks. Despite post-crisis reforms, the sector's performance remains a concern. For instance, the banking sector was stressed during the 2008 global financial crisis and the 2019 COVID-19 pandemic. Understanding how financial indicators impact bank performance during such volatile periods is crucial for maintaining economic stability.

The Indonesian banking system has developed a basic framework called the Indonesian Banking Architecture (IBA), which aims to strengthen the structure of the banking sector and increase competitiveness. The IBA categorized by the Bank Indonesia Regulation No. 14/26/PBI/2012 on business

activities and office network based on the bank's core capital, which classifies the Banks into four business groups (BUKU), with the size of the core capital of each category determining the scope of their business and breadth of services. The size of the core capital directly impacts the scope of the bank's business and its ability to provide services: banks in BUKU 1 and BUKU 2 are limited to domestic operations due to their small core.

Capital, while BUKU 3 and BUKU 4 can provide international banking services. (Kadang et al., 2021). Based on this categorization framework, studying the Indonesian banking system, especially for BUKU3 and four banks, becomes particularly important.

Previous studies on the relationship between financial indicators and bank performance in Indonesia have produced inconsistent results. For example, some studies suggest that the capital adequacy ratio positively impacts bank performance, while others find a negative or insignificant relationship. This lack of consensus indicates a need for further research to clarify these relationships, especially considering Indonesia's unique economic and regulatory environment. This study aims to bridge this gap by providing empirical evidence on how these indicators function in Indonesia's banking sector, contributing to the existing theoretical framework.

This study's novelty lies in its focus on a specific period (2008 - 2022) encompassing two major global economic events. Analyzing data from this period shows how financial indicators impact bank performance over different economic cycles. Additionally, previous studies often have different sample sizes and time frames, and this research provides a more comprehensive and updated analysis of Indonesian commercial banks. Based on the above background and problem identification, the researchers will use several variables in this study.

1) Does Capital Adequacy Ratio (CAR) significantly impact Return on Equity (ROE)?
2) Does the Loan Deposit Ratio (LDR) significantly impact Return on Equity (ROE)?
3) Does Net Interest Margin (NIM) significantly impact Return on Equity (ROE)?
4) Does a Non-Performing Loan (NPL) significantly impact Return on Equity (ROE)?
5) Does Net Profit (NP) significantly impact Return on Equity (ROE)?

LITERATURE REVIEW

Return on Equity (ROE) is a measure of a company's ability that shows the ratio of profits earned by the company to the money invested by shareholders. Higher ROE means the company is making a better return on its shareholders' investment, indicating more efficient resource utilization for profit generation (Ongore & Kusa, 2013). According to Moussu and Petit-Romec (2014), most banks worldwide still use ROE as a core measure of profitability. It is the primary criterion for evaluating bank performance and crucial in resource allocation within and among banks, directly impacting a bank's resource management and strategic planning.

The Capital Adequacy Ratio (CAR) is a bank's performance ratio reflecting its ability to withstand losses during a crisis. Generally, a higher CAR means better crisis-coping ability. Additionally, it affects a bank's profitability as it decides whether it can venture into risky, high-returning business areas (Ongore & Kusa, 2013).

The Loan Deposit Ratio (LDR) measures how much a bank's stable funding covers its loans and is a key ratio for assessing bank liquidity. Arsew et al. (2020) pointed out that it gauges a bank's ability to meet financial obligations. Banks lending more using stable deposits face the risk of a funding gap, which can affect liquidity, credit availability, and even economic growth if widespread. LDR is calculated by dividing total loans by total deposits in a given period (Mabwe & Jaffar, 2022).

Net interest margin (NIM) measures the difference between a bank's interest income and the interest it pays to lenders, expressed as a proportion of its interest-earning assets. It reflects the cost of bank intermediation and operational efficiency (Ongore & Kusa, 2013). NIM is regarded as one of the core

indicators of bank profitability, demonstrating both profitability and a bank's efficiency as a financial intermediary.

