



## The Effect Of Financing To Deposit Ratio (FDR), Non-Performing Financing (NPF), Capital Adequacy Ratio (CAR), Operating Expenses and Operating Income (BOPO) On ROA In Islamic Commercial Bank

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### ABSTRACT

**Purpose:** The goal of this study is to investigate the correlation between Financing to Deposit Ratio (FDR), Non-Performing Financing (NPF), Capital Adequacy Ratio (CAR), Operating Expenses and Operating Income (BOPO), and ROA. The following factors at Indonesian Islamic commercial banks from 2015 to 2021.

**Design/Method/Approach:** The Islamic commercial banks in Indonesia that have received approval from the Financial Services Authority are investigated using quantitative methods. Information from the Annual Published Financial Reports from 2015 to 2021 was used for this analysis multiple linear regression, coefficient correlation, and SPSS 24 hypothesis testing were used as analysis techniques.

**Findings:** The findings demonstrate that NPF, BOPO, and to a lesser extent FDR have a significant negative impact on ROA. In the meantime, ROA is significantly and favorably impacted by CAR. Only a factor of 43.6% of the profitability (ROA) in this study could be predicted by these variables; the remaining 56.4% was influenced by other variables.

**Originality/Values:** This article's research clarifies the combined and numerous effects of FDR, NPF, CAR, and BOPO on ROA. The study is unique from others in a number of ways, including its focus, depth of analysis, measurement techniques, sources used, and final conclusions.

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## INTRODUCTION

Sharia banking, frequently referred to as Islamic banking, this type of banking is founded on the Qur'an in foundations of Islamic law. Islamic banking is defined as banking that follows Islamic law.<sup>1</sup> Islamic banking departs from the standard model by instituting a framework based on profit sharing rather than an ownership structure. Although a bank's primary function is to act as an intermediary between those who have extra money and those who need it (deficit units), it also acts as an institution that facilitates the flow of money for payment traffic to relieve customers of the burden of monthly interest payments.<sup>2</sup>

The best metric for assessing a bank's success, according to Djumahir & Ratnawati (2013), is profitability. Profitability is measured by the return on equity (ROE) in the business world, and by the return on assets in the banking sector. Profitability is measured in this analysis using the rate of return on assets. Examining an organization's return on assets is one way to gauge its success (ROA). Increased ROA is a sign of better performance.<sup>3</sup>

Assessment of the country of a financial institution calls for understanding of sure financial ratio.<sup>4</sup> Bank Indonesia law no. 6/10 / PBI / 2004 paragraph (four) shows the use of the return of property (ROA) ratio to measure the profitability of a bank. Additionally, ROA places more emphasis on the business's capacity for functioning profitably as a whole.<sup>5</sup>

The Financing to Deposit Ratio is one indicator of a bank's efficiency (FDR). The rising FDR shows that banks are becoming more adept at directing

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<sup>1</sup> H Hendrianto, L Elfalahy - Al-Istinbath: Jurnal Hukum Islam, and undefined 2021, "Ayat-Ayat Hukum Dalam Alquran Mengatur Hubungan Sesama Manusia," *Journal.Iaincurup.Ac.Id*, accessed October 9, 2021, <http://journal.iaincurup.ac.id/index.php/alistinbath/article/view/2719>.

<sup>2</sup> Fahlevi, M., Irma, D., Maemunah,S,w& Mahfud, I. (2019). The Effect Of Financial Performance, External Factors, And Operational Ratio On Car Ratio Of Sharia Commercial Banks In Indonesia. *Journal of Research in Business, Economics and Management*, 12(2), 2348–2355”

<sup>3</sup> “Djumahir, E. N.H., & Ratnawati, K. (2013). Alamat Korespondensi: Analisa Rasio Keuanganterhadap Kinerja Bank Umum di Indonesia. *Jurnal Aplikasi Manajemen*, 11(1), 122–130”

<sup>4</sup> Hendrianto Hendrianto, Noza Aflisia, and Soleha Soleha, “Education Financing Policy : Implementation and Impact in Madrasah Aliyah,” *AL-FALAH: Journal of Islamic Economics* 7, no. 1 (2022): 47, <https://doi.org/10.29240/alfalah.v7i1.4321>.

