The Influence of Capital Adequacy Ratio (CAR), Operating Cost of Operating Income (BOPO), and Non-Performing Loan (NPL) on Return On Assets (ROA) at Rural Credit Banks in Indonesia 2020-2022

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Abstract. A bank that does not offer payment services is known as a Rural Credit Bank (BPR). Its operations are conducted according to sharia law and in a traditional manner. The purpose of this study is to ascertain how Rural Credit Bank's Return on Assets is impacted by the Capital Adequacy Ratio, Operating Costs, and Operating Income. With a sample size of 84, the population used in this study consisted of 28 businesses that satisfied the requirements. This study's financial data came from the ibpr-s.ojk.go.id website. IBM SPSS Statistics 26 is the program used for data processing. According to the study's findings, rural credit banks' return on assets in 2020–2022 is not significantly impacted by the capital adequacy ratio. In 2020–2022, Rural Credit Banks' Return on Asset is significantly impacted by Operating Costs and Operating Income. Additionally, in 2020–2022, Rural Credit Banks' return on assets is not significantly impacted by non-performing loans.

Keywords : Capital Adequacy Ratio (CAR), Operating Costs Operating Income (BOPO), Non Performing Loans (NPL), Return On Assets (ROA).

1. Introduction

Banking is described as a financial entity charged with overseeing, collecting, and allocating funds, according to www.ojk.go.id. The banking sector has gained public trust as a result of Indonesia's economy's explosive growth. To raise the standard of living for the vast majority of people in society, the banking sector gathers money from the public in the form of deposits and disburses it as loans. As a result, the banking sector grew quickly. The banking sector includes a wide variety of bank kinds. One bank that is bigger than the majority of Small and Medium Businesses (SMEs) in its market niche is People's Credit Bank [1] states that BPR is a bank that does not offer payment

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services and conducts its operations in a traditional way in accordance with sharia principles. Compared to commercial banks, BPRs are subject to stricter regulations and are not allowed to accept insurance, foreign currency, or current account operations. BPR banks are defined by Banking Law Number 7 of 1992 as those that solely take deposits in the form of savings accounts, fixed deposits, and/or other bank deposits [2].

The current situation of the banking industry as reported by the results of Indonesian Banking Industry Statistics on the Financial Services Authority website (www.bisnis.com) for five years, starting from 2019 to August 2023. The number of Rural Banks in Indonesia continues to experience a significant decline. Since 2019, the number of BPRs has reached its peak, namely 1,545 units. However, the decline continued. This can be seen in 2020, the number of BPR units decreased to 1,506 units, which means a loss of 39 BPR units per year. This trend will continue until 2021, with the number of BPRs decreasing to 1,468 units. Then in December 2022, the number continued to decline to 1,441 BPR. The latest data as of August 2023 shows that the number of BPRs continues to experience a significant decline, reaching 1,412. On an annual basis, 38 BPR units have been recorded as closing since August 2022. The decline of the BPR resulted in the revocation of the business license based on the provisions of the Decree of the Financial Services Authority Board Members regarding the Revocation of Banking Licenses. Prior to the revocation of business permits, OJK had identified the status of banks that were subject to strict regulations that were experiencing and had the potential to experience difficulties that could endanger their business continuity, because some of them experienced a decline in financial performance, resulting in losses. Causing unhealthy banking practices and inability to survive. The ability of present capital to minimize possible operational losses is gauged by the capital adequacy ratio. In order to perform their duties, banks must keep CAR. The capital adequacy ratio and bank financial performance (ROA) are positively correlated. The bank has greater capital if its CAR value is higher. This makes it possible for the bank to grow its operations more safely and effectively, which leads to higher earnings [3].