The non-performing loan ratio (NPL) reflects the bank's ability to handle the risk of loan repayment by borrowers. After loan disbursement, the bank must monitor loan utilization and the borrower's repayment ability and compliance. If borrowers fail to repay on time, the bank's profitability will be affected (Kristianti, 2016; Arsew et al., 2020). The NPL ratio is calculated by dividing the total non-performing loans by the total loans in the bank's portfolio.

Net profit, or net income, is the revenue remaining after deducting all costs and expenses in a specific period. It can be used for dividend distribution to common stockholders or as retained earnings for reinvestment (Jayathilaka, 2020). Although usually positively correlated with ROE, in banks, factors like improved capital adequacy, increased retained earnings, non-performing loan disposals, and macroeconomic fluctuations can lead to a negative correlation, causing ROE to decline.

Previous studies on the relationship between financial indicators and bank performance have produced inconsistent results. For the Capital Adequacy Ratio (CAR), Nanik Kustiningsih et al. (2020) found an adverse effect on Return on Assets (ROA), while Vincent Okoth Ongore and Gemechu Berhanu Kusa (2013) suggested a positive impact on ROA, ROE, and Net Interest Margin (NIM). Rina Adi Kristianti and Yovin (2016) reported a positive impact on ROA, Million Gizaw, Matewos Kebede, and Sujata Selvaraj (2015) found an adverse effect on ROA and ROE, and Li Jingjing (2022) indicated an adverse impact on ROE.

Regarding the Loan to Deposit Ratio (LDR), Vincent Okoth Ongore and Gemechu Berhanu Kusa (2013), Rina Adi Kristianti and Yovin (2016), and Million Gizaw, Matewos Kebede, and Sujata Selvaraj (2015) all concluded no effect on ROA and ROE. However, Li Jingjing (2022) found an adverse impact on ROE, and HERRY ACHMAD BUCHORY (2015) determined no significant relationship with ROA.

For the Non - Performing Loan ratio (NPL), Vincent Okoth Ongore and Gemechu Berhanu Kusa (2013) and Li Jingjing (2022) found an adverse effect on ROA and ROE, while HERRY ACHMAD BUCHORY (2015) found no significant relationship with ROA.

Due to differences in sample sizes, time frames, and considered variables, these inconsistent findings highlight the need for further research. A more comprehensive study accounting for different regions' unique economic and regulatory environments is necessary to clarify these relationships, develop a more robust theoretical framework, and provide reliable guidance for banks and financial regulators. This study focuses on internal factors and analyzes data from 2008 - 2022, covering the 2008 global financial crisis and the 2019 COVID-19 pandemic. The direct impact of these external economic shocks may last about a year, but their impact on bank financial data lags, lasting two to three years or more. Analyzing data from this period can help explore the role of different financial indicators across economic cycles and whether their impact on bank performance changes over time.

METHODS

This study employs a descriptive quantitative approach. After determining the method, researchers collect secondary data from the S&P Capital IQ database. The data is then imported into Microsoft Excel 2021 and analyzed using EViews 10. The findings will be examined and interpreted in light of the literature review to conclude, address the research questions, and shape the study's perspective. Finally, recommendations will be provided to relevant stakeholders.

In research, the population is the set of all individuals, things, or events that share some common characteristics and are the subject of the study. It represents the totality of elements that the researcher wishes

The sample is a subset of individuals taken from the population for conducting research. Researchers select samples to gather data and analyze them, providing insights into the characteristics and behaviours of the broader population. (Ahmad et al., 2023).

The following criteria or characteristics need to be met for this study:

1. Commercial banks listed on the Indonesian Stock Exchange.
2. Ability to provide annual reports for the period from 2008 to 2022.
3. Stock trading has not been suspended.
4. Significant presence in the Indonesian banking industry in terms of asset size and market share.

First, we defined the population as all commercial banks listed on the Indonesian Stock Exchange. Then, we selected 10 banks based on the specific criteria above.

Operationalization of Research Variables

The independent variable is the presumed cause manipulated or controlled in an experiment. The dependent variable is the presumed effect measured and expected to change in response to the Independent variable. This research aims to find the relationship between financial indicators and return on equity as bank performance indicators. The Return on Equity is explained as a dependent variable, and another financial ratio (CAR、LDR、NIM、NPL、NP) is explained by independent variables.