<sup>5</sup> “Medyawati, H.,g& Yunanto, M. (2018). The effects of fdr,bopo , and profit sharing on the profitability of islamic banks in Indonesia. *International Journal of Economics, Commerce and Management, United Kingdom*, VI(5), 811–825”

funding, which has an effect on bank profits.<sup>6</sup> According to Almunawwaroh and Marlina (2018), Akbar and Pravasanti (2020), Almunawwaroh and Marlina (2018), the rise in FDR has had a substantial impact on bank profitability. While Lutfia Abriet Fajriati et al. (2021) and Ayu Kinanti & Purwohandoko (2017) find that FDR has a negative and significant effect on ROA in Indonesian Islamic banks, our results show the opposite.

This study uses Islamic commercial banks and banking facilities as moderating variables to empirically analyze the effects of FDR, NPF, CAR, and BOPO on ROA in Indonesian banks.<sup>7</sup> According to existing research, a bank would attempt to boost its fund acquisition the higher its FDR level, which will increase return on assets (ROA) since the FDR ratio determines a bank's capacity to its obligations in terms of liquidity. The NPF will also create annual fluctuations in the NPF ratio and the percentage of profit sharing for mudharabah deposits. Therefore, it is very important to research how FDR and NPF affect ROA at Islamic Commercial Banks.

Factors that affect profitability (ROA) are CAR, NPF, FDR, BOPO, TPF, and NIM, as well as PPA on the quality of earning assets and others. The author only uses four independent variables, namely FDR, NPF, CAR, and BOPO with other variables among the many factors that affect profitability in the explanation above because they are different from other variables, those four variables might be observed regarding how they affect ROA in Islamic commercial banks for the duration from 2015 to 2021.

Differentiating this study from others is the population analysed, the time frame covered, and the size of the sample, which consists of Islamic commercial banks in Indonesia. In light of this background, the following serves as a statement of the aims of this study: First, examine the impact of FDR on ROA in part; then, examine the impact of NPF on ROA in part; then, examine the impact of CAR on ROA in part; finally, examine the impact of BOPO on ROA in part; and finally, examine the impact of FDR, NPF, CAR, and BOPO on ROA all at once.

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<sup>6</sup>Harjanti, W., & Farhan, A. (2021). *Pengaruh FDR, NPF dan Rasio Likuiditas Terhadap Profitabilitas Bank Umum Syariah di Indonesia Variabel terikat adalah variabel yang terikat oleh variabel bebas Variabel terikat*. 2018, 13600–13608”

<sup>7</sup> Hendrianto, “Financing to Deposit Ratio (FDR) Sebagai Intervening Variabel Terhadap Profitabilitas: Evidance Dari Bank Umum Syariah Tahun 2016-2019,” *Disclosure: Journal of Accounting and Finance* 1, no. 1 (2021): 19–28.

## **Islamic Commercial Bank Theory**

Islamic banks, as defined by Fahlevi et al. (2019), are financial institutions whose primary objective is to facilitate financing and other services related to payment transactions or the circulation of money in a way that is consistent with Islamic principles. A financial institution that functions in accordance with the precepts of Islam and offers services related to the processing of payments is referred to as an Islamic bank.<sup>8</sup>

Islamic banks have a working system that does not depend upon Islamic bank interest, sometimes known as interest banks, or may be said to be a financial or banking institution whose operations and products are run primarily based at the Qur'an and the hadith of the Prophet saw.

Islamic banks not only aim to improve their financial performance, but also to distribute welfare such as poverty alleviation (financial access for the poor and remote people) and also to provide concern for realizing social welfare for the community. This concern is also in line with the commitment of sharia banks to achieve sharia economic goals (maqashid sharia) which include social justice, equal distribution of people's income and wealth as well as supporting economic development.<sup>9</sup>

The rules of a Sharia bank contract between the bank and other parties are based on Islamic law and apply only to transactions that are explicitly permitted by the Sharia, such as making deposits, financing businesses, and so on. Making-based financing (mudharabah), capital-based financing (musyarakah), profit-based purchasing and resale financing (murabahah), and transferable-title leasing are all examples of halal economic transactions (ijarahwa iqtina). As a direct result, the primary distinction between Islamic banking and conventional banking is that Islamic banking does not permit the charging of interest.<sup>10</sup>

## **Return On Asset (ROA)**

Danupranata (2016) argues that the profitability ratio is the best indicator of a bank's overall efficiency. Capital, financial, and asset management

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<sup>8</sup> Fahlevi, M., Irma, D., Maemunah, S., & Mahfud, I. (2019). The Effect Of Financial Performance, External Factors, And Operational Ratio On Car Ratio Of Sharia Commercial Banks In Indonesia. *Journal of Research in Business, Economics and Management*, 12(2), 2348–2355”

<sup>9</sup> Nugroho, L., Chandra Husnadi, T., Utami, W., & Hidayah, N. (2017). Maslahah and Strategy To Establish a Single State-Owned Islamic Bank in Indonesia. *Tazkia Islamic Finance and Business Review*, 10(1), 17–33.

