

## EFFECT OF CAPITAL ADEQUACY RATIO, NON PERFORMING FINANCING, FINANCING TO DEPOSIT RATIO, OPERATING EXPENSES AND OPERATIONAL INCOME ON PROFITABILITY AT PT. BANK ACEH SYARIAH

Aldy Syafrizal<sup>1</sup>, Rico Nur Ilham<sup>2</sup>, Darmawati Muchtar, Wardhiah<sup>4</sup>

Faculty of Economics and Business, Universitas Malikussaleh

Corresponding Author: [riconurilham@unimal.ac.id](mailto:riconurilham@unimal.ac.id)

---

### Abstract

This study aims to analyze the effect of Capital Adequacy Ratio, Non Performing Financing, Financing To Deposit Ratio and Operating Expenses and Operating Income on profitability at PT. Sharia Aceh Bank. Where in this study profitability is seen from the return on assets (ROA). This study uses a quantitative method using the Autoregressive Distributed Lag (ARDL) approach. This study uses time series data or time series data where this research was conducted during the period 2012 to 2021. The results of this study indicate that the Capital Adequacy Ratio partially has no effect, Non Performing Financing partially has a positive and significant effect, Financing To Deposit Ratio partially has an effect negative and significant,

**Keywords:** Capital Adequacy Ratio, Non Performing Financing, Financing To Deposit Ratio, Operating Expenses and Operating Income, Profitability, Return On Assets

---

### INTRODUCTION

Financial performance is one of the most important things in a business world related to the company, both internally and externally. Financial performance is a benchmark for each company to assess the company's ability to achieve company profits and the maximum performance that has been achieved by the company. To assess company profits can be analyzed through data in the company's financial statements, by analyzing the company's financial statements. Financial performance is a description of the company's success in the form of results that have been achieved thanks to various activities that have been carried out. Financial performance is the result of the company's activities managing all of its assets in achieving efficiency and effectiveness in the financial sector in a period (Rogahang, 2020).

*Profitability* is the ability of a company to generate profits in a certain period. Profit is usually one of the company's performance assessments, where if the profit generated is high then the company's performance is good and vice versa. Apart from being an indicator of the company's ability to fulfill obligations for capital providers, company profit is also an element in creating company value that shows the company's prospects in the future (Prabowo et al, 2019).

*Return On Assets* is a profitability ratio that shows the percentage of profits that a company gets in relation to the overall resources or the average number of assets. ROA is a ratio that measures how efficient a company is in managing its assets to generate profits over a period. ROA can help management and investors see how well a company is able to convert its investment in assets into profit or profit (Prabowo & Sutanto, 2019).

*Capital Adequacy Ratio* is the ratio of bank performance to measure the adequacy of the bank's capital to cover the decline in its assets as a result of bank losses caused by risky assets and to support assets that contain or generate profits such as financing provided (Lukman Dendawijaya, 2005). *Capital Adequacy Ratio* is the ratio that shows how far all bank assets that contain risk (loans, securities participation, claims on other banks) are also financed from the bank's own capital funds in addition to

obtaining funds from sources outside the bank, such as public funds, loans (debt), and others (Dendawijaya, 2001). Capital Adequacy Ratio shows the extent to which bank assets can still be covered by available bank equity, the higher the Capital Adequacy Ratio, the better the condition of the bank (Tarmizi, 2002).

*Non Performing Financing* (NPF) is an indicator of bank credit (financing) risk. Banks with high NPF tend to be less efficient. Conversely, a bank with a lower NPF will have the ability to channel funds to other customers so that the level of profitability will be higher (Priantana and Zulfian, 2011). Credit risk is defined as the risk of loss in connection with the borrower (counterparty) being unable and unwilling to fulfill the obligation to repay the borrowed funds in full at maturity or thereafter as an indicator showing losses due to credit risk is reflected in the size of the Non Performing Loan, in Islamic bank terminology it is called non performing financing (Muntoha Ihsan, 2011).

