

THE EFFECT OF NON-PERFORMING LOAN (NPL), CAPITAL ADEQUACY RATIO (CAR) & LOAN TO DEPOSIT RATIO (LDR) ON RETURN ON ASSETS (ROA) (CASE STUDY: GOVERNMENT-OWNED NATIONAL BANKS)



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Abstract

This study aims to analyze the influence of Non-Performing Loans (NPL), Capital Adequacy Ratio (CAR), and Loan to Deposit Ratio (LDR) on Return on Assets (ROA) in state-owned conventional commercial banks during the 2019–2023 period. The research employs multiple linear regression analysis using SPSS 25. The sample consists of four state-owned conventional commercial banks. The F-test results indicate that NPL, CAR, and LDR simultaneously have a significant effect on ROA, with an F-value of 21.925 and a significance level of 0.000. Partially, only the NPL variable has a significant effect on ROA, as shown by a t-value of -5.312 and a significance level of 0.000. Meanwhile, the CAR and LDR variables do not have a significant effect on ROA, with significance values of 0.318 and 0.961, respectively. Thus, it can be concluded that only NPL significantly affects the bank's profitability as measured by ROA.

Keywords: Non-Performing Loans, Capital Adequacy Ratio, Loan to Deposit Ratio, Return on Assets, State-Owned Commercial Banks

INTRODUCTION

The banking sector is a strategic component of the national financial system, serving a primary role as a financial intermediary institution. The financial performance of banks, particularly state-owned banks in Indonesia, serves as a crucial indicator reflecting the stability and efficiency of the national financial system (Fatchur Roziq et al., 2023). One of the key measures of this performance is Return on Assets (ROA), which represents the ratio of net income to total assets. ROA reflects management's effectiveness in asset utilization, operational efficiency, accountability in managing public funds, and contribution to national economic stability.

From these explanations, ROA is considered one of the most important ratios in measuring banking performance compared to the Net Interest Margin (NIM). In a study conducted by Puspitasari et al. (2020), it was found that NIM significantly affects ROA, but only as an intermediary variable. This means that NIM is not the ultimate goal of financial performance, but rather a channel that directs operational efficiency toward improving ROA.

Based on previous studies related to ROA, several ratios believed to significantly influence ROA are the Non-Performing Loan (NPL), Capital Adequacy Ratio (CAR), and Loan to Deposit Ratio (LDR). Research conducted by Nguyen (2023) in *Credit Risk and Financial Performance in Vietnam* shows that NPL has a significant negative effect on ROA, LDR negatively affects ROA, while CAR has no direct effect, indicating that the dynamics of these variables depend on each country's context.

The Non-Performing Loan (NPL) ratio represents the proportion of non-performing loans to total loans, reflecting the quality of a bank's assets. An increase in NPL indicates declining asset quality, increased loss risk, and reduced interest income, which negatively affects bank profitability, including Return on Assets (ROA). This is supported by findings from Sufian & Habibullah (2014), which show a significant negative relationship between NPL and ROA in the Southeast Asian banking sector. Meanwhile, the Capital Adequacy Ratio (CAR) reflects a bank's capital sufficiency in facing risks. A high CAR demonstrates the bank's ability to manage risks and expand its business stably, potentially increasing income and positively impacting ROA, as supported by various Scopus-indexed studies.

The Loan to Deposit Ratio (LDR), as examined by Kasmir (2015), measures the proportion of loans disbursed relative to third-party funds, reflecting the efficiency of fund utilization. A high LDR indicates the bank's ability to use funds to generate profit, thus potentially increasing profitability and reducing the risk of bad loans. Conversely, a low LDR suggests excess liquidity that is not optimally utilized, causing the bank to miss opportunities for higher earnings.

