DETERMINANTS OF FINANCIAL PERFORMANCE IN REGIONAL DEVELOPMENT BANKS ON THE ISLANDS OF BORNEO AND JAVA

Ana Dwi Pertiwi

Economic, Gunadarma University, Indonesia

Cite This Article:
Ana Dwi Pertiwi. (2025). DETERMINANTS OF FINANCIAL PERFORMANCE IN REGIONAL DEVELOPMENT BANKS ON THE ISLANDS OF BORNEO AND JAVA. *International Journal Management and Economic*, *4*(2), 130–142.

Abstract: Regional Development Banks are currently faced with increasing demands to adapt and advance given rapid technological innovations, ever-changing market conditions, and increasing competition within the financial services sector. The sample examined in this study consists of ten BPD institutions located on the islands of Kalimantan and Java, selected through purposive sampling methodology. The variables analyzed in this study include NPL, CAR, and BOPO as independent variables, with ROA set as the dependent variable. The analytical techniques used include simple regression analysis as well as multiple regression analysis, using SPSS, Version 26. The findings of this study indicate that the NPL, CAR, and LDR variables exert a significant influence on the ROA ratio of BPD institutions located on the islands of Kalimantan and Java during the period 2019 to 2023, both partially and simultaneously.

Keywords: BOPO, CAR, NPL, ROA

1.   INTRODUCTION

Referring to the Financial Services Authority (OJK), banking assets have shown stable and significant growth over the last decade. Historical data on the assets of commercial banks, presented below, provide a clear picture of the consistently increasing trend.
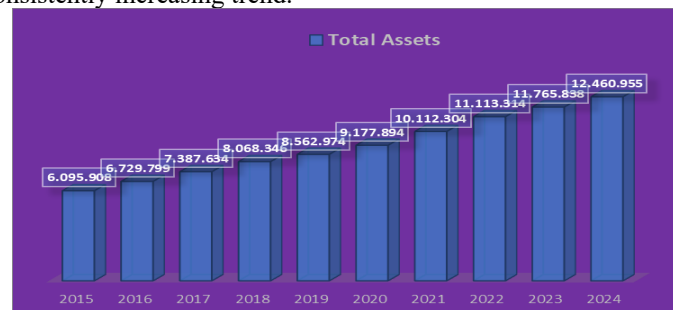

Figure 1: Commercial Bank Total Asset [1] and [2]

Starting in 2015 with a total of commercial banking assets amounting to 6,095,908 billion rupiah, this figure subsequently escalated to 6,729.799 billion in the year 2016, 7,387.634 billion in the year 2017, 8,068.346 billion in the year 2018, and reached 8,562,974 billion in the year 2019. This remarkable

expansion has persisted, culminating in an impressive 9,177.894 billion in the year 2020, 10,112.304 billion in the year 2021, 11,113.314 billion in the year 2022, 11,765.838 billion in the year 2023, and ultimately surpassing the threshold of 12,460,955 billion rupiah in the year 2024.

Regional banks in Indonesia, referred to as Regional Development Banks (RDBs), occupy an important position in driving regional economic progress. These financial institutions were established with the clear objective of enhancing the capacity of micro, small and medium enterprises (SMEs) alongside other important regional development strategies [3]. The RDBs presently confronts with increasing demands to adapt and advance given rapid technological innovations, changing market conditions, and increasing competition within the financial services sector. The challenges highlighted above necessitate the development and execution of robust business transformation strategies designed to improve organizational efficiency and ensure enduring sustainability. In light of the fierce competition posed by leading banking institutions and cutting-edge technology firms, the Regional Development Bank is actively engaged in the digitization of its operational framework, product offerings, and service delivery, fully cognizant that digital integration is imperative for securing a substantial competitive edge [4].

The commendable performance of the RDB is indisputably bolstered by the seamless factors associated with the timely remittance of credit financing installments by the public. The efficacy of this RDB can be assessed through the analysis of banking financial ratios [5]. Historical data from recent years exhibit diverse trends, illustrating the adaptability of conventional RDBs in Indonesia amidst the fluctuating economic and regulatory landscapes.
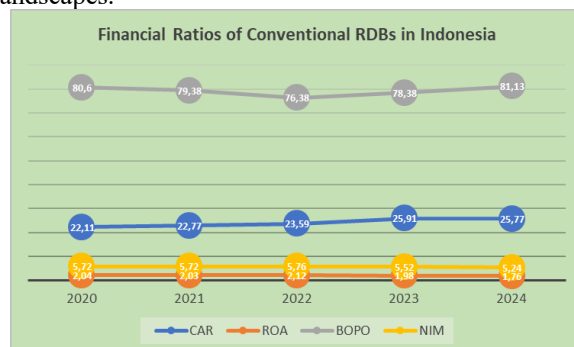