Table 1. Variables Definitions

Variable Types	Variable Names	Acronyms	Measurement	Scale	References
Dependent Variables	Return on Equity	ROE	$Return\ on\ Equity\ (ROE) = \frac{Net\ Income}{Total\ Equity}$	Ratio	Duraj etc., (2014); Jaouad & Lahsen (2018)
Independent Variables	Capital Adequacy Ratio	CAR	$Capital\ Adequacy\ Ratio\ (CAR) = \frac{Total\ Equity}{Total\ Assets}$	Ratio	Chou and Buchdadi (2016); Usman and Lestari (2019);
	Loan-to-Deposit Ratio	LDR	$Loan\ to\ Deposit\ Ratio\ (LDR) = \frac{Total\ Loans}{Total\ Deposit}$	Ratio	Kristian (2016); Chou and Buchdadi (2016); Usman and Lestari (2019);
	Net Interest Margin	NIM	$Net\ Interest\ Margin\ (NIM) = \frac{Net\ Interest\ Income}{Interest\ bearing\ Assets}$	Ratio	Chou and Buchdai (2016); Hersugondo etc., (2021)
	Non-Performing Loan	NPL	$Non-Performing\ Loan\ (NPL) = \frac{Non-performing\ Loans}{Total\ Loans}$	Ratio	Kristian (2016); Chou and Buchdadi (2016); Usman and Lestari (2019)
	Net Profit	NP	*Net Profit=Logarithm(Net Profit)*	USD	Hortlund's (2005)

Source: Authors (2024)

Panel Data Model Analysis

This study considered three regression models - The standard effect model, the fixed effect model, and the random effect model.

1) The typical effect modelling approach is a relatively simple analytical tool because it combines time

series data with cross-sectional data. (Zulfikar,2018).

2) The fixed effects model is used to analyze the effects of variables that vary over time on outcomes and assess the net effect of predictor variables by controlling for invariant characteristics within entities.
3) The rationale for random effects models is that, unlike fixed effects models, differences between entities are treated as random and independent of the predictor or independent variables in the model (Torres-Reyna, 2007).

The Test for Determining the Regression Model

Two stages of testing, namely Chow and Haussmann, must be carried out to determine whether the right model is suitable for interpretation.

1) The Chow test is used to determine the best and appropriate model to use, whether the Common Effect Model (CEM) or the Fixed Effect Model (FEM) in estimating panel data (Zulfikar,2018). If the Chi-Square Prob value is ≥ 0.05, meaning that CEM is selected, and if the Chi-Square Prob value is ≤ 0.05, meaning that the FEM is selected.
2) Hausman test determines the best and most appropriate method between the fixed and random effect models (Zulfikar,2018). If the Prob Cross-Section is ≥ 0.05, it means that REM is selected and if the Prob Cross-Section is ≤ 0.05, it means that FEM is selected.

Multiple Regressions Analysis

We conducted a multiple regression analysis after selecting the fixed effect model based on the Chow and Hausman tests. The multiple regression model is an analysis designed to explain the relationships between a dependent variable and multiple independent variables. In this study, the variables include CAR (X1), LDR (X2), NIM (X3), NPL (X4) and NP (X5), with ROE (Y) as the dependent variable. Therefore, the analysis considers the following relationships:

$Y=\alpha+ \beta\_1 X\_1+\beta\_2 X\_2+\beta\_3 X\_3+\beta\_4 X\_4+\beta\_5 X\_5+\varepsilon$ (Equation 1)

Where: Y= Return on Equity, α= constant, β1-β5=the regression coefficient, X1= Capital Adequacy Ratio, X2= Loan to Deposit Ratio, X3= Net Interest Margin, X4= Non-Performing Loan, X5= Net Profit, ε= random error.

Classical Assumption Test

Finally, we performed classical assumption tests, including normality test (using Jarque - Bera test), multi-collinearity test (examining correlation coefficients), heteroskedasticity test (using Glejser test), and autocorrelation test (using Durbin - Watson test) to ensure the validity of our regression results.

