

Analysis of the Effect of Loan to Deposit Ratio, Non-Performing Loan, and Capital Adequacy Ratio on Financial Performance of Banking Sub-Sector Companies on the Indonesia Stock Exchange

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Abstract— Banks are financial institutions that are authorized to collect and distribute funds to the public. Banks must be able to maintain the stability of their financial performance. Research was conducted to identify the factors that affect the bank's financial performance. The research was conducted to determine the effect of LDR, NPL, and, CAR on the financial performance of banks listed on the IDX. This study utilizes secondary data sourced from financial reports or annual reports of banking sub-sector companies, obtained from the official IDX website, covering the period from 2018 to 2022. The population of the banking sub-sector amounted to 47 companies. The technique used for sampling is non-probability sampling, namely purposive sampling. The criteria taken are companies that Initial Public Offering before 2018. Therefore 37 companies were obtained. This study uses multiple regression analysis. The results of data analysis show that the LDR, ratio does not impact financial performance, while NPL and CAR have a negative effect on financial performance as measured using the return on assets ratio.

Keywords—LDR ; NPL; CAR; Financial Performance

I. INTRODUCTION

This paper focuses on the bank's financial performance. Banks play an important role in the country's economy. Highlighting the macroeconomic factors such as rising interest rates, inflation, and economic growth that pose risk to the banking sector. Maintaining stable financial performance is essential for bank in navigation these challenges. Financial performance serves as a metric to gauge how effectively a bank achieves its objectives, primarily centered on profit maximization. Profitability, measured by return on assets (ROA), indicates the success of a bank's financial performance [1], calculated as the ratio of profit before tax expense to total assets. Several factors, including the LDR, NPL, and CAR, can significantly influence a bank's financial performance. Weaknesses in these areas can restrict access to financial service. This research employs multiple regression to evaluate the impact of LDR, NPL, and CAR on financial performance, using ROA as the key metric.

LDR is used to measure the amount of credit given by the amount of customer loans. Banks must balance the funds channeled to the public with the amount of deposits they receive. The minimum loan-to-deposit ratio set by Bank Indonesia is 78% and the maximum limit set is 92%. The higher the ratio value shown, the better the performance of a bank. This is corroborated by studies from sources [2] [3] [4] [5]. This indicates a positive impact on the LDR and financial performance. The second factor is NPL.

NPL are loans whose interest and principal payments are due or delayed under the agreement, or whose payments are late and no longer anticipated. An increase in the number of non-performing loans in a bank will worsen the bank's financial performance. This is corroborated by studies from sources [6] [7] [8]. This indicates a negative impact the NPL on financial performance. The third factor is the CAR.

The CAR shows the ratio between overall equity and RWA. Each bank is required to maintain its CAR in compliance with the regulations established by Bank Indonesia. The higher the CAR value of a bank, the better the bank's financial performance to overcome the risk of each credit. This is corroborated by studies from sources [9] [10] [11]. This indicates a positive relationship between the CAR and financial performance.

This research was conducted because there were significant challenges to economic growth from the period before the COVID-19 pandemic through to its aftermath. The analysis aimed to assess the bank's financial performance before and after the pandemic and identify the factors affecting this performance. As outlined above, this article is divided into four sections: an introduction, a discussion of methods and research, a discussion of findings, and conclusions.

II. RESEARCH METHODS

The subject of this research is the banking sub-sector firms listed on the IDX. The research methodology is quantitative, involving numerical data and statistical analysis [12]. Secondary data were utilized, obtained from the financial reports or annual reports of firms in the banking sub-sector available on the IDX official website, covering the period from 2018 to 2022. The population included all 47 banking sub-sector companies listed on the IDX. The sampling method used was nonprobability sampling, specifically purposive sampling, with the criteria being the banking sub-sector companies on the IDX that conducted initial public offerings (IPO) before 2018. Based on these criteria, a sample of 37 companies over 5 years was selected, resulting in 185 data points.