Figure 2: Financial Ratios of Conventional RDBs in Indonesia [2]

The CAR ratio constitutes a critical metric that underscores a banking institution's capacity to absorb prospective losses, rendering it a significant consideration for investors. An elevated CAR not only signifies enhanced performance by the bank but also engenders greater confidence among the public concerning the stability and reliability of the banking institution [6]. The remarkable ascent of CAR from 22.11% in 2020 to 25.91% in 2023, followed by a slight decline to 25.77% in 2024, compellingly demonstrates that Conventional RDBs possess exemplary capitalization. Robust ratios that surpass the regulatory benchmark of 12% unequivocally indicate that these banking entities are adequately equipped to navigate potential economic risks and uncertainties, whilst concurrently fostering the expansion of their respective businesses.

The ROA ratio serves as a significant ratio that elucidates a bank's remarkable ability to generate profits when juxtaposed with the comprehensive value of its assets. ROA effectively delineates asset turnover emanating from a commendable level of sales. Elevated ratios are indisputably beneficial, signifying that assets can circulate at an accelerated pace and yield substantial profits [7]. Empirical data indicate that the ROA of Conventional RDB exhibited fluctuations yet generally stabilized within the 2% range from 2000 to 2022, attaining a zenith of 2.12% in 2022. However, a notable decline transpired in 2023, dropping to 1.98%, and persisted until 2024 at 1.76%. This downward trajectory necessitates vigilant scrutiny, as it may signify heightened pressure on revenues, escalating costs, or diminished efficiencies in asset management.

Operating Expenses to Operating Income (BOPO) act as a pivotal measure of a bank's operational efficiency. BOPO denotes a percentage comparison of a bank's expenditures in relation to its operating income (Ardian Prima et al., 2022). A reduced BOPO indicates that the bank excels in managing its operational costs, culminating in enhanced cost efficiencies and ultimately resulting in augmented profitability for the banking institution [6]. Between 2020 and 2022, there was a discernible enhancement in

operational efficiency, as evidenced by a decrease in the BOPO ratio from 80.60% to 76.38%. This occurrence reflects a positive trend indicative of the banks' concerted endeavors to proficiently manage operational expenses. Nonetheless, in the subsequent years of 2023 and 2024, this ratio exhibited an upward trajectory, escalating to 78.38% and 81.13%, respectively. The increase signifies a more rapid growth in operating expenses relative to the increase in revenue or a potential reduction in operating income, which could adversely impact bank profitability.

The NIM ratio serves as a critical metric for assessing the profitability associated with bank loans and investments. It delineates the disparity between the interest income accrued by a financial institution from interest-generating assets (such as loans) and the interest obligations incurred on liabilities (such as deposits). The NIM ratio has exhibited relative stability from the year 2020 to 2021, maintaining a value of 5.72%, and has remained consistent throughout 2022, during which it experienced a marginal increase to 5.76%. Nevertheless, a downward trajectory was discerned in 2023, decreasing to 5.52%, followed by a subsequent decline to 5.24% in 2024. The reduction in NIM ratio may be attributed to a multitude of factors, including competitive pressures that exert downward influence on lending rates, escalating costs of funds, or alterations in the composition of banks' asset portfolios. Although NIM ratio persists at robust levels, this downward trend signifies a potential challenge in sustaining the profitability derived from core banking operations.

Overall, empirical data pertaining to the financial ratios of Indonesia's Conventional RDBs present a dichotomy of scenarios. While capitalization remains exceedingly strong (as evidenced by the elevated CAR), there are indications of notable challenges regarding profitability and operational efficiency, as demonstrated by the ROA and NIM ratios, alongside the escalating BOPO ratio over the preceding two years.

Investigations concerning the financial performance of RDBs were undertaken by [5], [8], [9], and [6]. Research focusing on the financial performance of RDB both on the island of Java and beyond was conducted by [5]. The results of this investigation indicated that the ratios of CAR, NPL, BOPO, and LDR exerted a significant positive influence on the ROA ratio in RDBs situated on the island of Java. Conversely, for RDBs located outside Java, the findings revealed that only the NPL ratio exhibited a significant effect on the ROA ratio. The study concluded that the ratios of LDR, CAR, and BOPO did not demonstrate a significant impact on the ROA ratio.