Data from state-owned banks show that the relationship between financial ratios such as CAR, NPL, and LDR with Return on Assets (ROA) does not always align with theory or previous research findings (Demila & Sundari, 2023). For instance, although CAR at BNI and Bank Mandiri decreased, ROA increased—contradicting Hery's (2018) theory, which suggests a direct relationship. Similarly, the decline in NPL does not always correspond with an increase in ROA, as observed in Bank Mandiri and BRI, which contradicts Ismail's (2018) findings. Likewise, the decline in LDR at BNI and BTN was accompanied by an increase in ROA, opposing Kasmir's (2015) view that LDR moves in the same direction as ROA.

Generally, the ROA of these banks fluctuated between 2019–2023, but most remained above Bank Indonesia's minimum standard of 1.5%, indicating sound asset management.

Several previous studies have examined the factors influencing banks' Return on Assets (ROA), but the results remain inconsistent. Research by Pinasti (2018) found a negative relationship between CAR and ROA among commercial banks in Indonesia, while Setyarini (2020) found a positive relationship between the two. Given this theoretical and empirical gap, further research is required to explore the influence of CAR on ROA.

According to data from the Ministry of Finance (2023), State-Owned Banks (HIMBARA) contribute 22% of national revenue, highlighting their strategic role not only in generating profit through dividends but also in supporting economic growth, financial inclusion, and government programs. This creates a dilemma between their commercial and social functions. Considering the inconsistent findings of previous studies and the lack of recent research focusing on the factors influencing the profitability of state-owned banks, this study aims to analyze the effect of CAR, NPL, and LDR on ROA in HIMBARA banks.

LITERATURE REVIEW

Non-Performing Loan (NPL)

According to Atichasari et al. (2023), a non-performing loan refers to a loan granted to a debtor that has not been or cannot be repaid in accordance with the terms and repayment period agreed upon with the bank. Factors causing loan default include the debtor's business failure, force majeure, and termination of employment of the debtor as an employee.

Capital Adequacy Ratio (CAR)

According to Hamidu (2013), the Capital Adequacy Ratio (CAR) is a measure of a bank's capital adequacy that reflects its ability to allocate funds to mitigate potential loss risks (downside risk). CAR represents the ratio between a bank's own capital and its risk-weighted assets (RWA). It is positively correlated with profit changes, meaning that a higher CAR indicates greater profitability, as higher capital adequacy supports better risk management and operational stability.

Loan to Deposit Ratio (LDR)

According to Kasmir (2015), the Loan to Deposit Ratio (LDR) is a ratio used to measure the proportion of total loans disbursed compared to total public funds and the bank's own capital. The LDR is calculated by dividing the total loans disbursed by the total third-party funds (TPF).

Return on Assets (ROA)

According to Setiawan (2017), Return on Assets (ROA) is a ratio used to measure a bank's ability to generate profit and manage its overall business efficiency. The higher the ROA value, the better the bank's performance in utilizing its assets effectively.

RESEARCH METHOD

Framework

Based on the literature review on CAR, NPL, and LDR on Profit and their Impact on Banking Return on Assets (ROA), the following conclusions can be formulated in this study.