From the material described above, the following research model can be obtained:

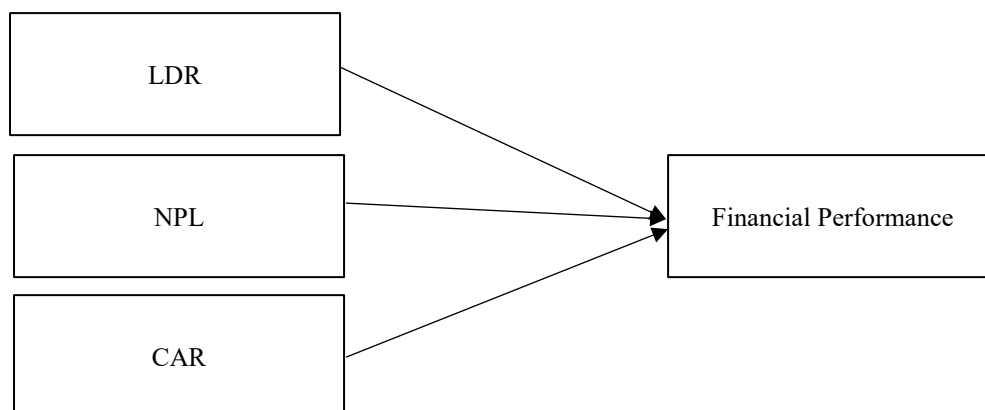


Figure 1. Research Model

Source: Processed Data (2024)

Based on the described research model, the hypotheses of this study are as follows:

Loan to deposit ratio is used to see how well a bank collects and distributes funds to the public. By channeling and collecting funds from the public, it is hoped that the bank can make a profit, the higher the percentage of the LDR, the better the financial performance of the bank. Therefore, the following hypothesis is built.

H₁: There is a positive influence between LDR on financial performance.

Non-performing loans show how much the bank's ability to manage NPL in a bank, the greater the number of NPL, the more it will affect the bank's financial performance. Therefore, the following hypothesis is built.

H₂: There is a negative influence between NPL on financial performance.

The capital adequacy ratio is used to see how well a bank can handle the risks that will occur. The higher the CAR value, the better the financial performance of the bank in bearing risk. Therefore, the following hypothesis is built.

H₃: There is a positive influence between the CAR on financial performance.

Tests were carried out using Eviews software version 13, utilizing panel data. The research involved several tests: the Chow test, Hausman test, and LM test, as well as descriptive statistics, the F test, the coefficient of

determination test, and the T test. In regression analysis, it is typically necessary to perform classical assumption tests. However, when using panel data regression analysis, the classical assumption test is not performed. According to Gujarati, panel data can more effectively detect and measure impact that cannot be captured by cross section or time series method alone [13]. The multiple regression equation is as follows.

$$ROA = \alpha + \beta_1LDR + \beta_2NPL + \beta_3CAR$$

III. RESULT AND DISCUSSION

A. Result

The results obtained from the test data of 185 data show that:

Table 1. Model Selection Test

Testing	Decisions	Results
Chow Test	CEM & FEM	FEM
Hausman Test	REM & FEM	FEM

Source: Eviews13 Processed Data (2024)

From Table 1, it can be seen that the Chow test model chosen is FEM because the probability value is less than 0.05. For the Hausman test, the selected model is FEM because the results of the analysis using this method show that the probability value is less than 0.05. The analysis did not continue with the LM test because, from the two tests that had been carried out, the FEM model was selected. Therefore, in this analysis, researchers used the FEM model to continue data analysis.

Table 2. Descriptive Statistic

	Mean	Median	Maximum	Minimum	Std. Dev.
LDR	86,11357	84,0000	177,2900	12,3200	25,5964
NPL	2,215838	1,6000	16,61000	0,0000	2,0587
CAR	26,61508	22,7700	169,9200	6,9200	21,7596
ROA	0,800703	0,8000	21,62000	-19,5800	3,2114

Source: Eviews13 Processed Data (2024)

From the descriptive statistical analysis in Table 2 above, it can be seen that the lowest LDR value is 12,3200, the highest value is 177,2900, the median value is 84,0000, while the average is 86,1136, and the std. dev. is 25,5964. The lowest NPL value is 0,00, the highest is 16,6100, the median value is 1,6000, while the average is 2,2158, and the std. dev. is 2,0587. The lowest CAR value is 6,9200, while the highest value is 169,9200, the median value is 22,7700, the average is 26,61508 and the std. dev. is 21,7596. Additionally, the lowest ROA value is -19,5800, the highest value is 21,6200, the median value is 0, 8000, the average is 0.8007 and the std. dev. is 3,2114.