1) The normality test determines whether the residual or error terms in the regression model follow a normal distribution (Mantalos, 2010).
    a. If Jarque-Bera probability > 0.05, the residual is usually distributed.
    b. If Jarque-Bera probability < 0.05, residual is not normally distributed.
2) Multi-collinearity, or near-linear correlation, is a statistical phenomenon that refers to a high degree of correlation between predictor variables in multiple regression models. If there is no linear relationship between the predictor variables, they are considered orthogonal (Daoud, 2017).
    a. If the result is below 0.8, it indicates that the independent variables are largely uncorrelated;
    b. If the result is above 0.8, it suggests that the independent variables are strongly correlated.
3) The most common statistical method for detecting autocorrelation is the Durbin-Watson test based on ordinary least squares residuals. If the DW value is in the range of -2 to 2, it usually indicates that there is no significant autocorrelation in the model, suggesting that the error terms are independent of each other and the assumptions of the regression model are well satisfied;
4) Heteroskedasticity usually refers to the fact that the variance of the errors is not constant. If the

model's errors are not entirely random, additional steps must be taken to understand or correct this dependence (Astivia & Zumbo, 2019). The most accurate technique for testing the presence of heteroscedasticity is through the Glejser test. The determining score is if the prob value > 0.05, which means that the data does not confirm the existence of heteroscedasticity.

RESULT AND DISCUSSION

Chow Test result

The Chow test helps to determine whether to use the common effects model or the fixed effects model; the results are as follows:

Table 2. Chow test by using E-views version 10

Redundant Fixed Effects Tests Equation: Untitled Test cross-section fixed effects			
Effects Test	Statistic	d.f.	Prob.
Cross-section F	38.997763	(9,135)	0.0000
Cross-section Chi-square	192.133864	9	0.0000

Source: Authors (2024)

According to Table 2, The p-value for this test is 0.0000, below the 5% threshold. Consequently, the fixed effects model is more suitable for this analysis.

Hausman Test result

The Hausman test is used to decide between the random effects model and the fixed effects model; the results are as follows:

Table 3. Hausman Test by using E-views version 10

Correlated Random Effects - Hausman Test Equation: Untitled Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	31.005406	5	0.0000

Source: Authors (2024)

Based on Table 3, the p-value for this test is 0.0000, which is below the 5% threshold. Therefore, the fixed effects model is the preferred choice for this analysis.

Multiple Regression Model

The study employs a fixed effects model, tested using E-Views. The data is as follows:

Table 4. Multiple Regression results by using E-views version 10

Dependent Variable: ROE
Method: Panel Least Squares
Date: 09/08/24 Time: 09:22
Sample: 2008 2022
Periods included: 15
Cross-sections included: 10
Total panel (balanced) observations: 150

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.576326	0.051682	11.15137	0.0000
CAR	-0.706876	0.069053	-10.23669	0.0000
LDR	-0.020103	0.022064	-0.911121	0.3639
NIM	0.711427	0.038213	18.61735	0.0000
NPL	-0.029582	0.039332	-0.752115	0.4533
@LOG10(NP)	-0.082243	0.010312	-7.975580	0.0000
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.931291	Mean dependent var		0.141350
Adjusted R-squared	0.924165	S.D. dependent var		0.074261
S.E. of regression	0.020450	Akaike info criterion		-4.847015
Sum squared resid	0.056458	Schwarz criterion		-4.545952
Log-likelihood	378.5261	Hannan-Quinn criteria.		-4.724703
F-statistic	130.7003	Durbin-Watson stat		0.954898
Prob(F-statistic)	0.000000			

Source: Authors (2024)

ROE=0.576326-0.706876CAR-0.020103LDR+0.711427NIM-0.029582NPL-0.082243NP

The equation can be described as follows.