*Financing to Deposit Ratio* (FDR) is the ratio of the total amount of financing provided by the bank to the funds received by the bank. If the ratio is higher, it will give an indication of the lower liquidity capacity of the bank concerned. Reducing the level of liquidity can have an impact on increasing profitability (Sumarlin, 2016). The ratio used to measure liquidity is the Financing to Deposit Ratio, which is the ratio between the total amount of loans extended to third party funds. The amount of credit extended will determine the bank's profit. (Muh. Sabir, et al. 2012), In Islamic banking the term credit (loan) is not known but financing or financing. In general, the same concept is shown in Islamic banks in measuring liquidity, namely by using the Financing to Deposit Ratio (Brigham and Houston, 2006).

*Operating Expenses Operating Income* (BOPO) is the ratio between operating costs and operating income. The lower the BOPO ratio means the better the performance of the bank's management so that it can make expenses more efficient (Slamet, 2006). On the other hand, the higher the BOPO ratio means that the performance of the bank's management is not good, so that operational costs are spent higher, which will result in decreased bank profitability. *Operating Expense Ratio* or commonly referred to as the operating expense ratio is a tool used to see the company's ability to streamline operating expenses. In the banking business sector, this ratio is called the BOPO ratio (Operating Expenses to Operating Income). The BOPO calculation is done by comparing operating expenses with operating income. This ratio, which is often called the efficiency ratio, is used to measure the ability of bank management to control operational costs against operating income (Lukman Setiawan, 2013).

**Table 1.1 ROA, CAR, NPF, FDR, BOPO**

Year	ROA (%)	CAR (%)	NPF (%)	FDR (%)	BOPO (%)
2016	2.48	20,74	1.39	84.59	83.05
2017	2.51	21.50	1.38	69,44	78.00
2018	2.38	19.67	1.04	71.98	79.09
2019	2,33	18.90	1.29	68,64	76.95
2020	1.73	18.60	1.53	70,82	81.50
2021	1.87	20.02	1.35	68.06	78,37

Source: <https://www.bankaceh.co.id/>

Based on the table above, since 2019 the CAR of Bank Aceh Syariah has decreased significantly by 18.90%, but since 2021 the CAR of Bank Aceh Syariah has increased by 20.02% from the previous year 2020 which was 18.06, the cause of the decline CAR is caused by providing funds for business

development capital needs and accommodating possible risks of loss resulting from bank operations, but since 2021 the bank has demonstrated again its ability to provide funds for business development capital. Meanwhile, the FDR of Bank Aceh Syariah in 2021 has decreased by 68.06% from the previous year 2020 which was 70.82%, caused by a lack of lending to third party funds due to the size of the amount of credit extended will determine the bank's profits. In 2021 the BOPO of Bank Aceh Syariah has decreased by 78.37% from the previous year 2020 which was 81.50%, because banks are starting to be efficient in carrying out their operational activities which is marked by this low ratio.

From 2019 to 2020 the NPF of Bank Aceh Syariah experienced a very sharp increase in 2020, namely 1.53% from the previous year 2019, which was 1.29%. This means that there was bad financing in previous years. Non Performing Financing is used to measure the level of financing problems faced by Islamic banks, the higher the NPF, the lower the banking performance or profitability.

## RESEARCH METHODS

### *Research Objects and Locations*

The location of this research was conducted in PT. Sharia Aceh Bank. The data used were obtained from the official website at PT. Bank Aceh Syariah through the site [www.bankaceh.co.id](http://www.bankaceh.co.id)

### *Data Types and Sources*

The main data type of this research uses secondary data because this research uses financial reports as the main research data. Secondary data is data that has been processed beforehand and data obtained through financial reports published on the official website of PT. Bank Aceh Syariah thus this study uses time series data as a type of data, this is because the data in this study is data that only consists of one object and several time periods (2012-2021). And this time period is considered sufficient to cover the development of the bank's performance because it uses time series data with research aids using E-VIEWS.

### *Data collection technique*

In this study, researchers used several data collection methods according to the problem under study. The data collection technique used in this study was the documentation method. The documentation method was data collected from evidence and documents related to the object of research. In this study, it is in the form of financial reports consisting of income statements, balance sheets which were examined by the author to be used as material in this study (Saputri, 2017).