Table 3. F-Test & Coefficient Determination

R-squared	0.104324
Adjusted R-squared	0.089479
S.E. of regression	3.064431
Sum squared resid	1699.724
Log likelihood	-467.6562
F-statistic	7.027363
Prob(F-statistic)	0.000170

Source: Eviews13 Processed Data, (2024)

From Table 3 of the Anova analysis (F count) above, it can be seen that the significance F value is 0,000, which is less than 0,05 and the F value of 7,027363 is greater than the F table value of 2, 65. This

indicates that the research model is feasible to continue. The R-squared value is 0,104324 or 10,43%. This show that the variables LDR, NPL, and CAR collectively explain 10,43% of the impact on ROA, with the remaining 89,57% is influenced by other variables.

Table 4. T-Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.796263	0.907333	1.979717	0.0493
LDR	0.007891	0.008876	0.888988	0.3752
NPL	-0.393248	0.110393	-3.562244	0.0005
CAR	-0.028087	0.010386	-2.704253	0.0075

Source: Eviews13 Processed Data, (2024)

From Table 4 it is observed that the constant value is 1,796263, suggesting that if the values of LDR, NPL, and CAR are all 0, ROA would increase. The regression coefficient value for LDR is 0,007891 which shows a positive influence between LDR on ROA. The regression coefficient value for NPL is -0,393248 which indicates a negative influence between NPL on ROA. The coefficient value for CAR is -0,028087 which indicates a negative influence between CAR and ROA. The probability value of LDR is 0,3752, this value is greater than 0,05, H_0 is accepted, and H_1 is rejected, indicating that there is no influence of LDR on ROA. The value of NPL is 0,0005 less than 0,05, H_0 is rejected, and H_2 is accepted, meaning that there is an influence of NPL on ROA. And the value of CAR is 0,0075 less than 0,05, H_0 is rejected, and H_3 is accepted, indicating that there is an influence of CAR on ROA.

Judging from Table 4, the results of the multiple regression equation are as follows.

$$ROA = 1,7962 + 0,0078LDR - 0,3932 NPL - 0.0280CAR$$

B. Discussions

The impact of the LDR on financial performance

Based on the above analysis of the effect of LDR on financial performance, as measured by ROA, it can be concluded that the LDR does not impact financial performance. Therefore, the theory suggesting that a higher loan-to-deposit ratio leads to better bank performance cannot be supported by this study. The observed results could be attributed to reductions in assets and profit levels experienced by banks during the pandemic. This indicates that fluctuations in the loan-to-deposit ratio do not influence a bank's financial performance, which challenges theories proposed in previous research. Consequently, hypothesis 1 (H_1) is rejected.

The impact of the NPL on financial performance

based on the analysis above, it is evident NPL have a negative effect on the bank's financial performance as measured by ROA. An increase in NPL correlates with poorer financial performance due to reduced income, as funds are allocated to cover losses from these loans. This underscores the significance of the non-performing loan indicator is assessing bank financial performance. These findings support previous research theories, leading to the acceptance of hypothesis 2 (H_2).

The impact of the CAR on financial performance

The CAR has a negative influence on the bank's financial performance. This ratio shows how much capital a bank has to bear risk. This happens because of the regulation set by OJK that the minimum CAR is 12%. Therefore, banks must achieve the CAR target. This shows that if the capital adequacy ratio decreases, it will cause the bank's financial performance to be disrupted. Therefore, hypothesis 3 (H_3) is rejected.

IV. CONCLUSION

This study aimed to assess the impact of the LDR, NPL, and CAR on the financial performance of banks listed on the Indonesia Stock Exchange (IDX) from 2018 to 2022. The findings indicated that the LDR does not affect financial performance measured by the ROA, thus contradicting previous research theories. Changes in LDR, whether increases or decreases, do not influence a ban's financial performance. On the

other hand, NPL have a negative impact on bank financial performance, aligning with previous research theories. Similarly, the CAR also negatively affects bank financial performance, which causes this study not to strengthen the theory of previous research. Because every increase will affect the bank's financial performance.

From the research that has been done, it can be a benchmark for a bank to see what factors can affect the bank's financial performance. Therefore, a bank should maintain the stability of its financial performance. The suggestion from this research is that apart from looking at these three factors, further researchers may consider adding additional factors that could influence the bank's financial performance.

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