Research into the financial performance of RDB in Papua was conducted by [8]. The results of this investigation indicate that, based on ratio analysis employing GPM, NPM, and ROCE ratios, the financial performance of PT BPD Papua for the period spanning 2019 to 2020 may be categorized as Healthy. Nonetheless, with respect to the ROA and ROE ratios, the financial performance of PT BPD Papua during the same timeframe is deemed to be Unhealthy. A separate examination of the financial performance of BPD on the island of Bali was undertaken by [9]. By utilizing an array of financial metrics, including profitability ratios, efficiency, solvency, and liquidity ratios, the findings of this inquiry suggest that, in general, BPD Bali's financial performance in 2022 is anticipated to surpass that of the preceding year.

An investigation into the financial performance of BPD South Sumatra and Bangka Belitung was executed by [6]. The study employed a diverse range of ratios, such as LDR, NPL, BOPO, ROA, ROE, and CAR ratios. The outcomes of the study revealed that, according to the LDR ratio, the financial performance of BPD Sumsel Babel during the years 2011 and 2012 was classified as Healthy, the years 2013 and 2014 were deemed Quite Healthy, while 2015 was classified as Less Healthy. In terms of the NPL ratio, the financial performance of BPD Sumsel Babel for the year 2011 is categorized as LOW, for 2012 and 2014 it is classified as MODERATE to HIGH, for 2013 it is classified as HIGH, and for 2015 it is classified as MODERATE. Based on the BOPO and ROA ratios, the financial performance of BPD Sumsel Babel throughout the period 2011-2015 is classified as Very Healthy. According to the ROE ratio, the financial performance of BPD Sumsel Babel for the year 2011 is classified as Very Healthy, while for the years 2012-2015 it is classified as Healthy. Concerning the CAR ratio, the financial performance of BPD Sumsel Babel for the period 2011-2012 is deemed Healthy, whereas the period 2013-2015 is classified as Very Healthy.

Profitability is widely regarded as one of the most pertinent indicators utilized to evaluate corporate performance [10]. Research conducted by [5] and [10] compellingly utilized ROA ratios to rigorously

assess the financial performance of banks. The study also strategically employed ROA ratios to effectively gauge the financial health of banks. In this study, the financial ratios meticulously examined included CAR, NPL, BOPO, and ROA ratios. In light of the pressing issues articulated earlier, researchers passionately sought to investigate the Determinants of Financial Performance in Regional Development Banks on The Islands of Borneo and Java, with CAR, NPL, and BOPO ratios serving as influential independent variables and ROA ratios as the critical dependent variables. The formulation of the problem raised in this study is crucially connected to how CAR, NPL, and BOPO ratios impact the ROA ratio, both in partially and simultaneously. The aim of this study was to thoroughly evaluate and analyze the significant influence of CAR, NPL, and BOPO ratios on ROA ratios in RDBs located on the islands of Borneo and Java.

2. LITERATURE REVIEW
2.1. Regional Development Bank (RDB)
Regional development banks signify financial entities within the banking sector that have been established by local governmental authorities (LGUs) with the principal objective of enhancing the efficacy of financial development at the local governmental tier. The RDBs are owned by local authorities and/or communities within the jurisdiction of the local government [9]. The RDBs is distinguished as a financial institution in which the predominant shares are held by the local government, thereby facilitating the stimulation of the regional economy. It is the responsibility of the RDB to engage proactively in its role as a catalyst for the regional economy, particularly in the domain of development financing. The principle of regional autonomy grants the district augmented self-sufficiency in the management of financial resources, consequently amplifying its potential to spur economic growth [11].

2.2. Bank Financial Performance
The performance of banking institutions can be assessed through many variables or indicators. Performance is an important goal that every organization should strive to achieve, regardless of its operational context, because it serves as evidence of the organization's ability to manage and allocate its resources effectively [6]. It is imperative for banks to utilize analytical tools designed to ascertain their financial position after the execution of their operational activities over a period of time. The analytical instrument in question relates to evaluating the stability of the bank's financial performance, which can be examined through the results obtained from the calculation of financial ratios [8].

Financial ratio analysis plays an important role in distinguishing the financial strengths and weaknesses of an organization. This ratio calculation is very important for external stakeholders who want to evaluate the company's financial statements. Furthermore, ratio analysis serves as a valuable resource for the organization, assisting managers in the assessment of operational results, rectification of differences arising from deviations from established plans, and avoidance of other adverse events affecting the institution [6].

Profitability ratios are a category of ratios that explain the cumulative impact of liquidity, asset management, and debt on operating results [11]. Return on Assets (ROA) ratio is categorized as one of the profitability ratios. The ROA ratio serves as a metric that shows the efficiency with which a company generates profits relative to its total assets. This ratio is calculated by dividing net income after tax by total assets, and the resulting figure is expressed as a percentage [12]. A high ROA signifies the ability of a profitable organization, characterized by a high level of profit and substantial returns. If profitability increases, the profit earned by the issuer will also increase, further improving the issuer's position regarding asset utilization [13].