This study applies the Auto Regressive Distributed Lag (ARDL) approach introduced by Pesaran, Shin, & Smith (2001) to test the existence of cointegration between variables and also to estimate the long-term and short-term coefficients of these variables. In general, financial performance variables is a variable that is often used in research. However, in previous studies, no one used data analysis techniques using the Autoregressive Distributed Lag (ARDL) method where the ARDL method is a data analysis method that aims to examine the long-term and short-term effects between the dependent variable and the independent variable.

The ARDL (Autoregressive Distributed Lag) model is a dynamic model in econometrics. If we use the ordinary OLS model, we will only see the long term, but if we use the ARDL model we can see the effect of the dependent and independent variables over time including the effect of the dependent variable from the past on the present bound value. Actually the ARDL model is a combination of AR (Autoregressive) and DL (Distributed Lag) models. The AR model is a model that uses one or more past data from the dependent variable among the independent variables (Vilella, 2019). Whereas DL is a regression model involving data at present and past time (lagged) from independent variables (Vilella, 2019).

The model used in this study is a model for analyzing factors such as Capital Adequacy Ratio, Non Performing Financing, Financing to Deposit Ratio, and Operating Expenses Operating Income to Return on Assets.

The model for the ARDL equation can be formulated for each variable as follows:

$$Y_t = \beta_0 + \sum_{i=1}^{n1} \beta_1 Y_{t-1} + \sum_{i=0}^{n2} \beta_2 X_{1t-i} + \sum_{i=0}^{n3} \beta_3 X_{2t-i} + \sum_{i=0}^{n4} \beta_4 X_{3t-i} + \sum_{i=0}^{n5} \beta_5 X_{4t-i} + \Phi_1 Y_{t-1} + \Phi_2 X_{1t-1} + \Phi_3 X_{2t-1} + \Phi_4 X_{3t-1} + \Phi_5 X_{4t-1} + \varepsilon_{t1}$$

$$ROA_t = \beta_0 + \sum_{i=1}^{n1} \beta_1 \Delta ROA_{t-1} + \sum_{i=0}^{n2} \beta_2 \Delta CAR_{t-i} + \sum_{i=0}^{n3} \beta_3 \Delta NPF_{t-i} + \sum_{i=0}^{n4} \beta_4 \Delta FDR_{t-i} + \sum_{i=0}^{n5} \beta_5 \Delta BOPO_{t-i} + \Phi_1 ROA_{t-1} + \Phi_2 CAR_{t-1} + \Phi_3 NPF_{t-1} + \Phi_4 FDR_{t-1} + \Phi_5 BOPO_{t-1} + \varepsilon_{t1}$$

Where:

- $Y_t$  = Return On Assets
- $X_{1t}$  = Capita Adequacy Ratio
- $X_{2t}$  = Financing to Deposit Ratio
- $X_{3t}$  = Non Performing Financing
- $X_{4t}$  = Operating Expenses Operating Income
- $\beta_0$  = Constant
- $\beta_1, \dots, \beta_4$  = Short Run Coefficient
- $\Phi_1, \dots, \Phi_4$  = Long Run Coefficient
- $\varepsilon_{t1}$  = Interrupt error (Error).

## RESULTS AND DISCUSSION

### Correlation Analysis

Table 4.2 Correlation Analysis

Variable	ROA	CAR	NPF	FDR	BOPO
CAR	-0.0343	1.0000			
	-0.2116	-----			
NPF	0.6467	-0.2129	1.0000		
	5.2278(***)	-1.3436	-----		
FDR	0.4200	0.2499	0.4907	1.0000	
	2.8533(***)	1.5912	3.4716(***)	-----	
BOPO	-0.9516	0.0549	-0.5546	-0.3241	1.0000
	-19.0976(***)	0.3391	-4.1089(***)	-2.1122(**)	-----

Source: Data processed 2022

Notes: (\*\*\*), (\*\*), (\*) significant at the level of 1%, 5% and 10%.

