

## RETURN ON EQUITY (ROE) AS MEDIATION OF BANK'S CAPITAL ADEQUATION RATIO (CAR)

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### Abstract

Banks need to maintain their performance and the level of Capital Adequasi Ratio (CAR). This study wants to see the variables that affect the Capital Adequasi Ratio (CAR) and see ROE as a variable that mediates the Capital Adequasi Ratio (CAR) at Bank Rakyat Indonesia (BRI). The research method used multiple regression analysis, t-test, Anova test and Coefficient of Determination and the research period for 14 years from 2009 to 2022, by using SPSS Software version 26. The conclusion of the study, only the BOPO variable has a significant effect on the Capital Adequasi Ratio (CAR) and the ROE variable as a variable that can mediate the CAR variable at Bank Rakyat Indonesia (BRI).

**Keywords:** Capital Adequasi Ratio, Bank Financial Ratio.

### INTRODUCTION

Article 1 of Law No. 10 of 1998 on banking states that a bank is a business entity that collects funds from the public in the form of deposits and distributes funds to the public in the form of credit and or other forms in order to improve the standard of living of the Indonesian people.

The Bank is a trust institution that functions as an intermediary institution, assisting the smooth running of the payment system, and as an institution that becomes a means of implementing government policies, namely monetary policy. With these functions, the existence of a healthy bank is a prerequisite for a healthy economy.

In Indonesia, as stipulated in the law, what is meant by bank is a business entity that collects funds from the community in the form of savings and distributing these funds, back to the community in the form of credit or other forms in order to improve the standard of living of the people, called the intermediation function.

The intermediation function can run well, if both parties, namely the depositor and borrower, have trust in the bank (Warjiyo 2004). Starting in 1997 the Indonesian people lost trust in banking institutions after the financial crisis which resulted in many banking institutions in Indonesia experiencing liquidation, so Bank Indonesia (BI), attempted to issue policies to regulate and supervise banking institutions in Indonesia.

According to De Bondt and Prast (2000); Bank capital adequacy provisions can increase shareholder and depositor confidence, capital adequacy provisions can also increase bank capital, so as to create healthy competition in global financial markets.

The capital aspect for national banks is very important, because in global competition a large amount of capital strength is needed. In an effort to nourish bank capital and sound asset quality, the monetary authority has determined rules on the health of bank capital in addition to other rules that function as prudential banking supervision.

Bank Indonesia as the holder of the monetary authority in Indonesian banking, has implemented intensive supervision in applying the prudential principle, banks that still have a CAR value below 8% must immediately improve their capital conditions, if they do not want to be liquidated by Bank Indonesia.

The capital aspect (CAR), is one of the benchmarks for bank health. The capital owned by the bank has a function to absorb the risks and losses that are likely to be experienced by the bank, so that each bank is required to have sufficient capital. Capital adequacy of a bank must be maintained, so it is necessary to conduct research on what factors can affect capital adequacy, so that it can be the basic principle for managing bank capital and maintaining bank stability and soundness. Banks must manage the liquidity of their assets in order to meet their liability reserves, without incurring expensive costs.

Whalen and Thomson (1988); argues that the capital adequacy ratio (CAR), is an important component in assessing the soundness of banks. Capital adequacy provisions must stipulate a large enough bank capital, so as to support the development of bank operations and survival, covering risks that are likely to occur.

After the bank carries out its operational activities, the provisions of the Minimum Capital Provision Obligation (KPMM) or Capital Adequacy Ratio (CAR) apply. According to the Standard Bank for International Settlements, each country can make adjustments in determining the principles of calculating the Capital Adequacy Ratio (CAR), to be adjusted to the economic conditions of each country.

Based on the Decree of the Board of Directors of BI No.26/20/Kep/DIR and SE BI No.26/2/BPPP respectively dated May 29, 1993, the obligation to provide minimum capital (CAR) has been determined.

The regulation stipulates that the minimum capital provision of banks is measured from a certain percentage of Risk-Weighted Assets (ATMR) of 8%. Capital Adequacy Ratio (CAR) is a measure of capital that is expected to guarantee that banks can operate properly.

Data ROE, NIM, CAR dan NPL  
Bank Rakyat Indonesia (BRI) Period 2009 until 2022

YEAR	ROE (%)	NIM (%)	CAR (%)	NPL (%)
2009	35,22	9,14	13,20	3,52
2010	43,83	10,77	13,76	2,78
2011	42,49	9,58	14,96	2,30
2012	38,66	8,42	16,95	1,78
2013	34,11	8,55	16,99	1,55
2014	31,19	8,51	18,31	1,69
2015	29,89	8,13	20,59	2,02
2016	23,08	8,00	22,91	2,03
2017	20,03	7,93	22,96	2,11
2018	20,49	7,45	21,21	2,14
2019	19,41	6,98	22,55	2,62
2020	11,05	6,00	20,16	2,94
2021	16,87	6,89	25,28	3,08
2022	20,93	6,80	23,30	2,82

Sources: Annual Report BRI

Data shows that for 14 years, CAR BRI has fulfilled the requirements, in accordance with the provisions of Bank Indonesia legislation, which is above 12% and shows an increasing trend. Other financial data, such as; ROE, NIM and NPL also showed fluctuating trends during the study period from 2009 to 2022.