Another factor that affects financial performance is operational efficiency (BOPO). BOPO as the ratio of operating income to operating costs. The bank's financial performance is better when the BOPO ratio is lower. This is because banks are able to utilize the company's current resources more effectively [4]. According to Bank Indonesia, the BOPO ratio, which compares total operating costs and total operating income costs, can be used to gauge operational efficiency. Finding out how well operating income can cover operating costs is the goal of the BOPO ratio. A ratio that keeps rising suggests that the bank is unable to raise operating income while lowering operating expenses. This can lead to losses because the bank manages its business less effectively. According to [5], Non-Performing Loans are the level of loans that have not been paid as a proportion of total loans. Upon reaching three months from maturity, the loan is considered non-performing and is considered an indicator of the portfolio financial institution's loan performance. To determine the minimum reserve

for the write-off of productive assets provided by the bank to cover potential losses, the NPL value must not be more than 5%. Financial performance is the ability of a bank to distribute all of the money it receives through well-executed transactions. According to [6], Return On Assets (ROA) is a crucial metric that illustrates a business's capacity to produce a profit given its assets. ROA is a metric that evaluates a business's previous profitability and can be used to predict future earnings [17].

Therefore, it is clear from the research's history that its objective is to ascertain how return on assets (ROA) affects banking organizations. Among the metrics that are employed are the capital adequacy ratio (CAR), non-performing loans (NPL), and operational costs to operating income (BOPO) [16]. Therefore, it is necessary to retest the consistency of each variable. The consistency of every variable affecting bank performance must therefore be retested. The study "The Influence of Capital Adequacy Ratio (CAR), Operating Costs of Operating Income (BOPO), and Non-Performing Loans (NPL) on Return on Assets (ROA) at Rural Banks in Indonesia 2020–2022" is one that researchers are interested in re-examining in this context.

2. Literature Review

According to [7] The capital adequacy ratio is crucial for risk management and business expansion. A greater ability of banks to tolerate credit and productive asset risks is indicated by a higher CAR. The calculation of the Capital Adequacy Ratio can be determined using the following formula:

$$CAR = \frac{Capital}{ATMR} X\ 100\%$$

According to [8] this ratio helps measure operational costs or intermediary costs related to a bank's operational profit. Because the main function of banks is to collect and distribute capital, interest expenses and interest income are the main components of bank operational expenses and operating income. Operating Costs to Operating Income can be calculated using the formula:

$$BOPO = \frac{operating\ costs}{operating\ income}\ x\ 100\%$$

According to [9] financial companies have long used the non-performing loan ratio to measure their performance. Unpaid loans are calculated as a proportion of total loans, and after three months after maturity, are considered “non-performing” [9]. Non Performing Loans can be calculated using the formula:

$$NPL = \frac{non\ performing\ credits}{Total\ credits}\ x\ 100$$

According to [10] Financial performance is indicated by return on assets, or the ratio of earnings before taxes to total assets. An improvement in financial performance is shown by a rise in revenue. The company's profitability rises when ROA declines, and this eventually boosts shareholder profitability. Return On Assets can be calculated using the formula:

$$ROA = \frac{profit\ before\ tax}{Total\ assets}\ x\ 100$$

Based on the description above, the framework used to formulate a hypothesis regarding the influence of capital adequacy ratio, operating costs operating income and non-performing loans on return on assets at rural credit banks in Indonesia can be described as follows :

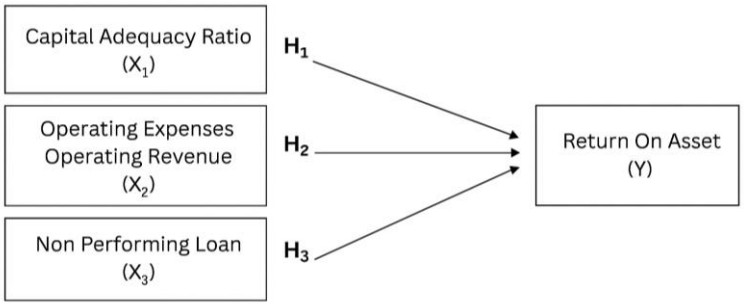

Figure 1 : Conceptual Framework

3. Research Methods

The aim of this investigation is to determine the effects of the equity ratio, operating income, operating expenses, and non-performing loans on the return on total assets of credit institutions in rural areas. According to the study's sampling criteria, up to 84 samples were taken. The population used for this analysis consisted of BPR companies with complete financial reports for the years 2020–2022. The data collection strategy applied in this study was the documentation of data in the annual financial report of the BPR group. The data analysis methods used in this study were panel data regression analysis and multiple linear regression.