2.3. Previous Research
2.3.1. The Effect of NPL Ratio on ROA Ratio.
Credit risk is evaluated using the Non-Performing Loan (NPL) ratio, which compares loans classified as non-performing with total loans outstanding [11]. The NPL ratio assesses a financial institution's ability to manage the bad loans it encounters. A low value of this ratio indicates that the burden borne by the bank is minimal. Conversely, an increase in this ratio signifies an increase in non-performing loans faced by financial institutions, which consequently has an impact on bank profitability [10]. The NPL ratio relates to the allocation of the proceeds of loans or investments granted by the bank associated with the failure of installment payments. An increase in NPLs indicates that bank management has not achieved optimal performance [13].

A number of studies regarding the influence between the NPL ratio on the ROA ratio have been conducted by [10], [14], and [15] . [10] argues that the NPL ratio has a significant effect on the ROA ratio of banks in Indonesia during the period 2019 to 2021. [14] shows that NPL has a negative and significant impact on the ROA of BUMN listed on the IDX from 2013 to 2022. [15]) established that NPL has a negative and significant effect on the ROA of banks listed on the EI during the years 2018 to 2020.

Consequently, hypothesis one in this study has been articulated as follows:
H_1 : The NPL ratio has a significant effect on the ROA ratio of RDBs in Borneo and Java.

2.3.2. The Effect of CAR Ratio on ROA Ratio

Capital is used to reduce and overcome the potential risk of loss arising from fluctuations in the company's assets, most of which come from third-party loans or public funds. The level of capital adequacy can be evaluated through the CAR Ratio [11]. The CAR ratio is a comparative assessment between a banking institution's capital and Risk Weighted Assets, as regulated by government regulations. The implementation of CAR illustrates the capacity of banking institutions in managing the risk of loss, as well as maintaining funds collected from the public [16]. An increase in CAR indicates an improvement in the bank's condition. This indicates that the bank has sufficient capital to manage and allocate to the public in the form of credit, which can generate profits for the bank and contribute to increasing its profitability. Conversely, a declining CAR number can reduce the profitability of the bank concerned [11].

A number of studies on the effect of CAR ratio on ROA ratio have been conducted by [16], and [14]. [16] indicated that the CAR ratio had a significant effect on the ROA ratio of banks in Indonesia during the period 2014 to 2023, showing a positive relationship. [14] shows that the CAR ratio has a positive and significant impact on the RoA ratio in state-owned banks listed on the IDX from 2013 to 2022.

Thus, hypothesis two in this study has been articulated as follows:
H_2 : The CAR ratio has a significant effect on the ROA ratio of RDBs in Borneo and Java.

2.3.3. The Effect of BOPO Ratio on ROA Ratio

BOPO serves as an important benchmark for evaluating the relationship between an entity's operating costs and its operating income. This reference is very important to assess the financial status and distribution of resources spent by the company during the implementation of its operational activities. The BOPO ratio serves as a key indicator to assess the efficiency of cost savings and the overall compatibility of the company in its operational endeavors [13]). A reduced BOPO value signifies increased efficiency in the operational costs of banking institutions, thereby reducing the likelihood of facing financial difficulties. If the bank's operational performance achieves greater efficiency, the result will realize an increase in profitability [14].

A number of studies on the effect of the BOPO ratio on the ROA ratio have been conducted by [7], [14], and [17]. [7] showed that the BOPO ratio exerts a negative and statistically insignificant effect on ROA in the short term, while it also shows a similar negative and insignificant effect on ROA in the long term in the banking sector registered with OJK during the period 2017 to 2021. [14]confirmed that the BOPO ratio had a negative and statistically significant impact on the ROA of state-owned banks listed on the IDX from 2013 to 2022. [17] indicates that the BOPO ratio has a significant partial effect on BCA Bank's ROA for the period 2007 to 2021.

Consequently, hypothesis three in this study has been articulated as follows:
H_3 : The BOPO ratio has a significant effect on the ROA ratio of RDB in Borneo and Java.

2.3.4. The Effect of NPL, CAR and BOPO Ratios on ROA Ratio

A number of studies on the effect of NPL ratios, CAR ratios, and BOPO ratios on bank ROA ratios were conducted by [14] and [17]. [14] Indicated that the CAR, NPL, and BOPO ratios simultaneously affect ROA in state-owned banks listed on the Indonesia Stock Exchange for the period 2013-2022. [17] indicates that the CAR, NPL, and BOPO ratios have a simultaneous influence on ROA at BCA Bank during the period 2007 to 2021.

Consequently, hypothesis four of this study is articulated as follows:

H_4 : The NPL, CAR and BOPO ratios simultaneously have a significant effect on the ROA ratio RDBs in Borneo and Java.