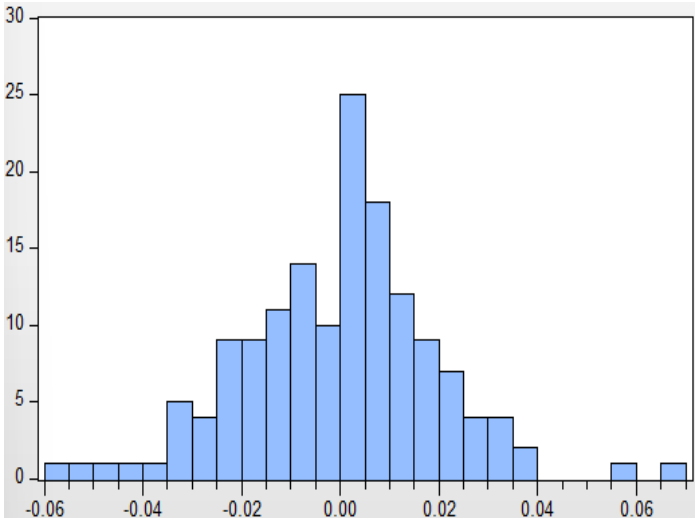
1) The constant of 0.576326 indicates that if all the independent variables are 0, the ROE is expected to be 0.576326.
2) The coefficient for CAR is -0.706876, which indicates a negative impact on ROE. The p-value of 0.0000 shows that this effect is significant. Higher capital adequacy ratios mean banks hold more capital to cover possible credit losses and financial risks. The inverse relationship between capital adequacy ratios (CAR) and return on equity (ROE) is usually more pronounced during financial crises and epidemics. Banks ' risk rises during these periods, and more capital buffers are needed. At the same time, banks reduce risky loans or investments and profitability, reducing ROE.
3) The coefficient for LDR is -0.020103, which indicates a negative impact on ROE. The p-value of 0.3639 shows that this effect is not significant. Banks are more inclined to reduce lending in favour of safer assets in uncertain economic environments, such as during financial crises and epidemics. For example, holding low-risk, highly liquid government bonds. This is an important reason LDR is negatively but insignificantly related to ROE. Banks will be more cautious in lending because of the decline in corporate and personal incomes due to the epidemic and the rise in credit risk.

While the government's increased bond issuance provides more investment opportunities, banks' ROE may also fall when the LDR falls. However, the relationship between LDR and ROE may not be significant because government bond returns remain stable. The sample size problem may also cause the final result to be non-significant.

4) The coefficient for NIM is 0.711427, which indicates a positive impact on ROE. The p-value of 0.0000 shows that this effect is significant. Net interest margin is the income banks gain through the difference between lending and deposit interest rates. When NIM is higher, the bank's interest income increases, directly improving the net profit and thus increasing ROE. Moreover, a higher NIM indicates that the bank can utilize its capital more efficiently to invest interest-bear interest-bearings loans, which increases the return on capital and thus pushes the ROE to increase. A rise in NIM directly increases the bank's profitability and ROE, forming a positive and significant relationship.
5) The coefficient for NPL is -0.029582, which indicates a negative impact on ROE. The p-value of 0.4533 shows that this effect is not significant. Generally speaking, a rise in NPL means that the quality of a bank's loans declines, bad loans increase, and the bank needs to make more provisions for credit losses, leading to a decrease in net profit, which reduces ROE. Moreover, the presence of NPLs ties up the bank's capital, preventing the bank from utilizing the capital efficiently to generate higher returns and reducing ROE. Therefore, in most cases, a rise in NPLs leads to an ROE decline, showing an adverse effect. However, during the financial crisis and epidemic, the Indonesian government and the central government took various measures to stabilize the banking system and weaken the impact of NPL on bank's profitability so that it may lead to a non - non-significant relationship between NPL and ROE.
6) The coefficient for NP is -0.082243, which indicates a negative impact on ROE. The p-value of 0.0000 shows that this effect is significant. Although NP and ROE are positively correlated in most In some cases, certain conditions may cause ROE and NP to be negatively correlated. For example, this study uses data from financial crises and epidemic periods. In this context, the Indonesian government and regulators like OJK tend to increase shareholders' equity to enhance banks' soundness. On the other hand, net profit may be affected by factors such as a decline in demand for loans and changes in investment patterns, which can lead to a decline in NP. Since ROE is the ratio of NP to shareholders' equity, the increase in bank capital decreases ROE. However, the change in NP is not significant, creating a negative correlation.