Based on Table 4.2 above is the result of the correlation in this study. To see how the relationship between the independent variables consisting of CAR, NPF, FDR and BOPO on the dependent variable, namely profitability, can be seen in the ROA column, where the variables CAR, NPF, FDR, and BOPO found that CAR has a negative correlation of -0.0343 and not significant on ROA. Then it was found that NPF had a positive correlation of 0.6467 and was significant at the 1% level of ROA. Then it was found that FDR had a positive correlation of 0.4200 and was significant at the 1% level of ROA. Furthermore, it was found that BOPO had a negative correlation of -0.9516 and was significant at the 1% level of ROA.

The results of the analysis of the correlation or relationship between the independent variables in Table 4.2 column CAR where the NPF variable has a negative correlation of -0.2129 and is not significant to CAR. Then the FDR variable has a positive correlation of 0.2499 and is not significant to CAR. Furthermore, the BOPO variable has a positive correlation of 0.0549 and is not significant to CAR.

The results of the analysis of the correlation or relationship between the independent variables in Table 4.2 of the NPF column found that the FDR has a positive correlation of 0.4907 and is significant at the 1% level with the NPF. Then the BOPO variable has a negative correlation of -0.05546 and is significant to NPF.

The results of the analysis of the correlation or relationship between the independent variables in Table 4.2 of the FDR column found that BOPO has a negative correlation of -0.3241 and is significant at the 5% level with FDR.

### Stationarity Test

Table 4.3 ADF Unit Root Test

Variable	Levels		First Difference		Order of integration
	intercept t	Prob	intercept	Prob	
ROA	-2,685	0.085	-7,229	0.000	<i>I</i> (1)
CAR	-1,340	0.599	-10,311	0.000	<i>I</i> (1)
NPF	-1,951	0.306	-8,459	0.000	<i>I</i> (1)
FDR	-2,304	0.176	-8,354	0.000	<i>I</i> (1)
BOPO	-3,089	0.035	-7,202	0.000	<i>I</i> (1)

Source: Data processed 2022

Based on the stationarity test above, it shows that ROA, CAR, NPF, FDR and BOPO are not stationary at levels. Shown with a probability greater than 5%, but when a unit root test is carried out on the first difference from the probability significance of the five stationary variables. Therefore, the suitable model to use is ARDL (Autoregressive Distributed Lag).

The next step is to determine the maximum lag and optimum lag to find the best model, the optimum lag using the Akaike Info Criterio (ACI) approach. Optimal lag is the lag that has the smallest AIC value. Here are the results of the optimum lag:

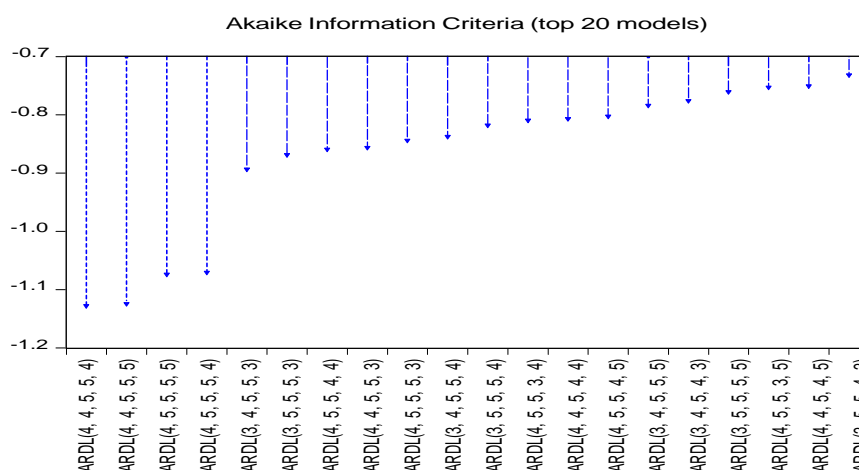
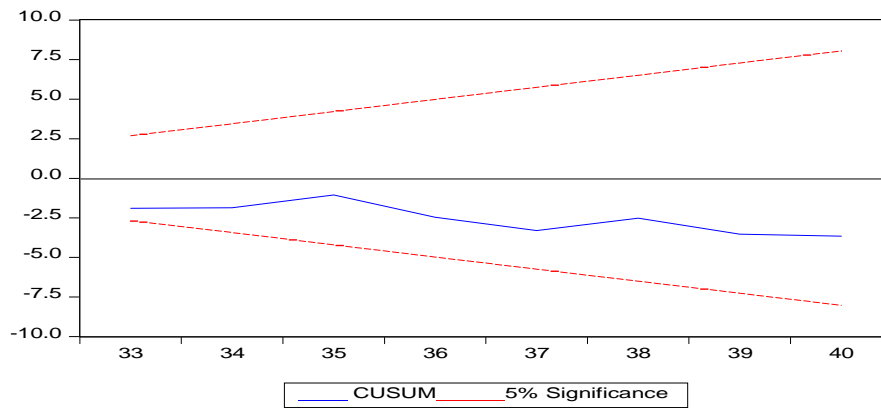