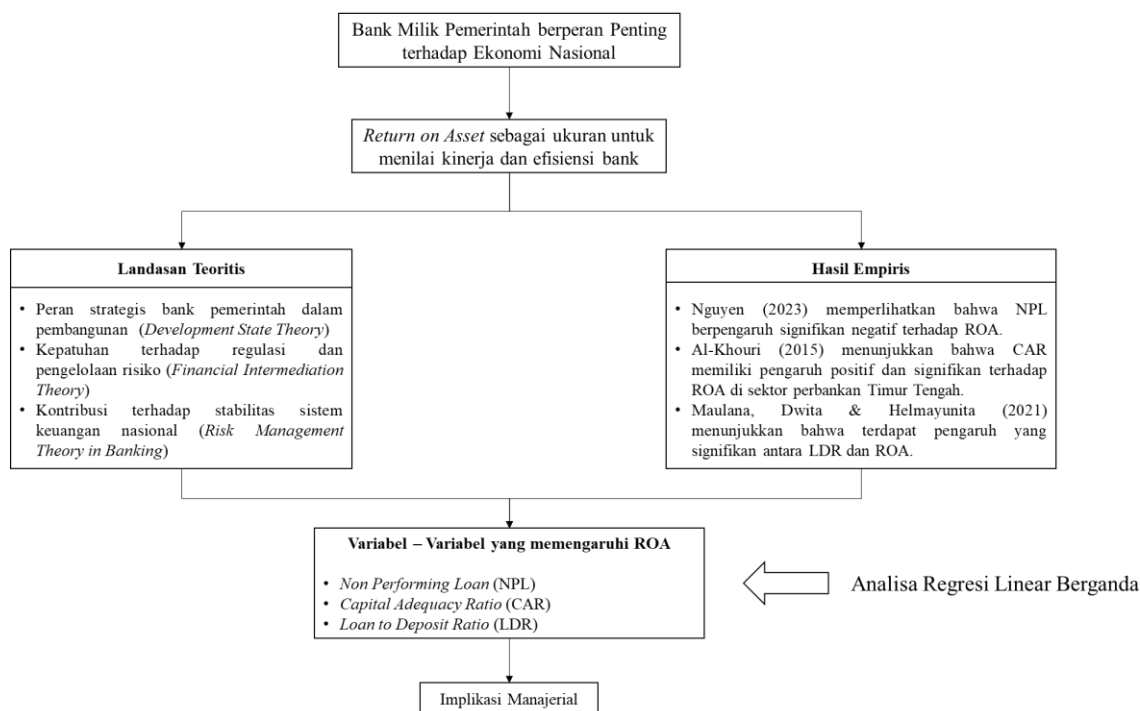


Figure 1.
Research Framework

Research Population

According to Sugiyono (2018), a population is a general area consisting of objects or subjects that possess specific qualities and characteristics determined by the researcher to be studied and from which conclusions are drawn. The population encompasses all characteristics inherent in these objects or subjects. The population used in this study consists of the financial statements of four (4) state-owned banks during the 2019–2023 period.

Type of Research Data

The type of data used in this study is quantitative data. According to Sugiyono (2018), the quantitative method is a research approach based on concrete data. Such data are expressed in numerical form, measured using statistical tools for calculation and analysis, and used to draw conclusions related to the research topic.

Source of Research Data

Based on classification, there are two types of data sources: primary and secondary data. In this study, the data source used is secondary data derived from the financial statements of state-owned banks from 2019 to 2023. According to Chen, Fu, Juo, and Yu (2019), data that are not provided directly to the data collector are referred to as secondary data.

Research Location and Period

The research was conducted by observing state-owned banking companies over a five-year period (2019–2023) using official financial reports from each bank or their official websites. The research period lasted for three (3) months, from January 2025 to March 2025, beginning with the formulation of the research title, review of previous studies or journals, and collection of supporting sources.

Data Collection Techniques

According to Sugiyono (2018), data collection techniques are the most strategic steps in research, aimed at obtaining data to draw conclusions. This study used two (2) data collection methods, namely:

1. Documentation Method

According to Sugiyono (2018), the documentation method is employed when direct contact with research subjects is not feasible. In this study, the documentation method involved obtaining financial report data from the official websites of each state-owned bank.

2. Literature Review

This method involved using research data sources such as journals, previous studies, and infographics from sources related to the banking sector.

RESULT AND DISCUSSION

Classical Assumption Test

Normality Test

The normality test is one of the stages in the classical assumption test, which aims to determine whether the dependent and independent variables in the regression model are normally distributed or not. A good regression model is one in which the data are normally or approximately normally distributed.

In this study, data screening was performed at the preliminary stage. Screening serves to detect outlier variations by converting data values into standardized scores or z-scores. According to Ghazali (2009), for small sample cases (less than 80), standardized scores with values ≥ 2.5 are considered outliers. For large samples, data are considered outliers if the standardized score ranges between ≥ 3 and 4. Since this study uses 80 samples, data with a value ≥ 3 are regarded as outliers.