Normality Test Result

Table 5. Normality test result by using E-views version 10



Source: Authors (2024)

This study used the Jarque-Bera test with a significance level of α=5% to determine whether the variable data follow a normal distribution. According to Table 5, the Jarque-Bera probability value is 0.082511, which exceeds 0.05. This indicates that the data follow a normal distribution.

TesThis study uses a multi-collinearity
test to determine the correlation among variables in the multiple regression model.

Table 6. Multi-collinearity Test result by using E-views version 10

	ROE	CAR	LDR	NIM	NPL	@LOG10(NP)
ROE	1.000000	-0.314461	-0.352242	0.782550	-0.319543	0.579365
CAR	-0.314461	1.000000	0.378677	0.053755	-0.084081	0.218956
LDR	-0.352242	0.378677	1.000000	-0.275226	-0.035471	0.012923
NIM	0.782550	0.053755	-0.275226	1.000000	-0.403879	0.731843
NPL	-0.319543	-0.084081	-0.035471	-0.403879	1.000000	-0.344882
@LOG10(NP)	0.579365	0.218956	0.012923	0.731843	-0.344882	1.000000

Source: Authors (2024)

According to Table 6, the maximum correlation coefficient value is negative 0.782550, which is less than 0.8. Thus, there is no Multi-collinearity problem in this model.

Heteroscedasticity Test Result

Heteroscedasticity testing is used to determine whether the variance of residuals in a regression model changes with different observations. If there is no heteroscedasticity, the regression model is considered good. The results of the heteroscedasticity test in this study are as follows:

Table 7. Heteroscedasticity tests results by using E-views version 10

Dependent Variable: AA
Method: Panel Least Squares
Date: 09/08/24 Time: 09:26
Sample: 2008 2022
Periods included: 15
Cross-sections included: 10
Total panel (balanced) observations: 150

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.21E-13	0.051680	4.27E-12	1.0000
CAR	1.35E-13	0.069051	1.95E-12	1.0000
LDR	1.58E-14	0.022063	7.17E-13	1.0000
NIM	1.34E-13	0.038212	3.50E-12	1.0000
NPL	2.79E-15	0.039331	7.10E-14	1.0000
@LOG10(NP)	-4.51E-14	0.010311	-4.38E-12	1.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.000000	Mean dependent var	1.39E-18
Adjusted R-squared	-0.103704	S.D. dependent var	0.019465
S.E. of regression	0.020449	Akaike info criterion	-4.847089
Sum squared resid	0.056454	Schwarz criterion	-4.546025
Log-likelihood	378.5317	Hannan-Quinn criteria.	-4.724776
F-statistic	1.19E-15	Durbin-Watson stat	0.953720
Prob(F-statistic)	1.000000		

Source: Authors (2024)

Based on table 7, since the p-value are in excess of 0.05, there is no heteroscedasticity problem in this model

CONCLUSION

This study explored the impact of key financial indicators (capital adequacy ratio, loan-to-deposit ratio, net interest margin, non-performing loan ratio, and fit profit) on 10 central Indonesian commercial banks listed on the Indonesian Stock Exchange from 2008 - 2022. The results show that the Capital Adequacy Ratio (CAR) has a negative and significant relationship with Return on Equity (ROE). During financial crises and epidemics, banks with higher CAR hold more capital for risk-covering and reduce risky loans or investments, which leads to a decline in profitability and ROE. The Loan Deposit Ratio (LDR) effect on ROE is negative but insignificant. Banks tend to reduce lending in uncertain economic environments and invest in safer assets like government bonds. The decline in corporate and personal incomes and increased credit risk make banks cautious in lending. Although LDR and ROE may move in opposite directions, the relationship is insignificant due to stable government bond returns and potential sample size issues. Net Interest Margin (NIM) has a significant positive relationship with ROE. A higher NIM means more interest income for banks, directly increasing net Profit profit and ROE. It also indicates more efficient capital utilization for interest-bearing asset investment. The non-performing loan ratio (NPL) effect on ROE is negative but insignificant. Generally, a rise in NPL reduces bank profitability and ROE. However, during the financial crisis and epidemic, government and central bank measures to stabilize the banking system weakened this impact. Net Profit (NP) is negatively and significantly correlated with ROE. In the context of financial crises and epidemics, the Indonesian government and regulators increased shareholders' equity to enhance bank soundness. At the same time, NP was affected by reduced loan demand

and changed investment patterns. As ROE is the ratio of NP to shareholders' equity, an increase in bank capital Led to a decrease in ROE, even with an insignificant change in NP. Overall, ROE is strongly influenced by the combination of these financial indicators, and they can collectively explain about 92.42% of the observed changes in ROE.