3.   RESEARCH METHOD

The population examined in this study includes every bank across Indonesia. The sample for this study was carefully collected using a purposive sampling method. In this study, the sample consists of four RDBs from Borneo island and six RDBs from Java island. The types and sources of data utilized in this study consist of documentary data and secondary data. The data referenced in this study consisted of annual reports for the years 2019 to 2023, taken from the banks' official web pages.
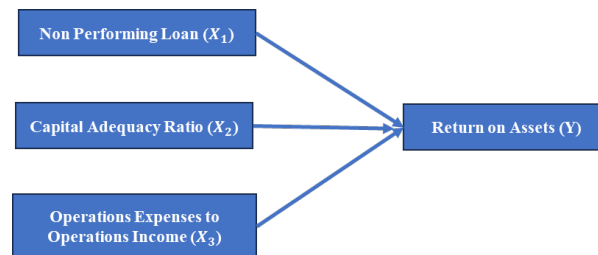
Figure 3: Research Model Conceptual Framework

The independent variables explored in this study are NPL, CAR, and BOPO ratios. In contrast, the dependent variable in this study is the ROA ratio. The analytical techniques used in this study include the classical assumption test consisting of normality test, multicollinearity test, and heteroscedasticity test, along with simple regression test and multiple regression test. The simple regression test was run to check the regression coefficients between the independent variables partially. Hypothesis one, hypothesis two, and hypothesis three assessments were conducted to investigate the partial influence of the NPL, CAR, and BOPO ratios on the ROA ratio.

The equation for the simple linear regression line is represented as follows:
$$\textbf{H: Y = α + b X}$$
Description:

Y	=	ROA Ratio
α	=	Constant
b	=	Regression Coefficient
X	=	Independent variable.

A series of multiple regression analyses were conducted to assess the significance of the combined effect of all independent variables on the dependent variable. Hypothesis four testing was used to analyze the effect of the simultaneous influence of NPL, CAR, and BOPO ratios on the ROA ratio.
$$\textbf{H: } Y = α + b_1X_1 + b_2X_2 + b_3X_3$$
Description: :

Y	=	ROA Ratio
α	=	Constant
b_{1-4}	=	Regression coefficient of the independent variable.
X_1	=	NPL Ratio
X_2	=	CAR Ratio
X_3	=	BOPO Ratio

4.   RESULT OF DISCUSSION
4.1 Overview of The Financial Performance of RDBs in Borneo and Java.

Table 1 compellingly highlights the ratio of NPL to RDBs in Java and Borneo from 2019 to 2023, revealing a stunning minimum value of 0.00 and an impressive maximum value of 4.51. The average ratio of NPL to RDBs across the islands of Java and Borneo during this period was a remarkable 1.0184. Given that the NPL ratio to RDBs consistently remains below 2%, it aligns perfectly with [18], affirming that the Health Level at RDBs in Borneo and Java is unequivocally classified as Very Healthy.

The CAR ratio on RDBs in Java and Borneo from 2019 to 2023 showcases a minimum value of 9.01 and an impressive maximum value of 44.72. The average CAR value for RDBs on the islands during this period

stands at an exceptional 25.8354. The CAR ratio in RDBs in Java and Borneo reflects an average value that far exceeds 12%, thus aligning seamlessly with [18], confirming that the Health Level in RDBs in Java and Borneo is remarkably classified as Very Healthy.

The ratio of BOPO to RDBs on the islands of Borneo and Java from 2019 to 2023 showcases a minimum value of 67.38 and a striking maximum value of 164.90. The average RDBs to BOPO ratio during this period reaches an impressive 83.7352. Given that the average BOPO ratio in RDBs in Java and Borneo is below 90%, this adheres to the standards outlined in [18]. Therefore, it is clear that the health level in RDBs in Java and Borneo is classified as very healthy.

The ROA ratio of RDBs on the islands of Java and Borneo throughout the period from 2019 to 2023 reveals a minimum value of -3.80 and an impressive maximum value of 3.17. The average ROA ratio to RDBs during this timeframe is an encouraging 1.6292. As the average ROA ratio in RDBs in Java and Borneo surpasses 1.5%, it is perfectly aligned with the guidelines set forth in [18]. Consequently, the Health Level in RDBs in Java and Borneo is undeniably regarded as Very Healthy.