Figure 4.1 Optimal Lag

Based on Figure 4.1 above, there are 20 top models, but the model that is suitable for the ARDL method in this study is ARDL (4.4.5.5.4) because it has a smaller error than other ARDL models. This shows that Y has 4 lags, X1 has 4 lags, X2 has 5 lags, X3 has 5 lags and X4 has 4 lags.

### Stability Test

Stability test is used to determine the stability of the cointegration relationship between variables. The stability test used Sum Cumulative Recursive Residual (CUSUM). If the CUSUM line is within the critical boundary line of 5%, the cointegration result is significantly stable.

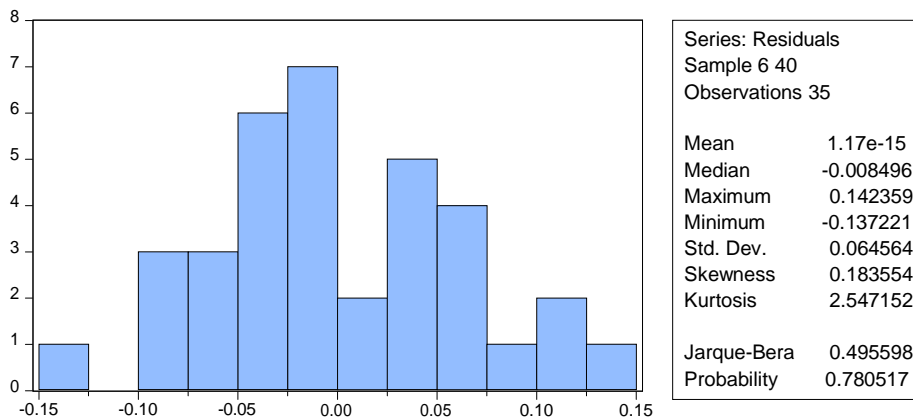


**Figure 4.2 Recursive Residual Cumulative Sum (CUSUM)**

Based on Figure 4.2, it can be seen that the cointegration results are significantly stable, because CUSUM is within the critical line of 5%.

### Classic assumption test

#### Normality Test Method



Source: Eviews Results, Data Processed (2022)

**Figure 4.3 Normality Test Results**

From Figure 4.3 the results of the normality test show that the Prob JB value  $> 0.05$ , which is  $0.78 > 0.05$ , it can be concluded that the residuals are normally distributed.

### Multicollinearity Test

Table 4.5 Multicollinearity Test

	CAR	NPF	FDR	BOPO
CAR	1.000000	-0.212962	0.249946	0.054933

NPF	-0.212962	1.000000	0.490707	-0.554638
FDR	0.249946	0.490707	1.000000	-0.324144
BOPO	0.054933	-0.554638	-0.324144	1.000000

Source: Processed Data, (2022)

Based on table 4.5 above, it shows that this model is free from multicollinearity problems by looking at the output variables in the regression there is no correlation above 0.8.