For banks, they should carefully manage their capital adequacy. While maintaining a certain level of capital to withstand risks, they must balance risk - -aversion and profitability. During regular economic periods, they can appropriately increase risk-taking to improve ROE. Regarding LDR, although the relationship with ROE is not significant in this study, banks should still pay attention to maintaining an appropriate lending level according to economic conditions. In stable economic situations, they can gradually increase lending to boost profitability. Banks should strive to increase NIM. This can be achieved by optimizing the interest rate spread between loans and deposits and improving the efficiency of capital utilization in interest-bearing asset investments. To address the potential negative impact of NPL on bank performance, banks should strengthen loan risk management. This includes stricter borrower screening, continuous loan monitoring, and timely non-performing loan handling. Regarding net profit, banks need to adapt to changes in the economic environment. They can explore new business models and investment opportunities to increase revenue and maintain a reasonable level of shareholders' equity to avoid a negative impact on ROE.

REFERENCES

Ahmad, N., Alias, F. A., & Razak, N. (2023). Understanding population and sample in research: key concepts for valid conclusions. Signs: E- Learning, 6, 19- 24. https://appspenang.uitm.edu.my/sigcs/2023 2/Articles/20234_UnderstandingPopulationAndSampleInResearch.pdf

Arsew, V. T., Kisman, Z., & Sawitri, N. N. (2020). Analysis of the Effect of Loan to Deposit Ratio, Non- Performing Loans and Capital Adequacy Ratio on Return on Assets with Good Corporate Governance as Intervening Variables in Banking Companies Listed in the Corporate Governance Perception Index (CGPI) for the Period 2014–2018. Journal of Economics and Business, 3(1). https://papers.ssrn.com/sol3/Delivery.cfm?abstractid=3525666

Astivia, O. L. O., & Zumbo, B. D. (2019). Heteroskedasticity in Multiple Regression Analysis: What it is, How to Detect it and Solve it with Applications in R and SPSS. Practical Assessment, Research & Evaluation, 24(1), n1. https://files.eric.ed.gov/fulltext/EJ1203343.pdf

Buchory, H. A. (2015, August). Banking intermediation, operational efficiency and credit risk in the banking profitability. In Proceeding-Kuala Lumpur International Business, Economics and Law - Conference (Vol. 7, No. 2, pp. 141- 152). https://www.klibel.com/wp content/uploads/2015/08/KLIBEL7_Bus_41- formatted.pdf

Chou, T. K., & Buchdadi, A. D. (2016). Bank performance and its underlying factors: A study of rural banks in Indonesia. Accounting and Finance Research, 5(3), 55–63.

Daoud, J. I. (2017, December). Multi-collinearity and regression analysis. In Journal of Physics: Conference Series (Vol. 949, No. 1, p. 012009). IOP Publishing. https://iopscience.iop.org/article/10.1088/1742- 6596/949/1/012009/pdf

Duraj, B., & Moci, E. (2015). Factors influencing the bank profitability-empirical evidence from Albania. Romanian Economic and Business Review, 10(1), 60. http://www.rebe.rau.ro/RePEc/rau/journl/SP15/REBE-SP15-A6.pdf

HERSUGONDO, H., ANJANI, N., & Pamungkas, I. D. (2021). The role of non-performing asset, capital, adequacy and insolvency risk on bank performance: a case study in Indonesia. The Journal of Asian Finance, Economics and Business, 8(3), 319- 329. https://koreascience.kr/article/JAKO202106438543311.pdf

Hortlund, P. (2005). The long-term relationship between capital and earnings in banking (No. 611). SSE/EFI Working Paper Series in Economics and Finance. https://www.econstor.eu/bitstream/10419/56201/1/503293377.pdf