Table 1. Descriptive Statistics

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
CAR	50	9.01	44.72	25.8354	6.89849
NPL	50	.00	4.51	1.0184	1.03192
BOPO	50	67.38	164.90	83.7352	21.65101
ROA	50	-3.80	3.17	1.6292	1.52429
Valid N (listwise)	50				

Source: Processed data, 2025

4.2 The Classical Assumption Test
Normality Test

Table 2. Normality Test Results

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		50
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	.29960410
Most Extreme Differences	Absolute	.088
	Positive	.088
	Negative	-.064
Test Statistic		.088
Asymp. Sig. (2-tailed)		.200[c,d]

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. This is a lower bound of the true significance.

Source: Processed data, 2025

Table 2 compellingly demonstrates that the variables explored in this research possess a remarkable value of 0.200. The findings from these significant values decisively establish that the variables analyzed in this study exhibit significance values that surpass the crucial threshold of 0.05. Consequently, we can confidently conclude that all data within this study are indeed normally distributed. The NPL, CAR, BOPO, and ROA variables have been unequivocally confirmed to follow a normal distribution.

Multicollinearity Test

Table 3. Multicoinearity Test Results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	7.269	.240		30.291	.000		
	CAR	-6.372E-6	.007	.000	-.001	.999	.849	1.177
	NPL	-.067	.068	-.046	-.989	.328	.395	2.531
	BOPO	-.067	.003	-.945	-19.469	.000	.356	2.806

a. Dependent Variable: ROA

Source: Processed data, 2025

Table 3 compellingly reveals that the CAR variable boasts a VIF value of 1.177, the NPL variable presents a VIF value of 2.531, and the BOPO variable showcases a VIF value of 2.806. Moreover, considering the tolerance value, the CAR variable has been assigned an impressive tolerance value of 0.849, the NPL variable has a critical tolerance value of 0.395, and the BOPO variable is noted with a tolerance value of 0.356. The aforementioned results convincingly indicate that all independent variables in the study uphold tolerance values exceeding 0.10 and VIF values below the benchmark of 10. Therefore, we can conclusively assert that there is no evidence of multicollinearity among the CAR, NPL, BOPO, and ROA variables.

Heteroscedasticity Test

Table 4. Heteroscedasticity Test Result

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.038	.147		.257	.798
	CAR	.004	.004	.130	.831	.410
	NPL	-.009	.042	-.049	-.211	.833
	BOPO	.001	.002	.154	.636	.528

a. Dependent Variable: ABS_RES

Source: Processed data, 2025

Table 4 powerfully indicates that the significance value associated with the CAR variable is 0.410, the significance value related to the NPL variable is 0.833, and the significance value tied to the BOPO variable is 0.528. All three variables, namely CAR, NPL, and LDR, showcase significance values that exceed the pivotal threshold of 0.05, thereby allowing us to firmly conclude that there is no issue of heteroskedasticity present.

4.3 The Effect of NPL Ratio on ROA Ratio of RDBs in Borneo and Java Island.

Table 5 compellingly demonstrates that the correlation coefficient (R) is impressively calculated to be 0.771. This analysis reveals that the coefficient of determination (R Square) stands at 0.594, powerfully suggesting that NPL variables significantly impact ROA variables by a substantial 59.4%.

Table 5. Hypothesis One Results

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.771[a]	.594	.586	.98131

a. Predictors: (Constant), NPL

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.789	.196		14.231	.000
	NPL	-1.138	.136	-.771	-8.380	.000

a. Dependent Variable: ROA

Source: Processed data, 2025

According to Table 5, the regression equation can be articulated as follows:
Y = a + bX
$Y = 2{,}789 - 1{,}138\ X_1$

The constant number 'a' of 2.789 powerfully indicates that in the absence of any change in the independent variable (when X equals 0), the dependent variable Y (ROA) will hold steady at 2.789. Furthermore, the regression coefficient for NPL is -1.138, and this negative figure dramatically signifies that an increase of just 1 unit in the NPL ratio will lead to a decrease of 1.138 in Y (ROA).

The results of a simple linear regression analysis for hypothesis one, as compellingly illustrated in Table 5, reveal that the significance value of the NPL is an astonishing 0.000. These results indisputably prove that the significance value of the NPL variable falls below the crucial 0.05 threshold. Therefore, it can be confidently concluded that hypothesis one is accepted. The NPL variable exerted a remarkably significant partial influence on the ROA variables of regional development banks in Java and Borneo from 2019 to 2023, demonstrating a negative relationship. The adverse effect of NPL ratios on ROA suggests that heightened levels of troubled loans within financial institutions are closely linked to diminished ROA. These findings powerfully indicate that non-performing loans impose a detrimental impact on banks' financial performance. The critical importance of this relationship highlights that a high incidence of non-performing loans within the banking sector could foreshadow serious issues that threaten the financial stability of banks [14].