### Autocorrelation Test

Table 4.6 Autocorrelation Test

Durbin Watson	2,807
---------------	-------

Source: Processed data, (2022)

The Durbin Waston value in this study was the autocorrelation test which can be seen in Table 4.6. The Durbin Waston value in this study was 2,807. This value is above the tolerance value in the autocorrelation test, namely -2 and 2. Therefore it can be concluded that this research indicates there is a negative autocorrelation.

### Heteroscedasticity Test

Table 4.7 Heteroscedasticity Test Results

F-statistics	0.533260	Prob. F(26,8)	0.8922
Obs*R-squared	22.19400	Prob. Chi-Square(26)	0.6780
Scaled explained SS	0.896979	Prob. Chi-Square(26)	1.0000

Source: Processed data, (2022)

Based on Table 4.7 it can be concluded that the results of the heteroscedasticity test using Prob. Chi-square of 0.67 is greater than  $\alpha$  1%, 5% and 10%, thus the regression model in this study is free from heteroscedasticity problems and does not need to be cured.

### Long Term ARDL Bond Test Results

Table 4.8 ARDL Bond Test Results Long-term

Levels Equation		
Case 2: Restricted Constant and No Trend		
Variables	coefficient	t-Statistics
CAR	0.011086	0.1799
NPF	0.356220	2.4823(**)
FDR	-0.047642	-2.1604(*)
BOPO	-0.098621	-7.0774(***)
C	12.45306	4.4821(***)
F-Bounds Test		

Test Statistics	Value	Significant	i(0)	I(1)
			Asymptotic: n=1000	
F-statistics	3.501331	10%	2.2	3.09
K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Note: Data processed (2022)

Notes: (\*\*\*), (\*\*), (\*) significant at the level of 1%, 5% and 10%.

Based on Table 4.8 above, long-term ARDL shows that all independent variables have an effect on *Return On Assets* except Capital Adequacy Ratio (CAR). The Non Performing Financing (NPF) variable has a significant positive effect on  $\alpha=5\%$ , the Financing to Deposit Ratio (FDR) variable has a significant negative effect on  $\alpha=10\%$ , and the Operating Expenses and Operating Income (BOPO) variable has a significant negative effect on  $\alpha=1\%$ . Based on Table 4.8 the F-statistic value is 3.50 which is greater than the I(1) value of 3.09, so in this study there is a long-term relationship.

### Short Term ARDL ECM Test Results

Table 4.9 ECM ARDL Short Term

ECM Regression				
Case 2: Restricted Constant and No Trend				
Variables	coefficient	std. Error	t-Statistics	Prob.
D(ROA(-1))	0.543164	0.134833	4.028407	0.0038
D(ROA(-2))	0.735307	0.166616	4.413189	0.0022
D(ROA(-3))	0.479686	0.184409	2.601204	0.0316
D(CAR)	-0.122579	0.025599	-4.788430	0.0014
D(CAR(-1))	-0.153263	0.032591	-4.702595	0.0015
D(CAR(-2))	-0.199450	0.037480	-5.321543	0.0007
D(CAR(-3))	-0.090485	0.025163	-3.596028	0.0070
D(NPF)	-0.157276	0.100752	-1.561025	0.1571
D(NPF(-1))	-0.666410	0.130934	-5.089648	0.0009
D(NPF(-2))	-0.834460	0.149761	-5.571924	0.0005
D(NPF(-3))	-1.046722	0.172490	-6.068313	0.0003
D(NPF(-4))	-0.587767	0.111635	-5.265105	0.0008
D(FDR)	0.005085	0.004068	1.250080	0.2466
D(FDR(-1))	0.033640	0.006860	4.903579	0.0012
D(FDR(-2))	0.015018	0.004789	3.136009	0.0139
D(FDR(-3))	0.001403	0.004038	0.347335	0.7373
D(FDR(-4))	-0.012475	0.003675	-3.394457	0.0094
D(BOPO)	-0.107160	0.004607	-23.26166	0.0000
D(BOPO(-1))	0.051648	0.014928	3.459754	0.0086
D(BOPO(-2))	0.080624	0.018557	4.344638	0.0025
D(BOPO(-3))	0.054269	0.021941	2.473404	0.0385
CointEq(-1)*	-0.798976	0.136746	-5.842771	0.0004