Commercial banks in Indonesia are required to maintain a Capital Adequacy Ratio (CAR) of 8% to be considered a healthy bank. Banks that have a CAR below 8% or under the applicable Bank Indonesia regulations, then the controlling owner is required to increase capital or lose his controlling rights over the bank in other words the bank has the potential to be liquidated (Warjiyo, 2004).

Research by Brinkmann and Horvit (1995); argues that the high capital owned by banks is very effective in protecting depositors (deposit insurance system) against bank failure. Some studies such as those conducted by De Bondt and Prast (2000), Ghosh et al. (2003), Godlewski (2005) and Ssenyonga and Prabowo (2006), testing the bank's capital ratio proves that bank capital is one of the important factors for banks in developing their business and accommodating the risk of loss in avoiding liquidation and bankruptcy.

According to research by Ahmad et al. (2008); important factors determining bank capital ratios, have a strong positive relationship between capital regulation and bank management in risk taking. Bank risk, quality of management, size of the bank, as well as the level of liquidity of the bank are important factors determining the bank's capital ratio. The study uses Non-Performing Loans to measure bank risk related to lending risk and index value risk to measure bank risk related to asset returns. Interest income is also one of the important factors in determining bank capital.

Net Interest Margin (NIM), used as a measure of the quality of bank management seen from the net interest income that the bank is able to obtain. The results of the study of Ahmad et al. (2008), explained that two risk variables, namely Non-Performing Loans and risk index, showed a positive relationship between the bank's capital adequacy ratio and risk taking, this is relevant to the results of De Bondt and Prast's (2000) research; that a bank's Capital Adequacy Ratio is positively related to risk-taking in lending risk.

Another study conducted by Ssenyonga and Prabowo (2006), shows that there is a negative relationship between Non-Performing Loans and Capital Adequacy Ratio, which means banks that have higher levels of non-performing assets, have lower capital adequacy, while Godlewski's (2005) research, shows that the risk measured from Non-Performing Loans has no effect on the Capital Adequacy Ratio. On the relationship between capital and bank income, it shows that income has an influence on the capital ratio.

Net interest margin (NIM), has a negative coefficient, so this finding contradicts the opinion of Cebenoyan et al. (1999), that high income provides bank managers easy access to capital, thus minimizing risk. Research Ahmad et al. (2008) and Pasiouras et al. (2006), shows bank liquidity shows a positive relationship to capital adequacy ratio.

The results of other studies also show that credit taking has an influence on capital adequacy. Economic income is also one of the important factors in determining bank capital, where income is related to efficiency and the possibility of liquidation. Net Interest Margin (NIM) is used as a measure of the quality of bank management in terms of net interest income earned by banks, the results show that NIM has a significant influence on the capital adequacy ratio.

### **Theoretical Studies**

Capital Adequasi Ratio (CAR) is a ratio that shows how far a bank's assets contain risk. CAR is an indicator of a bank's ability to cover a decline in its assets as a result of bank losses caused by risky assets. CAR is an indicator of a bank's ability to cover a decline in its assets as a result of bank losses caused by risky assets.

CAR is one of the benchmarks to assess the level of bank health. Bank Indonesia (BI) stipulates PBI No. 3/21/PBI/2001 concerning the Obligation to Provide Minimum Capital (CAR) for Commercial Banks. According to PBI No. 3/21/PBI/2001 Article 2 paragraph 1, the Bank is required to provide a minimum capital of 8% (eight hundredths) of its risk-weighted assets as of the end of December 2001.

Capital Adequacy Ratio (CAR), Capital (Capital Adequacy) shows the ability of the bank to maintain sufficient capital and the ability of bank management to identify, supervise and control risks that arise that can affect the amount of bank capital.

The Capital Adequacy Ratio (CAR) is used to measure the ability of existing capital to cover possible losses in credit activities and securities trading. The CAR ratio is formulated as follows (SE BI No 6/73/INTERN/DPNP dated December 24, 2004):

$$\text{CAR} = \text{Bank Capital} / \text{Total ATMR}$$

The capital component of banks and ATMRs is in accordance with PBI No. 14/18/PBI/2012 concerning the Obligation to Provide Minimum Capital for Commercial Banks. The latest minimum 8% CAR provisions are regulated in detail in the Financial Services Authority Regulation Number 11/POJK.03/2016 concerning the Obligation to Provide Minimum Capital for Commercial Banks.