To detect data normality, the non-parametric Kolmogorov–Smirnov (K–S) test can be applied. The hypotheses for this test are as follows:

H_0 : Data are normally distributed

H_1 : Data are not normally distributed

H_0 will be accepted if the K–S test result has a significance value above $\alpha = 0.05$. The following table presents the results of the non-parametric Kolmogorov–Smirnov (K–S) normality test after the outlier adjustment.

Table 1.
Kolmogorov–Smirnov Normality Test Results
One-Sample Kolmogorov-Smirnov Test

		NPL	CAR	LDR	ROA
N		20	20	20	20
Normal Parameters ^{a,b}	Mean	3.0790	20.9700	88.0175	1.9010
	Std. Deviation	.76016	2.11191	8.15132	.95466
	Absolute	.149	.198	.157	.149

Most Extreme Positive	.149	.198	.157	.108
Differences Negative	-.099	-.143	-.125	-.149
Kolmogorov-Smirnov Z	.668	.884	.703	.668
Asymp. Sig. (2-tailed)	.763	.416	.706	.763

a. Test distribution is Normal.

b. Calculated from data.

Source: Results of Secondary Data Analysis using SPSS 25

Based on Table 1 above, the K-S value for the ROA variable is 0.668 with a significance level of 0.763. Meanwhile, the NPL variable has a K-S value of 0.668 with a significance level of 0.763. The CAR variable has a K-S value of 0.884 with a significance level of 0.416. Furthermore, the LDR variable has a K-S value of 0.703 with a significance level of 0.706. From these results, it can be concluded that the values for all four variables are above 0.05 (≥ 0.05), indicating that all variables are normally distributed. To illustrate this graphically, the following is a histogram graph of the normally distributed variables and a normal probability plot (P-Plot).

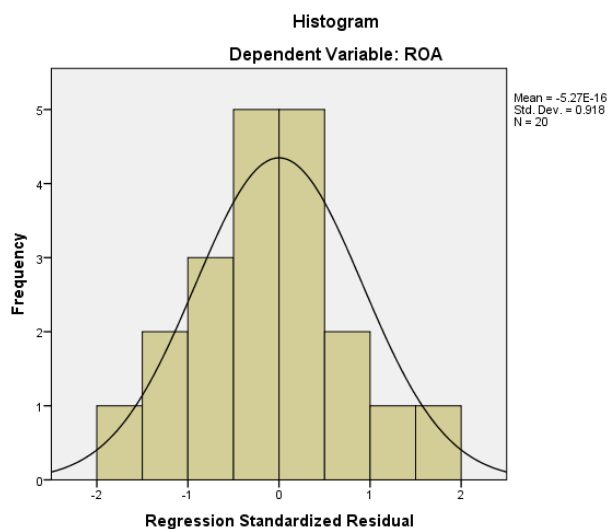


Figure 2.
ROA Histogram Graph

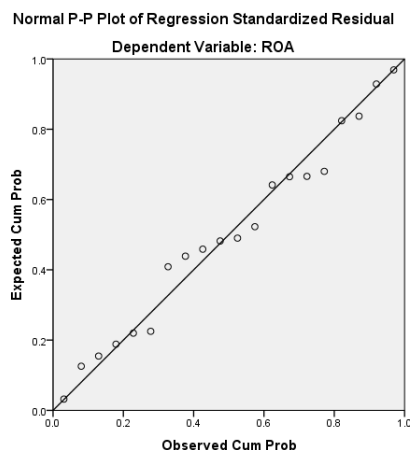


Figure 2.
Normality Test Results: Normal P-Plot

From histogram 1, it can be concluded that the data are normally distributed because the histogram graph shows a symmetrical distribution pattern. Furthermore, the normality test can be demonstrated through the normal P-Plot graph shown in Figure 2, where the points are spread around the diagonal line of the P-Plot graph. Based on these two figures, it can be concluded that the data used in the study are normally distributed, thus the regression model meets the assumption of normality. To further clarify the results of the normality test, the following table shows the results of the normality test using the non-parametric Kolmogorov-Smirnov (K-S) statistical test.