The findings of this study are consistent with the work of [11]. Their results show that as credit risk increases, the level of profitability of RDBs, as represented by the ROA ratio, also decreases. This phenomenon arises from the fact that credit, as one of the main offerings of financial institutions, often experiences many payment delays or even defaults, thus jeopardizing the capital of the institution. As a result, an increase in the NPL ratio correlates with an increase in credit risk within the bank, which adversely affects the level of profitability of the institution, and vice versa, the relationship holds.

This research is further corroborated by research conducted by [16] and [13]. [16] explained that the NPL ratio had a significant effect on the ROA ratio of banks in Indonesia during the 2014-2023 period, characterized by a negative correlation. Similarly, [13] highlighted that the NPL ratio significantly affects the ROA ratio of banks in Indonesia for the period 2017 to 2021, also showing a negative relationship.

4.4 The Effect of CAR Ratio on ROA Ratio of RDBs in Borneo and Java Island.

Table 6 compellingly illustrates that the correlation coefficient (R) stands at 0.328. From this enlightening output, the coefficient of determination (R Square) emerges as 0.108. This crucially indicates that the CAR variable has a significant influence on the ROA variable amounting to 10.8%.

Table 6. Hypothesis Two Results

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.328[a]	.108	.089	1.45478

a. Predictors: (Constant), CAR

Coefficients[a]

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	3.503	.805		4.351	.000
	CAR	-.073	.030	-.328	-2.407	.020

a. Dependent Variable: ROA

Source: Processed data, 2025

Referring to Table 6, the regression equation can be delineated as follows:
Y = a + bX
$Y = 3{,}503 - 0{,}073\ X_2$

The constant 'a' value of 3.503 powerfully signifies that in the absence of any change in the independent variable (where variable X equals 0), the ROA value (variable Y) will inevitably be 3.503. On the other

hand, the regression coefficient for CAR is -0.073. This negative value critically suggests that should CAR increase by 1 unit, ROA will consequently decrease by 0.073.

The findings from a simple linear regression analysis pertinent to hypothesis two, as illustrated in Table 5, compellingly reveal that the significance value of CAR is 0.020. Based on these compelling findings, it is irrefutably established that the significance value of the CAR variable falls below the 0.05 threshold. Therefore, we can decisively conclude that hypothesis two is accepted. The CAR variable has undeniably exerted a partial influence on the ROA variables of RDBs in Java and Borneo for the period 2019-2023, characterized by a noteworthy negative relationship.

This finding explains the fact that the bank's reliance on foreign capital for operational funding results in a decrease in earnings, as the bank's primary focus is to ensure liquidity or financier welfare, thus directing incoming profits to shareholders. This situation illustrates that capital adequacy does not always correlate with increased earnings. Instead, there is capital that the entity may use inefficiently. This shows that the bank is able to optimize revenue, but the profits generated are mostly allocated to investors [19].

This research is corroborated by studies examining the effect of CAR ratio on ROA ratio conducted by [20] and [19]. [20] emphasized that the CAR ratio significantly affects the ROA ratio in the banking sector in Indonesia during the period 2014-2023, also showing a negative relationship. Similarly, [19] highlighted that the CAR ratio exerts a significant influence on the ROA ratio of Government Public Banks over the period 2013-2017, again with a negative relationship.

4.5 The Effect of BOPO Ratio on ROA Ratio of RDBs in Borneo and Java Island.

Table 7 compellingly indicates that the correlation coefficient (R) stands at an impressive 0.980. This remarkable output reveals that the coefficient of determination (R Square) is a striking 0.961, which powerfully demonstrates that the BOPO variable exerts a tremendous influence on the ROA variable at 96.1%.

Table 7. Hypothesis Three Results

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.980[a]	.961	.960	.30604

a. Predictors: (Constant), BOPO

Coefficients[a]

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	7.407	.175		42.437	.000
	BOPO	-.069	.002	-.980	-34.170	.000

a. Dependent Variable: ROA

Source: Processed data, 2025

Based on Table 7, the regression equation is powerfully articulated as follows:
Y = a + bX
$Y = 7{,}407 - 0{,}069\ X_3$

The constant "a" takes on the significant value of 7.407. This implies that, in the absence of any alteration in the independent variable (where X equals 0), the dependent variable Y (ROA) is projected to be 7.407. Additionally, the regression coefficient for BOPO is -0.069. This negative figure compellingly suggests that a 1 unit increase in BOPO will result in a reduction in ROA by 0.069.