Source: Processed data (2022)



In table 4.9 it can be seen that the value of  $CointEq(-1) = -0.7989$  and is significant at the 5% level, which means that short-term cointegration occurs in this model. The  $CointEq$  coefficient will then be used to measure the speed of adjustment, which is the speed of adjustment in response to changes. The  $CointEq$  value is valid if the coefficient is negative with a significant probability at the 5% level.

### Partial test results (t test)

The t test in multiple regression is used to determine whether the independent variable regression model partially has a significant effect on the dependent variable.

1. If  $t_{count} > t_{table}$ , then  $H_0$  is rejected and  $H_1$  is accepted. The independent variables affect the dependent variable.
2. If  $t_{count} < t_{table}$ , then  $H_0$  is accepted and  $H_1$  is rejected. The independent variable has no effect on the dependent variable.

Markttable can be seen in the statistical table at  $df = nk - 1$  or  $40 - 4 - 1 = 35$  (k is the number of independent variables). With a significance of 0.05 and a 2-sided test results are obtained  $t_{table} = 2.0301$ . Based on table 4.5, the significant test for each variable can be calculated as follows:

### Effect of CAR on ROA

The results of testing the CAR variable partially have no effect on ROA. This is because  $t_{count} < t_{table}$  where the value is  $0.179 < 2.030$  with a probability value of more than 0.05, which is 0.86. thus, the data does not support the hypothesis or  $H_1$  is rejected where CAR is not significant to Profitability as measured using ROA.

### Effect of NPF on ROA

The results of testing the NPF variable partially have a positive effect on ROA. This is because  $t_{count} > t_{table}$  where the value is  $2,482 > 2,030$  with a probability value of less than 0.05, namely 0.03. Thus, the data supports the hypothesis or  $H_2$  is accepted, this study contradicts the results of the hypothesis where NPF has a negative effect, but the results of this study NPF have a positive and significant effect on profitability as measured using ROA.

### Effect of FDR on ROA

The results of testing the FDR variable partially have a negative effect on ROA. This is because  $t_{count} > t_{table}$  where the value is  $-2.160 > 2.030$  with a probability value of more than 0.05, namely 0.06. thus, the data supports the hypothesis or  $H_3$  is accepted, where in this study the results of FDR are contrary to the results of the hypothesis where FDR has a positive effect on ROA, but the results of this study FDR have a negative and significant effect on profitability as measured using ROA.

### Effect of BOPO on ROA

Variable test results BOPO partially has a negative effect on ROA. This is because  $t_{count} > t_{table}$  where the value is  $-7.077 < 2.030$  with a probability value of less than 0.05, which is 0.000. thus, the data supports the hypothesis or  $H_4$  is accepted where BOPO has a negative and significant effect on profitability as measured using ROA.

### Research Conclusion

Based on the results of the discussion that has been described, it can be concluded as follows:

1. CAR Variable Partially has no effect and is not significant on Profitability as measured using ROA. Thus, the data does not support the hypothesis or  $H_1$  is rejected where CAR is not significant to Profitability as measured using ROA.

2. The NPF variable partially has a positive and significant effect on profitability as measured using ROA. Thus, the data supports the hypothesis or H2 is accepted, this study contradicts the results of the hypothesis where NPF has a negative effect, but the results of this study NPF have a positive and significant effect on profitability as measured using ROA.
3. The FDR variable partially has a negative and significant effect on profitability as measured using ROA. Thus, the data supports the hypothesis or H3 is accepted, where in this study the results of FDR are contrary to the results of the hypothesis where FDR has a positive effect on ROA, but the results of this study FDR have a negative and significant effect on profitability as measured using ROA.
4. The BOPO variable partially has a negative and significant effect on profitability as measured using ROA. Thus, the data supports the hypothesis or H4 is accepted where BOPO has a negative and significant effect on profitability as measured using ROA.