4. Results And Discussion

Panel Data Regression Analysis

Panel data regression aggregates data from different objects and time periods. Every assumption in this data has advantages of its own. Panel data regression allows for the application of five model assumptions, each of which yields a distinct value result. The researcher's assumptions and the satisfaction of the requirements for proper statistical data processing determine which assumptions are chosen in order for it to be statistically justified [11]. Therefore, selecting one of the five possible assumptions that satisfies the following requirements must be the initial step.

1. The Durbin Watson value is between 1.5 to 2.5.
2. Significant variable value.
3. High R^2 value.

Table 1. Panel Data Regression Results

Value	Assumptions 1	Assumptions 2	Assumptions 3	Assumptions 4	Assumptions 5
R^2	0,578	0,876	0.567	0,874	0,943
F test	38,818	20,545	22,723	18,924	18,313
Sig. F	0,000	0,000	0,000	0,000	0,017
Durbin Watson	1,214	2,477	1,212	2,460	3,055
Sig. CAR	0,398	0,697	0,404	0,138	0,016
Sig. BOPO	0,000	0,000	0,000	0,190	0,101
Sig. NPL	0,770	0,274	0,774	0,222	0,101

in table 1 from the assumption values 1 to 5 it can be concluded that the assumption that meets the criteria is function 2 with the highest value of 2.477, the highest r square value is 0.876 so that assumption 2 is the assumption that will be used as a reference for testing data analysis.

Multicollinearity Test

To find out if the regression model has found a relationship between the independent variables, the multicollinearity test is employed. [12]. Table 2's collinearity quality test findings indicate that there is no multicollinearity in this study because each independent variable's tolerance value is larger than 0,1 and the VIF value is less than 0,10.

Table 2. Panel Data Regression Results

Model		Collinearity Statistics	
		Tolerance	VIF
	CAR	0,144	6,964
	BOPO	0,199	5,013
	NPL	0,240	4,171

Autocorrelation Test

The objective of the test or correlation is to verify if there is a correlation between the confounding errors in period t and the confounding errors in the previous period t-1 [12]. in table 3 the results of the autocorrelation test can be seen. If the value du < DW < 4-du then it can be concluded that there is no autocorrelation or calculation disturbance over time related to one.

Table 3. Autocorrelation Test Results

k	N	Sig.	Du	Durbin Watson	4-du
3	84	5%	1,7199	1,872	2,2801

Heteroscedasticity Test

The heteroscedasticity test aims to evaluate a model whether there is unequal variance in residual differences from one observation to another [12]. The capital adequacy ratio variable's significance value is 0.640, operating income's is 0.547, and the non-performing loan variable's is 0.247, according to table 4's results of the heteroscedasticity test. This indicates that the regression model does not exhibit heteroscedasticity symptoms because the significance value is greater than 5%, or > 0.05.

Table 4. Heteroscedasticity Test Results

Model		t	Sig.
1	(Constant)	-0,797	0,432
	CAR	0,473	0,640
	BOPO	0,610	0,547
	NPL	-1.179	0,247

4.1 Coefficient Determination Test (R^2)

To anticipate and determine the degree to which the independent variable influences the dependent variable, the coefficient of determination test is used [12]. According to table 5's results, the analysis value of the R Square coefficient of determination is 0.876. This indicates that the variable capital, operating income, operating cost ratio, and performing loan to asset calculations account for 87.6% of the total, with the remaining 12.4% being influenced by other factors not covered in this study.

Table 5. Coefficient Of Determination Test Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,960[a]	0,921	0,876	0,48067

4.2 Statistical Test

The t statistical test aims to show how far the individual independent variables influence the dependent variable. [12]. Table 6 shows that the capital adequacy ratio variable is 0,697, indicating that the capital adequacy ratio does not significantly affect the return on asset to some extent. The variable operating expenses operational income has a considerable impact on return on assets, as evidenced by its significance value of 0.00000, which is less than 0.05. Partial non-performing loans do not significantly affect return on assets, as indicated by the non-performing loan variable's significant value of 0.274, which is higher than 0.05.