The insights from a straightforward linear regression analysis pertaining to hypothesis three, as depicted in Table 7, strikingly reveal that the significance value of BOPO is a noteworthy 0.000. These findings decisively demonstrate that the significance value of the BOPO variable is undeniably below 0.05. Therefore, it is conclusively established that hypothesis three is accepted. The BOPO variable undeniably exhibited a partially significant influence on ROA variables in RDBs in Java and Borneo during the period 2019-2023, characterized by a negative correlation direction. The adverse impact of BOPO ratios on ROA ratios compellingly suggests that when operating expenses escalate in relation to operating income, ROA

ratios are likely to decline. This underscores the critical importance of effectively managing rising operating costs to safeguard the Bank's financial performance [14].

The findings of this study resonate powerfully with the research conducted by [13] and [15]. [13] compellingly demonstrated that the BOPO ratio significantly impacted the ROA ratio of banks in Indonesia during the period 2017-2021, revealing a negative relationship direction. [15] further asserted that the BOPO ratio had a partially significant effect on the ROA ratio of banking entities listed in the BEI for the period 2018-2020, also exhibiting a negative relationship direction.

4.6 The Effect of NPL, CAR and BOPO Ratio on ROA Ratio of RDBs in Borneo and Java Island.
Table 8 compellingly demonstrates that the R-Square value stands at an impressive 0.961, indicating that the combined impact of NPL, CAR, and BOPO variables on ROA variables is a staggering 96.1%.
The results from the multiple linear regression analysis pertaining to hypothesis four, as depicted in Table 8, clearly showcase that the simultaneous significance value of the NPL, CAR, and BOPO variables concerning the ROA variable is a striking 0.000. Given these outcomes, it is unequivocally clear that the simultaneous significance values of the NPL, CAR, and BOPO variables in relation to the ROA variables fall below the critical 0.05 threshold. Consequently, we can confidently conclude that hypothesis four is accepted. The NPL, CAR, and BOPO variables have undeniably exerted a significant simultaneous influence on ROA variables within RDBs in Borneo and Java throughout the period of 2019-2023.

Table 8. Hypothesis Four Results

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.980[a]	.961	.959	.30922

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

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	109.451	3	36.484	381.562	.000[b]
	Residual	4.398	46	.096		
	Total	113.850	49			

a. Dependent Variable: ROA

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

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.269	.240		30.291	.000
	CAR	-6.372E-6	.007	.000	-.001	.999
	NPL	-.067	.068	-.046	-.989	.328
	BOPO	-.067	.003	-.945	-19.469	.000

a. Dependent Variable: ROA

Source: Processed data, 2024

In alignment with Table 8, the multiple linear regression equations relevant to hypothesis four are articulated as follows:
Y = 7,269 – 0,067 NPL - 0,00000637 CAR - 0,067 BOPO

The constant value (a) is established at 7.269. This signifies that, in the absence of changes in other independent variables (with NPL, CAR, and BOPO being 0), the ROA will firmly stand at 7.269.

The regression coefficient for NPL is recorded at -0.067. This negative figure powerfully indicates that an increase of 1 unit in NPL will result in a decrease of 0.067 in ROA. The regression coefficient for CAR is -0.00000637. This negative value compellingly suggests that if CAR rises by 1 unit, ROA will drop by 0.00000637. The BOPO regression coefficient is also -0.067. This clearly means that a 1 unit increase in BOPO will lead to a reduction of 0.067 in ROA.

The findings of this study strongly align with the research conducted by [14] and [17]. [14] demonstrated that CAR, NPL, and BOPO ratios exerted a simultaneous influence on ROA ratios in state-owned banks listed on the BEI during the timeframe of 2013-2022. Meanwhile, [17] established that CAR, NPL, and BOPO ratios had a simultaneous effect on the ROA ratio in BCA Bank from 2007 to 2021.

5. CONCLUSION AND SUGGESTION

Based on the compelling findings of this study, it is unequivocally concluded that: (1) The NPL ratio has a notably significant impact on the ROA ratio in RDBs across the islands of Borneo and Java during the period from 2019 to 2023. (2) The CAR ratio exerts a remarkably significant influence on the ROA ratio in RDBs situated in the islands of Borneo and Java in the timeframe of 2019 to 2023. (3) The BOPO ratio demonstrates a compellingly significant effect on the ROA ratio within the islands of Borneo and Java from 2019 to 2023. (4) The combined ratios of NPL, CAR, and BOPO manifest a strikingly significant impact on the ROA ratio of RDBs in the islands of Borneo and Java throughout the period from 2019 to 2023.

Subsequent research emphatically underscores the necessity to incorporate additional variables that could also play a crucial role in influencing banking performance. The objective is to furnish a more comprehensive understanding of the key factors that affect the financial performance of banking institutions. It is highly recommended to broaden the scope of the sample parameters, moving beyond RDBs to include a diverse array of public banking entities, both conventional and Islamic, while also extending the research period to grasp the long-term trends and ramifications of the economic cycle, especially in the aftermath of the pandemic.

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