The assessment of the soundness of commercial banks includes an assessment of profitability factors. According to Bank Indonesia Regulation No.13/1/PBI/2011 Chapter IV article 11 paragraph 4, the determination of profitability factor ratings on a consolidated basis is based on a comprehensive and structured analysis of certain profitability parameters or indicators resulting from the Bank's consolidated financial statements and other financial information.

Net Interest Margin (NIM) "net interest margin" is the ratio between interest income generated by banks or other financial institutions and the value of interest paid to their lenders (e.g., deposits), relative to the amount of their (earning interest) assets.

NIM is a ratio that is used as a benchmark to determine how much the bank's ability to manage all its productive assets, in order to generate higher net income. The greater the NIM ratio, it will affect the increase in interest income obtained from productive assets managed by the bank properly.

According to Bank Indonesia Regulation No.17/11/PBI/2015, the ratio of non-performing loans (NPL) is the ratio between the total number of substandard, doubtful, and non-current quality loans to total loans.

The NPL ratio of total bank loans in gross terms must be less than 5%. If the NPL value is greater than 5%, then the bank is categorized as unhealthy. High NPLs indicate the number of non-performing loans and will indirectly have an impact on decreasing revenue caused by delays in payments or even loss of income from credit installment payments and will increase the cost of reserve productive assets or others, so that it has the potential for stock returns.

Return on Assets (ROA), is a ratio used to measure the ability of bank management to obtain profitability and manage the overall level of business efficiency of the bank. The greater the value of this ratio, indicating that the level of profitability of the bank's business is getting better or healthier. ROA is used to measure the ability of bank management to earn profits (profit after tax) generated from the total assets of the bank concerned.

The greater the Return on Assets indicates better financial performance, because the rate of return is greater. If Return on Assets increases, it means that the company's profitability increases so that the final impact is an increase in profitability enjoyed by shareholders. Return on assets (ROA) ratio is formulated as follows (SE BI No 6/73/INTERNDPNP dated December 24, 2004):

$$ROA = (EBIT / \text{Total Assets}) \times 100 \%$$

The ratio of Operating Expenses to Operating Income (BOPO), or often called the efficiency ratio used to measure the ability of bank management to control operating costs to operating income. The smaller this ratio, the more efficient the operational costs incurred by the bank

concerned (Almilia and Herdiningtyas, 2005). The BOPO ratio is formulated as follows (SE BI No 6/73/INTERN/DPNP dated December 24, 2004):

$$\text{BOPO} = (\text{Operating Expenses} / \text{Operating Income}) \times 100\%$$

Non-Performing Loan (NPL), is one of the bank's business risks is credit risk which is defined as the risk arising as a result of the counterparty's failure to fulfill obligations. The higher the NPL ratio, the worse the bank's credit quality, which can cause the number of non-performing loans to be greater and the possibility of a bank in a problematic condition is greater. Non-performing loans are loans with substandard, doubtful and bad quality, according to criteria set by Bank Indonesia.

The Non-Performing Loan (NPL) ratio is formulated as follows (SE BI No 6/73/INTERN/DPNP dated December 24, 2004):

$$\text{NPL} = (\text{Non-performing Loans} / \text{Total Credits}) \times 100\%$$

Loan to Deposit Ratio (LDR), the liquidity capability of banks can be proxied with LDR (Loan to Deposit Ratio), which is a comparison between loans and Third Party Funds (DPK). This ratio is used to assess the liquidity of a bank by dividing the amount of credit provided by the bank against third party funds. The Loan to Deposit Ratio (LDR) is formulated as follows (SE BI No 6/73/INTERN/DPNP dated December 24, 2004):

$$\text{LDR} = (\text{Total Credit} / \text{Total Third Party Funds}) \times 100 \%$$

Understanding Return on Equity (ROE) The profitability ratio is a ratio to assess the company's ability to seek profits or profits in a certain period (Kasmir, 2013: 114). This ratio also provides a measure of the level of management effectiveness of an enterprise as indicated by profits generated from sales or from investment income. It is said that the company has good profitability if it is able to meet the profit targets that have been set by using its assets or capital.

$$\text{ROE} = (\text{EBIT} / \text{Equity}) \times 100 \%$$

## RESEARCH METHODS

This research method is a descriptive analysis method, where research is carried out on variables whose data already exists without a manipulation process (past data). This study was conducted to determine financial ratios that affect banking performance as seen from its capital adequacy (CAR).