Table 6. T Statistical Test Results

Model		t	Sig.
1	(Constant)	13.229	0,000
	CAR	-0,391	0,697
	BOPO	-12.195	0,000
	NPL	1.104	0,274

4.3 Multiple Linear Regression Analysis

Finding the degree to which the independent variable influences the dependent variable is the goal of multiple linear regression analysis [12]. The constant 13.229 means that the average return on assets is 13.229 if all independent variables (capital adequacy ratio, operating cost-to-income ratio, and non-performing loans) are fixed or constant. Value β_1 = A regression coefficient (X_1) as large as -0,391 indicates that the capital adequacy ratio and return on assets have a negative and negligible relationship; that is, the less capital a bank has, the lower its capital value. Value β_2 = With a regression coefficient (X_2) as large as -12,195, it is evident that operating costs, operational income, and return on assets are significantly correlated negatively. A bank's financial performance is better if its operating costs to operating income ratio is lower. Value β_3 = regression coefficient (X_3) as large as 1.104, indicating a positive but not statistically significant association between non-performing loans and return on assets. The bank's credit risk decreases as the amount of non-performing loans decreases.

Table 7. Multiple Linear Regression Analysis Test Results

model		t	Sig.
1	(Constant)	13,229	0,000
	CAR	-0,391	0,697
	BOPO	-12,195	0,000
	NPL	1,104	0,274

Discussion

The results of the hypothesis analysis show that the capital adequacy ratio has a negative and insignificant effect on return on assets. This implies that increasing the return on assets (ROA) by investing the value of Rural Credit Banks' capital adequacy ratio is not feasible. The findings of these studies are consistent with those of [6], [3], [5],[13], who did not find any connection between return on asset and the capital adequacy ratio. According to [13], the Capital Adequacy Ratio or the capital adequacy ratio of banking companies does not have a significant impact on Return On Assets

as a measure of banking financial performance [18]. In fact, the amount of capital lent to customers is not received on time, thereby reducing the bank's capital sources, and the capital held by the bank experiences a decline, causing the erosion of capital due to negative spread and an increase in assets that is not matched by an increase in capital. The phenomenon of bank financial statement data, where the Return On Asset (ROA) fell while the Capital Adequacy Ratio (CAR) rose during the study period, may be the source of this.

The hypothesis analysis's findings demonstrate that operating expenses significantly and negatively affect return on assets. Rural Credit Banks (BOPO) developed this ratio by comparing their operating income and operating expenses. According to its evaluation, a bank's management performance improves with a reduced BOPO ratio, which results in more efficient cost expenditures. On the other hand, a greater BOPO ratio indicates poorer management performance at the bank, which raises cost expenditures and lowers profitability. [3] claim that it demonstrates how effectively the bank controls its cost operations, making its revenue sources important for generating profits and effective in carrying out its operational tasks. The analysis's findings support those of earlier research by [4], [14], [5], and [14], which found that BOPO significantly and negatively affects ROA.

The hypothesis analysis's findings show that non-performing loans positively and negligibly affect return on assets. According to their judgment, a lower NPL number is favorably connected with the credit risk that the bank bears. [15] claim that the negligible impact on non-performing loans (NPL) suggests that the more credit extended, the more probable it is that NPL will rise significantly. However, since the rise in credit is what caused the increase in NPL, this is regarded as natural. A lower ROA indicates a loss in income and profit since the bank is taking on more risk if the quantity of money disbursed rises every period and the NPL trend is positive. This suggests that a bank's financing risk increases with its non-performing loan (NPL) level. Therefore, a less cautious financing process leads to business risk in financing and a decreased possibility for profit for the bank. The analysis's conclusions contradict those of earlier research by [6], [13], [5], [14], which found that NPL had a major impact on ROA. Nonetheless, they align with the findings of [15] investigation.

5. Conclusion

Based on the results of data analysis and interpretation of the results, this research obtained the following conclusions:

1. Capital Adequacy Ratio has a negative and insignificant effect on the financial performance of Return On Assets at Rural Banks in 2020-2022

2. Operating Costs Operating Income has a negative and significant effect on the financial performance of Return On Assets at Rural Banks in 2020-2022.
3. Non-Performing Loans have a positive and insignificant effect on the financial performance of Return On Assets at Rural Banks in 2020-2022.

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