Table 2.
Results of the Non-Parametric Kolmogorov-Smirnov (K-S) Normality Test
One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		20
Normal Parameters ^{a,b}	Mean	0E-7
	Std. Deviation	.42227607
Most Extreme Differences	Absolute	.105
	Positive	.105
	Negative	-.101
Kolmogorov-Smirnov Z		.470
Asymp. Sig. (2-tailed)		.980

a. Test distribution is Normal.

b. Calculated from data.

The Kolmogorov-Smirnov (K-S) non-parametric normality test table shows a K-S value of 0.470 with a significance level of 0.980. This significance value is greater than the 0.05 level. Therefore, it can be concluded that H_0 is accepted, meaning the residual data is normally distributed.

Multicollinearity Test

The multicollinearity test is useful for examining whether a regression model from a study finds correlations between independent variables. A good regression model should have no correlation between independent variables. The multicollinearity test can be assessed using the Tolerance and Variance Inflation Factor (VIF) values. Commonly used values to indicate multicollinearity are those with a Tolerance value ≤ 0.10 and a VIF value ≥ 10 . Conversely, if the Tolerance value ≥ 0.10 and a VIF value ≤ 10 indicates no multicollinearity among the variables used in the study. The following are the results of the multicollinearity test, considering these two values.

Table 3.
Multicollinearity Test Results
Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	3.580	2.055		1.742	.101		
1 NPL	-1.010	.190	-.805	-5.312	.000	.533	1.876
CAR	.065	.063	.144	1.031	.318	.626	1.599
LDR	.001	.015	.006	.050	.961	.759	1.317

a. Dependent Variable: ROA

Source: SPSS 25 Output (Processed secondary data)

Based on the results of the multicollinearity test, it shows that no independent variables have a Tolerance value of less than 0.10 (≤ 0.10) and the Variance Inflation Factor (VIF) value does not exceed 10 (≥ 10). Therefore, it can be concluded that the five independent variables used in the study are free from multicollinearity, meaning there is no correlation between them.

Autocorrelation Test

The autocorrelation test aims to observe sequential variables as long as they are related to each other. A good regression model is one that is free from autocorrelation. The deviation model used in this study is the Durbin-Watson Test (DW test). The test rule for determining whether a regression model is free from autocorrelation is if the Durbin-Watson value lies between dU and (4-dU) or $dU < DW < 4-dU$. The following are the results of the Durbin-Watson autocorrelation test (DW Test) in this study.

Table 4.
Autocorrelation Test Results
Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.897 ^a	.804	.768	.46016	1.623

a. Predictors: (Constant), LDR, CAR, NPL

b. Dependent Variable: ROA

The Durbin-Watson test results show a value of 1.623. The Durbin-Watson test value is compared with the table value using a 5% confidence interval ($\alpha = 5\%$) for a sample size of 20 with 3 independent variables. The table yields a dL value of 0.9976 and a dU value of 1.6763. Based on the Durbin-Watson table, the calculated Durbin-Watson value lies between dU and (4-dU), or $dU < DW < 4-dU$, or $0.9976 < 1.623 < 1.6763$. From these results, it can be concluded that the Durbin-Watson value passes the autocorrelation test.

Heteroscedasticity Test

The final test for classical assumptions is the heteroscedasticity test. This test aims to determine whether the regression model in the study exhibits unequal variances in the residuals from one object to another. A good regression model is one that exhibits homoscedasticity. A common way to detect the presence or absence of heteroscedasticity is to look at the scatterplot between the predicted value of the dependent variable (SRESID) and the residual error (ZPRED).