Data in this study will be collected using literature and documentation study methods. The literature study method is used to collect data in the form of literature on the general description of the research object and document the Bank's financial statements based on annual publication reports.

Population is a unit that has the same characteristics where samples can be used as research objects. The population in this study is the annual report of Bank Rakyat Indonesia (BRI).



The object of research is the annual report of Bank Rakyat Indonesia (BRI), for 14 years starting from 2009 to 2022.

The research analysis model uses multiple regression analysis in examining the influence of independent (independent) and dependent variables (bound). Data analysis in data management using SPSS Software.

The formula for multiple linear regression analysis includes:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + e$$

Discription:

Y = CAR

a = Konstant b1, b2, b3, b4, b5, b6

X1 = Variable ROA

X2 = Variable ROE

X3 = Variable NIM

X4 = Variable BOPO

X5 = Variable LDR

X6 = Variable NPL

e = Error

## RESEARCH RESULT AND DISCUSSION

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.929 <sup>a</sup>	.863	.778	1.81540

a. Predictors: (Constant), NPL, NIM, LDR, BOPO, ROA

The Adjusted R Square result between independent variables to CAR is 0.778 or 77.80 or has a very strong correlation.

ANOVA <sup>a</sup>						
	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	166.400	5	33.280	10.098	.003 <sup>b</sup>
	Residual	26.365	8	3.296		
	Total	192.765	13			

a. Dependent Variable: CAR

b. Predictors: (Constant), NPL, NIM, LDR, BOPO, ROA

The results of the Anova test or the joint influence between the variables NPL, NIM, LDR, BOPO and ROA on CAR are significant, with a calculated F value of 10.098 and a Sig value of 0.003 (smaller than 0.05).

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	113.950	24.711		4.611	.002
	ROA	-9.034	3.029	-2.112	-2.983	.018
	NIM	.929	1.385	.300	.671	.521
	BOPO	-1.073	.302	-1.660	-3.552	.007
	LDR	.071	.094	.134	.755	.472
	NPL	.869	1.549	.125	.561	.590

a. Dependent Variable: CAR

$$Y = 113,950 - 9,034 ROA + 0,929 NIM - 1,073 BOPO + 0,071 LDR + 0,869 NPL$$

The results of the t test or partial influence between the independent variable and the dependent variable, there are variables ROA and BOPO variables that have a significant effect, while other variables, such as; NIM, LDR and NPL have no significant effect on CAR.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.957 <sup>a</sup>	.916	.844	1.52102

a. Predictors: (Constant), NPL, ROE, LDR, BOPO, NIM, ROA

The result of the Adjusted R Square between independent variables to CAR is 0.844 or 84.40 or has a very strong correlation.

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	176.571	6	29.428	12.720	.002 <sup>b</sup>
	Residual	16.195	7	2.314		
	Total	192.765	13			

a. Dependent Variable: CAR

b. Predictors: (Constant), NPL, ROE, LDR, BOPO, NIM, ROA

The results of the Anova test or the effect together between the variables NPL, NIM, LDR, BOPO and ROA on CAR are significant, with a calculated F value of 12, 720 and a Sig value of 0.002 (smaller than 0.05).

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	80.678	26.086		3.093	.017
	ROA	-4.254	3.411	-.995	-1.247	.253
	ROE	-.410	.195	-1.086	-2.097	.074
	NIM	1.918	1.252	.620	1.531	.170
	BOPO	-.749	.297	-1.159	-2.525	.040
	LDR	.008	.084	.016	.099	.924
	NPL	1.020	1.300	.147	.784	.459

a. Dependent Variable: CAR

$$Y = 80,678 - 4,254 ROA - 0,410 ROE + 1,918 NIM - 0,749 BOPO + 0,008 LDR + 1,020 NPL$$



The results of the t test or partial influence between the independent variable and the dependent variable, there are BOPO variables that have a significant effect, while other variables, such as; ROA, ROE, NIM, LDR and NPL do not significantly affect the Capital Adequasi Ratio (CAR).

## CONCLUSION

The BOPO variable has a significant effect on the Capital Adequasi Ratio (CAR) and Return On Equity (ROE) variables as variables that mediate the CAR variable, as evidenced by the previous Anova test results including ROE as an independent variable, the calculated F value of 10.098 is smaller than 12.720 and the Adjusted R value of 77.80 is smaller than 84.40 case studies at Bank Rakyat Indonesia (BRI), during the period 2009 to 2022.

## Recommendations

Bank management needs to pay attention and conduct a continuous analysis of the ratio of operating expenses to operating income (BOPO). Due to the impact of any increase in operational costs, it can reduce the performance of banks (CAR), especially Bank Rakyat Indonesia during the research period between 2009 and 2022.

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