<sup>10</sup> “Kusumastuti, W. I., & Alam, A. (2019). Analysis of Impact of CAR, NPF, BOPO on Profitability of Islamic Banks (Year 2015-2017). *Journal of Islamic Economic Laws*, 2(1), 30–59. <https://doi.org/10.23917/jisel.v2i1.6370>”

productivity all point to a high level of efficiency for businesses. The ratio of a company's profit to its total assets is a standard way to evaluate that business's profitability. Return on asset is a metric that can be used to evaluate how effectively a company is able to turn its activities into financial gains (ROA).<sup>11</sup>

According to Muhamad (2016), return on assets (ROA) is an overview of a bank's productivity in managing funds so that it can generate profits. This productivity is described by the formula:

$$\text{Return On Asset} = \frac{\text{Profit}}{\text{Total Asset}} \times 100\%$$

### **Financing to Deposit Ratio (FDR)**

The FDR compares the amount of money lent by banks to the amount of money deposited into banks by customers. In addition, FDR is an indicator of Islamic banks' ability to return money to outside parties using the money they have received from mudharabah financing.<sup>12</sup>

The FDR value shows whether or not the bank is effective in channelling financing, if the FDR value shows the percentage is too high or too low then the bank is considered ineffective in collecting and distributing funds obtained from customers.<sup>13</sup>

This ratio can be formulated as follows:

$$\text{FDR} = \frac{\text{total financing volume}}{\text{total receipts}} \times 100\%$$

### **Non Performing Financing (NPF)**

The NPF ratio is a measurement that determines how efficiently a bank is able to carry out its day-to-day business. The higher this ratio is, the greater the likelihood that Islamic banks will be less efficient. According to Ayu Kinanti and Purwohandoko (2017), the maximum amount of NPF that can be held at Bank Indonesia is 5%. If the amount of NPF held at the bank is greater than 5%, it will have a negative impact on the soundness of the bank in question,

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<sup>11</sup> “Siregar, A. W. (2021). *The Effect of BOPO, NPF, and CAR on Profitability in Indonesian Sharia Banking Listed on the Financial Service Authority*. 6(1)”

<sup>12</sup> Bramandita, B., & Harun, H. (2020). The Impact of ROA, BOPO, FDR, CAR, NPF on Mudharabah Profit Sharing Rate. *Journal of Islamic Economic Laws*, 3(2), 86–107. <https://doi.org/10.23917/jisel.v3i2.11335>”

<sup>13</sup> Riyadi, S., & Yulianto, A. (2014). Pengaruh pembiayaan bagi hasil, pembiayaan jual beli, financing deposit to ratio (FDR) dan non performing financing (NPF) terhadap profitabilitas bank umum syariah di Indonesia. *Accounting Analysis Journal*, 3(4), 466–474.

which will result in a lower score being obtained. The greater the potential loss on the investment, the higher the interest rate will be on the loan. In the meantime, the banking industry that operates within an Islamic economy does not recognize interest-bearing instruments. Instead, the Islamic financial system utilizes a profit-sharing system with a predetermined profit rate.<sup>14</sup>

This ratio can be formulated as follows:

$$\text{NPF} = \frac{\text{total non-performing financing}}{\text{total financing}} \times 100\%$$

### Capital Adequacy Ratio (CAR)

A bank's ability to fund its operations with its own capital can be evaluated in a number of ways. CAR also evaluates the capital-to-risk-weighted-assets ratio in accordance with government guidelines.<sup>15</sup> The ratio can be formulated as follows:

$$\text{CAR} = \frac{\text{capital}}{\text{risk weighted assets}} \times 100\%$$

### Operating Expenses to Operating Income (BOPO)

BOPO is one of the factors that can influence the profitability of a bank. The BOPO ratio is an indicator of how proficient and efficient bank operations are used to measure how proficient and efficient they are (Syakhrun et al., 2020). When this ratio is lower, it indicates that the operational costs incurred by the bank in question as a result of the possibility that the bank will experience problematic conditions will be carried out in a more cost-effective manner.