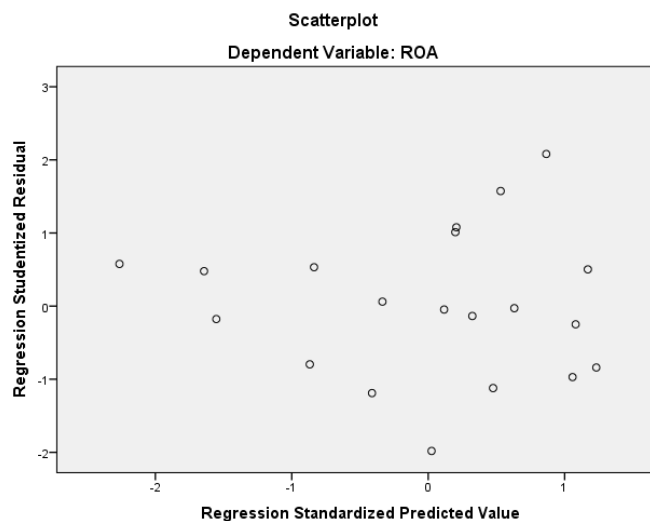


Figure 3.

Results of Hetersokedasticity Test Using a Scatterplot

Source: SPSS 25 Output (Processed Secondary Data)

The scatterplot in Figure 3 shows no clear pattern, and the points are spread above and below 0 on the Y-axis. This indicates that there is no heteroscedasticity in the applied regression model. To increase the accuracy of the results, further statistical testing is required using te Park test, as shown in Table 4.6 below.

Table 5.
Results of Heteroscedasticity Test Using the Park Test
Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-15.635	10.890		-1.436	.170
	NPL	-1.136	1.008	-.339	-1.127	.276
	CAR	.055	.335	.046	.165	.871
	LDR	.166	.079	.533	2.114	.051

Source: SPSS 25 Output

Based on the Pak Test results in Table 5, it can be seen that the significance value for all variables used in the study is greater than 5% (sig > 0.05), thus it can be concluded that the regression model does not have heteroscedasticity or is homoscedastic.

Hypothesis Testing

Hypothesis testing is a method for making decisions based on analysis, such as experimental tests or observations. Hypothesis testing consists of three types of tests: simultaneous significance testing (F-statistic), individual parameter testing (t-statistic), and the coefficient of determination (R²) test.

Simultaneous Significance Testing (F-Statistic)

Simultaneous Significance Testing is conducted using the F-test to determine whether all independent variables (NPL, CAR, and LDR) have a significant effect on the dependent variable (ROA). The following are the results of the F-statistic test conducted in this study.

Table 6.
Results of Simultaneous Significance Testing (F-Statistic)
ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.928	3	4.643	21.925	.000 ^b
	Residual	3.388	16	.212		
	Total	17.316	19			

a. Dependent Variable: ROA

b. Predictors: (Constant), LDR, CAR, NPL

Source: SPSS 25 Data Output

Based on the results of the F-statistic test in the table above, the F-value for the regression model is 21.925 with a significance level of 0.000. This F-value is greater than 4, and its significance level is less than 5%. Therefore, it can be concluded that all independent variables, consisting of NPL, CAR, and LDR, simultaneously influence ROA.

Individual Parameter Significance Test (t-Statistic Test)

The t-statistic test essentially indicates the extent to which an independent variable explains the dependent variable (Gozali, 2009). For partial influence testing, the t-value and its significance level can be examined. The t-value indicates a positive or negative influence between the independent variable and the dependent variable. Furthermore, the significance level is assessed by comparing the independent variables at a 5% significance level ($\alpha = 0.05$). If the significance value is less than 0.05 (<0.05), a significant influence is present. However, if the significance value is greater than 0.05, there is no significant effect between the independent variable and the dependent variable. Table 4.8 shows the results of the t-statistic test.