Jaouad, E., & Lahsen, O. (2018). Factors affecting bank performance: empirical evidence from Morocco. European Scientific Journal, 14(34), 255-267. https://www.academia.edu/download/58994178/Factors_Affecting_Bank_Performance_Empirical_Evidence_from_Morocco20190422-90071-9l2yul.pdf

Jayathilaka, A. K. (2020). Operating profit and net profit: measurements of profitability. Open Access Library Journal, 7(12), 1-11. https://www.scirp.org/journal/paperinformation?paperid=105860

Kadang, J., Surayya, S., & Fasial, M. (2021). Indonesian banking performance based on BUKU. Manajemen dan Bisnis, 20(2), 117-127. https://www.journalmabis.org/mabis/article/download/508/343

Kristianti, R. A. (2016). Factors Affecting Bank Performance: Cases of Top 10 Biggest Government and Private Banks in Indonesia in 2004-2013. Review of Integrative Business and Economics Research, 5(4), 371. http://www.sibresearch.org/uploads/3/4/0/9/34097180/riber_s16-163_371-378.pdf

Kustiningsih, N., Kalbuana, N., Rochman, A. S. U., Farid, M. M., Bharmawan, A. S., Farida, I.,.....& Hidayat, W. (2020). STUDY RATIO FINANCIAL OF BANK PERFORMANCE: EVIDENCE FROM INDONESIA. PalArch's Journal of Archaeology of Egypt/Egyptology, 17(9), 6571-6605. https://www.academia.edu/download/120687520/STUDY_RATIO_FINANCIAL_OF_BANK_PERFORMANC.pdf

Li Jingjing (2022). An EmpiricaI Analysis on the Factors Affecting the Financial Performance of Small and Medium Listed Banks.

Lutfillah, N. Q., Hapsari, A. P., & Candrawati, T. (2024). Determinants of Students' Decisions to Use Paylater Digital Financial Products. *BASKARA : Journal of Business and Entrepreneurship*, *7*(1), 42–54. https://doi.org/10.54268/baskara.v7i1.23263

Mabwe, K., & Jaffar, K. (2022). UK Government controls and loan-to-deposit ratio. Journal of Financial Regulation and Compliance, 30(3), 353 - 370. https://papers.ssrn.com/sol3/Delivery.cfm?abstractid=4063774

Mantalos, P. (2010). Robust critical values for the Jarque-Bera test for normality. Jönköping International Business School. https://www.researchgate.net/profile/Panagiotis- Mantalos/publication/238597185_ROBUST_CRITICAL_VALUES_FOR_THE_JARQUE- BERA_TEST_FOR_NORMALITY/links/555cba0308ae8c0cab2a658f/ROBUST-CRITICAL- VALUES-FOR-THE-JARQUE-BERA-TEST-FOR-NORMALITY.pdf

Moussu, C., & Petit-Romec, A. (2014). RoE in banks: myth and reality. Available at SSRN 2374068. https://papers.ssrn.com/sol3/Delivery.cfm?abstractid=2374068

Ongore, V. O., & Kusa, G. B. (2013). Determinants of financial performance of commercial banks in Kenya. International journal of economics and financial issues, 3(1), 237-252. https://dergipark.org.tr/en/download/article-file/362760

Torres-Reyna, O. (2007). Panel data analysis fixed and random effects using Stata (v. 4.2). Data & Statistical Services, Princeton University, 112(1), 1-40. https://www.academia.edu/download/57152357/-_Panel101.pdf

Usman, B., & Lestari, H. S. (2019). Determinants of bank performance in Indonesia. Jurnal Minds: Manajemen Ide Dan Inspirasi,6(2), 193 - 204. https://journal3.uin- Alauddin.ac.id/index.php/minds/article/download/11282/7486

Zulfikar, R., & STp, M. M. (2018). Estimation model and selection method of panel data regression: An overview of common, fixed, and random effect models. JEMA: Jurnal Ilmiah Bidang Akuntansi, 9(2), 1-10. https://osf.io/download/5b24301a8b4bed0011b5b80f/