The formula used to convert operating expenses to operational revenue is:

$$\text{BOPO} = \frac{\text{Operating Ekspense}}{\text{Operating Income}} \times 100\%$$

## RESEARCH METHOD

### Data Sources and Research Variables

This research can be classified as quantitative because of the particular kind of data that was collected. This type of research is referred to as

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<sup>14</sup> “Ayu Kinanti, R., & Purwohandoko, P. (2017). Influence of Third-Party Funds, Car, Npf and Fdr Towards the Return on Assets of Islamic Banks in Indonesia. *JEMA: Jurnal Ilmiah Bidang Akuntansi Dan Manajemen*, 14(02), 135”

<sup>15</sup> Siregar, A. W. (2021). *The Effect of BOPO, NPF, and CAR on Profitability in Indonesian Sharia Banking Listed on the Financial Service Authority*. 6(1)”

quantitative research because it involves the collection and analysis of numerical data via mathematical formulas. This research makes use of real data because the information in question can be found in the wild and is documented on the official website of the regulatory body for financial services.

The data was gathered from the statistical report of Islamic commercial banks for the period between 2015 and 2021. The variables financing to deposit ratio (FDR), non-performing financing (NPF), capital adequacy ratio (CAR), operating costs and operating income (BOPO), and return on assets (ROA) are used for the years 2015 through 2021. The details that follow concern the variables that were used.

Tabel 1. Average Financial Ratios at Islamic Commercial Banks in Indonesia Period 2015-2021

Variable	2015	2016	2017	2018	2019	2020	2021
<b>FDR</b>	88,03%	85,99%	79,61%	78,53%	77,91%	76,36%	70,12%
<b>NPF</b>	4,84%	4,42%	4,76%	3,36%	3,23%	3,13%	2,59%
<b>CAR</b>	15,02%	15,95%	17,91%	20,39%	20,59%	21,64%	25,71%
<b>BOPO</b>	97,01%	96,23%	94,91%	89,18%	84,45%	85,55%	84,33%
<b>ROA</b>	0,49%	0,63%	0,63%	1,28%	1,73%	1,40%	1,55%

Source: Sharia Banking Statistics

The table above shows that the financial ratios fluctuate and deviate from the assumption that there is a relationship between CAR, BOPO, NPF and FDR on ROA. In 2019 when ROA rose to 1.73%, NPF actually decreased to 3.23%. On the other hand, when ROA decreased in 2015 and 2016 by 0.49% and 0.63%, respectively, NPF actually increased to 4.84% and 4.42%. This contradicts the theory which states that NPF has a positive effect on ROA. Meanwhile, in 2015 when FDR rose to 88.03%, ROA decreased by 0.49%. This gives the impression that FDR has a negative effect on ROA.

Where in the past it was said that FDR had a favourable impact on ROA. In 2020 and 2021, when the NPF ratio decreased to 3.13% and 2.59%, ROA actually increased, to 1.40% and 1.55%, respectively. The same thing also happened to BOPO, where in 2020 and 2021 there was a decline in BOPO to 85.55% and 84.33%, respectively. However, ROA actually increased to 1.40% and 1.55%, respectively, so there is an impression that BOPO has a positive deflection ROA. Whereas it was said earlier that BOPO has a negative impact on ROA.

## **Method Of Analysis Data**

### ***Classic Assumption Test***

A classical hypothesis test was performed that the regression model used becomes the Best Linear Unbiased Estimator model. So that the model can be used to provide certainty and consistency on the regression modal used in analysing the data. Some examples of classical assumption tests include the normality test, the autocorrelation test, the multicollinearity test, and the heteroscedasticity test (Lutfiana & Hermanto, 2021).

### ***Hypothesis Testing***

#### **a. Partial Test (t-test)**

The t-test is used to determine whether or not the independent factors have any impact at all on the variable that is being tested (Setiawati et al., 2018). The t-test, which is based on the comparison of t-count and t-table values and a significance level of 5% or 0.05 (Mardiatmoko, 2020), uses the following test criteria to determine whether or not a hypothesis is supported:

- If  $-t \text{ table} \leq t \text{ count} \leq t \text{ table}$  and  $\text{significance} > 0.05$  the meaning  $H_0$  is accepted.
- If  $t \text{ count} < -t \text{ table}$  or  $t \text{ count} > t \text{ table}$  and  $\text{significance} < 0.05$  the meaning  $H_0$  is rejected.