Table 7.
Results of the t-statistic test

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.580	2.055		1.742	.101
1 NPL	-1.010	.190	-.805	-5.312	.000
CAR	.065	.063	.144	1.031	.318
LDR	.001	.015	.006	.050	.961

a. Dependent Variable: ROA

Table 7 above shows the influence of each variable, NPL, CAR, and LDR, on ROA, as seen from their signs and significance levels. The NPL variable shows a negative influence on ROA, while both NPL and CAR show a positive influence. Furthermore, the significance level of the t-test results shows that the NPL variable has a significance level below 5% (0.05), thus the NPL variable is declared a variable with a significant influence on ROA (the dependent variable). Meanwhile, the CAR and LDR variables have significance values above 5% (0.05), indicating that they do not have a significant influence on ROA (the dependent variable).

The t-statistic test results show the results of the multiple regression equation, which can be written as follows:

$$ROA = 3.580 - 1.010 \text{ NPL} + 0.065 \text{ CAR} + 0.001 \text{ LDR}$$

Based on the multiple linear regression equation, the constant value is 3.580. The constant of 3.580 indicates that the independent variables are considered constant, so the average ROA is 3.580. The results of the partial t-statistical test are as follows:

1. The Effect of Non-Performing Loans (NPLs) on Return on Assets (ROA)

The partial t-statistical test (t-statistical test) between NPLs and ROA shows a t-value of -5.312 with a significance level of 0.00. This significance value is smaller than the 5% significance level (t-test <0.05). This indicates that NPLs have a significant positive effect on ROA. The coefficient value is -1.01, meaning that every 1% increase in NPLs results in a 1.01% increase in ROA. Therefore, it can be concluded that NPLs have a significant

negative effect on ROA and are acceptable. Based on the research hypothesis, H01 is accepted, while H0a is rejected.

2. The Effect of the Capital Adequacy Ratio (CAR) on Return on Assets (ROA)

The results of the partial test (t-statistic) between CAR and ROA showed a t-value of 1.031 with a significance level of 0.318. This value is greater than the significance level of 0.05 ($t\text{-test} > 0.05$). From these findings, it can be concluded that CAR has a negative effect on ROA. The coefficient is 0.065, meaning that every 1% increase in CAR will result in a 0.065% increase in ROA. Therefore, it can be concluded that the CAR ratio has no effect on ROA. Based on the research hypothesis, H0b is accepted, while H1b is rejected.

3. The Effect of the Loan to Deposit Ratio (LDR) on Return on Assets (ROA)

The results of the t-statistic test between LDR and ROA yielded a t-value of 0.05 with a significance level of 0.961, indicating a significance level exceeding 0.05 ($t\text{-test} > 5\%$). The coefficient value of 0.961 indicates that a 1% increase in LDR will result in a 0.961 increase. Therefore, this result indicates that LDR has no effect on ROA. Based on the research hypothesis, H0c is accepted, while H1c is rejected.

Coefficient of Determination (R² Test)

The coefficient of determination (R²) is used to measure or assess the model's ability to explain variation in the dependent variable. The required coefficient of determination value is between 0 and 1 ($0 < R^2 < 1$). A small R² value indicates that the independent variable's ability to explain the dependent variable is very limited. Conversely, if the R² value is close to 1, the independent variable provides perfect information in predicting the dependent variable (Gozali, 2009). The following table shows the results of the coefficient of determination test.

Table 8.
Results of the t-Statistic Test
Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.897 ^a	.804	.768	.46016

a. Predictors: (Constant), LDR, CAR, NPL

In this statistical calculation, the R² value used is the adjusted R Square, which is the determination value adjusted by the sample data to the frequency data. Based on the results of the coefficient of determination (R²) test in Table 8, the adjusted R square value is 0.768. This means that 76.8% of the variation in ROA can be explained by the three independent variables (LDR, CAR, and LDR). The remaining 23.2% is explained by other factors not used in this study. The Standard Error of Estimate (SEE) in this study is 0.46016. This value indicates that the regression model used is quite good, because the greater the SEE, the better the regression model is at predicting the dependent variable.

Discussion of Results

H1 (H01 & Ha1): Non-Performing Loans (NPL) on Return on Assets (ROA)

The results of the t-statistical test in Table 8 indicate that Non-Performing Loans (NPL) have a significant effect on Return on Assets (ROA). This means that H0a, which states that NPLs have no effect on ROA, is rejected. Meanwhile, H1a, which states that NPLs do affect ROA, is accepted.