## BIBLIOGRAPHY

- Dendawijaya, Lukman. 2009. Banking Management. Jakarta : PT. Indonesian Ghalia.
- Dewa & Sitohang (2018). The Effect of Financial Ratios on the Financial Performance of the Banking Sector on the Indonesia Stock Exchange. Bass, et al. (2002). Transformational Leadership And Organizational Culture. Public Administration Quarterly. Vol. 17 No. 1
- Ghozali, Imam and Ratmono, Dwi. 2017. Multivariate Analysis and Econometrics with Eviews 10. Diponegoro University Publishing Agency: Semarang.
- Gunawan, I., Purnamasari, ED, & Setiawan, B. (2020). The Influence of CAR, NPF, FDR, and BOPO on Profitability (ROA) at Bukopin Sharia Banks for the 2012-2018 period. *JASMARK: Journal of Human Resource Management, Marketing and Finance*,
- Ida Ayu Adiatmayani Peling, IB (2018). THE INFLUENCE OF LDR, NPL, AND BOPO ON PROFITABILITY AT PT. BPD BALI PERIOD 2009-2016. Unud Management E-Journal, Vol. 7, No. 6, 2018 , 2999-3026
- Irawan, Dedi, et al, 2017 "Analysis of the Influence of Non Performing Financing (NPF), Operational Income Operating Costs (Bopo), Capital Adequacy Ratio (CAR), Financing to Deposit Ratio (FDR), and NIM on Return On Assets (ROA) in Sharia Commercial Banks in Indonesia in 2013-2017".
- Nugraheni, Peni and Nature, Whinda Febrianti Iskandar. (2014). The Effect of Liquidity Risk on Profitability in Islamic and Conventional Banking in Indonesia. Journal of Accounting and Investment, Vol 15 No. 1
- Priantan, Riha Dedi and Zulfian. (2011). The Effect of Capital Adequacy Ratio, Non Performing Loans, and Liquidity Level on the Profitability of Banking Listed on the Indonesia Stock Exchange. Journal of Accounting and Finance. Vol.1 (1)
- Purba, AI (2017). The Effect of Changes in Islamic Commercial Banks on Interest in Saving at Aceh Syariah Banks in the Community of Southeast Aceh District. HUMAN FALAH: Journal of Islamic Economics and Business Studies, 4(1).
- Rachmawati, S., & Marwansyah, S. (2019). EFFECT OF INFLATION, BI RATE, CAR, NPL, BOPO ON PROFITABILITY IN SOE BANKS: EFFECT OF INFLATION, BI RATE, CAR, NPL, BOPO ON PROFITABILITY IN SOE BANKS. Journal of Mantik, 3(1), 117-122.
- Saputri. (2017). Analysis of Current Ratio, Debt To Equity Ratio, Total Assets Turn Over and Net Profit Margin in Assessing the Financial Performance of Companies in Various Industrial Sectors on the Indonesia Stock Exchange 2016-2019.

- Suganda & Aji Hafiz & Egi Sutanto. (2018). Analysis of the Effect of Liquidity on Profitability in Trading Companies Registered in the Bei (2008-2012).
- Widodo, A. (2018). Analysis of the effect of the current ratio (cr), total asset turnover (tatto), and debt to asset ratio (dar) on return on assets (roa), and their impact on firm value. *Jimf (Forkamma Scientific Journal of Management)*, 1(2).
- Zemzem, A., Guesmi, K., & Ftouhi, K. (2017). The role of banks in the governance of non-financial firms: Evidence from Europe. *Research in International Business and Finance*, 42 (December), 784-793. <https://doi.org/10.1016/j.ribaf.2017.07.016>
- Zainuri, FRM, & Sampurno, RD (2022). ANALYSIS OF THE INFLUENCE OF CAR, NPF, FDR, BOPO, AND SIZE ON ROA OF SHARIA COMMERCIAL BANKS IN INDONESIA (2015-2020 Study). *Diponegoro Journal of Management*, 11(2).