Non-Performing Loans (NPLs) have a significant effect on Return on Assets (ROA), as demonstrated by a significance value of less than 5% (t-test < 5%). Meanwhile, a negative coefficient indicates that the higher the NPL, the lower the bank's ROA. Non-Performing Loans (NPLs) are non-performing loans or bad debts in a bank. Therefore, the research results indicate that NPLs impact the bank's income-to-ROA ratio. This is due to the impact of the Covid-19 pandemic in 2020-2021 and the large number of loans disbursed to inappropriate borrowers. The results of this hypothesis align with research conducted by (Ekinici & Poyraz, 2019), which found that NPLs significantly influence ROA.

H2 (H02 & Ha2): Capital Adequacy Ratio (CAR) on Return on Assets (ROA)

The results of the t-statistical test in Table 8 indicate that the Capital Adequacy Ratio (CAR) does not significantly influence Return on Assets (ROA). From this statement, it can be concluded that H0b, which states that the CAR value has no effect on ROA, is accepted. Meanwhile, H1b, which states that the CAR value has an effect on ROA, can be rejected.

The Capital Adequacy Ratio (CAR) does not significantly influence Return on Assets (ROA), as indicated by a significance value greater than 5% (t-test > 5%). A large coefficient value indicates that the higher the CAR, the greater the bank's ROA. The CAR ratio is an indicator of a bank's ability to cover the decline in its assets resulting from losses due to asset risk. These risky assets tend to limit the amount of capital available for profit-generating activities. A higher CAR, the bank's ability to cover these risky assets, can increase profitability. The results of this hypothesis align with research conducted by (Warrad, 2015) that CAR has no significant effect on ROA.

H3 (H03 & Ha3): Loan to Deposit Ratio (LDR) on Return on Assets (ROA)

The results of the t-statistical test in Table 8 indicate that the Loan to Deposit Ratio (CAR) has no significant effect on Return on Assets (ROA). From this statement, it can be concluded that H0c, which states that the CAR value has no effect on ROA, is accepted. Meanwhile, H1c, which states that the CAR value has an effect on ROA, can be rejected.

The Loan to Deposit Ratio (CAR) has no significant effect on Return on Assets (ROA), as indicated by a significance value greater than 5% (t-test > 5%). A large coefficient value indicates that the higher the LDR, the greater the bank's ROA. The LDR ratio is an indicator to measure a bank's ability to disburse credit from third-party funds, or simply, the ratio of total disbursed credit to total third-party funds from customers. If the LDR increases, the bank's liquidity risk will increase due to potential difficulties in meeting customer obligations. The results of this hypothesis align with research by (Rafinur, Arditha, & Rusmianto, 2023), which found that LDR has no significant effect on ROA.

CONCLUSION

This study aims to analyze the effect of Non-Performing Loans (NPL), Capital Adequacy Ratio (CAR), and Loan-to-Deposit Ratio (LDR) on Return on Assets (ROA) at

four conventional state-owned commercial banks during the 2019–2023 period. Testing was conducted using multiple regression using SPSS 25. The results of the simultaneous test (F test) indicate that all three independent variables (NPL, CAR, and LDR) jointly have a significant effect on ROA, with an F value of 21.925 and a significance level of 0.000.

1. NPL has a significant effect on ROA, indicated by a t-value of -5.312 and a significance level of 0.000 (<0.05). This indicates that the null hypothesis (H_0a) is rejected and the alternative hypothesis (H_1a) is accepted.
2. CAR does not have a significant effect on ROA, with a t-value of 1.031 and a significance level of 0.318 (>0.05). Therefore, H_0b is accepted and H_1b is rejected.
3. LDR has no significant effect on ROA, as evidenced by a t-value of 0.05 and a significance level of 0.961 (>0.05). Therefore, H_0c is accepted and H_1c is rejected.

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