#### **b. Simultaneous Test (f-test)**

The aim of this hypothesis test is to establish a joint interpretation of the parameters, or the combined or simultaneous independent and dependent factors' effects on the dependent variable. The significance level of 5% or 0.05 with the test criteria used are as follows <sup>16</sup>.

- $H_0$  is accepted if  $F \text{ count} < F \text{ table}$  and  $\text{significance} > 0.05$
- $H_0$  is rejected if  $F \text{ count} > F \text{ table}$  and  $\text{significance} < 0.05$

#### **c. Coefficient Determination R<sup>2</sup> and Adjusted R-Square**

According to the coefficient of determination,  $x_1$ ,  $x_2$ , and  $x_3$  are all related to  $y$ . The independent variable effectively explains the dependent variable if the calculated coefficient of determination (R<sup>2</sup>) is close to 1. This shows that nearly every independent variable has the information needed to forecast the variation of the dependent variable. The independent variable is

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<sup>16</sup> (Mardiatmoko, 2020)



becoming less effective at explaining the dependent variable, on the other hand, if R2 is dwindling down to zero.

Because of the fundamental flaw in the capability of the coefficient of determination to be applied to the quantity of independent variables, R2 needs to be increased. As a result, the use of adjusted R2 is recommended by numerous studies for the purpose of evaluating regression models. In contrast to R2, adjusted R2 is evaluated differently and can both increase and decrease depending on whether or not one independent variable is added to the model. The formula that you can use is as follows:

$$R^2 = \frac{JKR}{Jyy} = \frac{[b_0 \sum_{i=1}^n y_i + b_1 \sum_{i=1}^n x_{1i} y_i + b_2 \sum_{i=1}^n x_{2i} y_i + b_3 \sum_{i=1}^n x_{3i} y_i + b_4 \sum_{i=1}^n x_{4i} y_i - (\sum_{i=1}^n y_i)^2/n]}{\sum_{i=1}^n y_i^2 - \frac{(\sum_{i=1}^n y_i)^2}{n}}$$

And Adj. R following formula by:

$$\text{Adjusted } R^2 = 1 - \frac{(1 - R^2)(n - 1)}{n - 4 - 1}$$

#### d. Correlation Coefficient

The strength of the correlation between the independent and dependent variables can be determined using this calculation. To get a rough estimate of the multiple correlation coefficient, use the following formula:

$$R = \sqrt{R^2} = \sqrt{\frac{[b_0 \sum_{i=1}^n y_i + b_1 \sum_{i=1}^n x_{1i} y_i + b_2 \sum_{i=1}^n x_{2i} y_i + b_3 \sum_{i=1}^n x_{3i} y_i + b_4 \sum_{i=1}^n x_{4i} y_i - (\sum_{i=1}^n y_i)^2/n]}{\sum_{i=1}^n y_i^2 - \frac{(\sum_{i=1}^n y_i)^2}{n}}}$$

#### e. Multiple Linear Regression Test

The general form of the equation for multiple linear regression with four independent variables consists of the independent variable ( $x_1$ ), the independent variable ( $x_2$ ), the independent variable ( $x_3$ ), the independent variable ( $x_4$ ), and the dependent variable. The equation for multiple linear regression looks like this when written out:

$$\hat{y} = b_0 + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4$$

Information:

$\hat{y}$	= Return on assets
$b_0$	= Constant
$b_1, b_2, b_3, b_4$	= Variable coefficient
$x_1$	= Independent variable (FDR)
$x_2$	= Independent variable (NPF)
$x_3$	= Independent variable (CAR)
$x_4$	= Independent variable (BOPO)

Based on the description above, the framework of thought in this study is as follows:

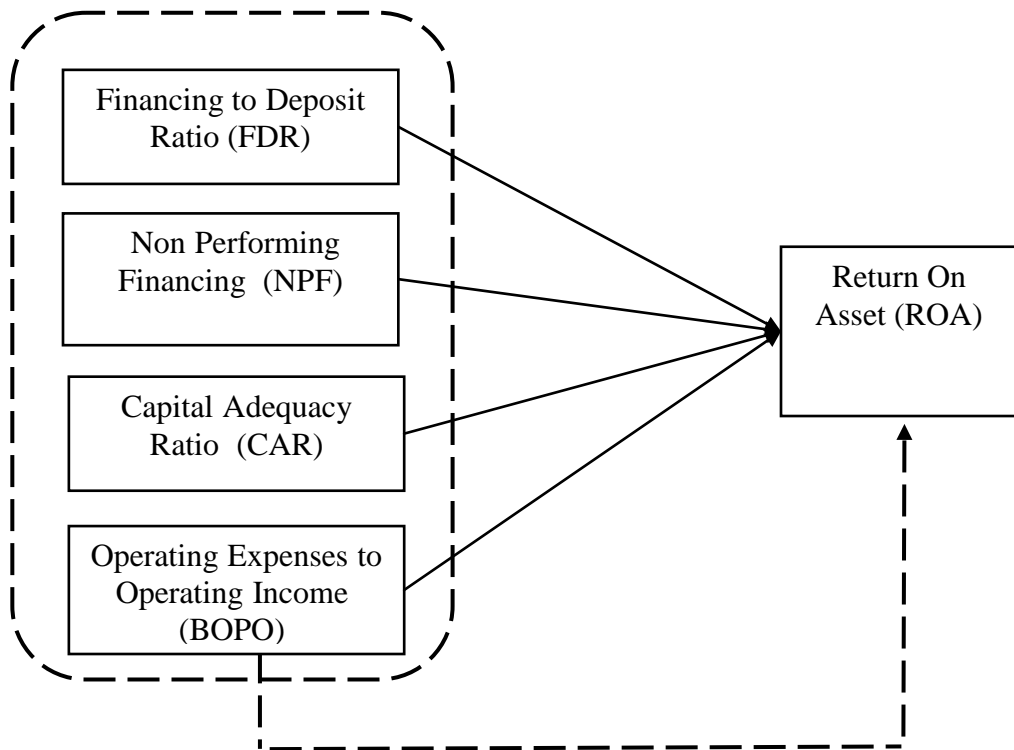


Figure 1. Chart of Conceptual Framework

Description :

- : Partial Influence
- - - - -→ : Simultaneous Influence

Based on these study of theory and previous research and the conceptual framework of the above research, the hypothesis in this research are as follow:

- $H_{a_1}$ : Financing to Deposit Ratio has a significant impact on Return On Asset
- $H_{a_2}$ : Non Performing Financing has a significant impact on Return On Asset
- $H_{a_3}$ : Capital Adequacy Ratio has a significant impact on Return On Asset
- $H_{a_4}$ : Operating Expenses to Operating Income has a significant impact on Return On Asset

## RESULT AND DISCUSSION

### Normality Test

The Kolmogorov-Smirnov value with the condition is used in this study's normalcy test to determine that the sig value  $> 0.05$  can be said to be normal. Results of the study's normalcy test are listed in the paragraphs that follow.

Tabel 1. Normality Test  
Test Kolmogorov-Smirnov One Sample

		Unstandardized Residual
N		84
Normal Parameters <sup>a, b, iii</sup>	Mean	.0000000
	Std. i Deviation	44.001601664
	Most Extreme Differences	
	Absolute	.105
	Positive	.072
	Negative	-.105
Test Statistic		.105
Asymp. Sig. (2-tailed)		.023 <sup>c</sup>

- a. Test distribution is Normal.
- b. Calculate from data.
- c. Lill for Significance Correction

Source: SPS 24 Output Result

According to table 1, the Asymp.Sig (2-tailed) value in this study was 0.023  $> 0.05$ , indicating that the residuals followed a normal distribution. When the data follows a normal distribution, the residual variance is constant and free of outliers. We'll choose the multiple linear regression test next because the data are normally distributed.

### Multicollinearity Test

This type of traditional assumption test is intended to determine the predicted effect of each indicator or its dimensions. The degree to which the size of the correlation coefficient is similar to that of the independent variables serves as a proxy for the link between the variables. It has been argued that high values of tolerance and variance inflation indicate the presence of

multicollinearity. In the absence of serious multicollinearity issues, it is safe to assume that an independent variable has a tolerance value greater than 0.10 and a VIF of lower than 10. Contrarily, if the VIF is greater than 10 and the tolerance value is lower than 0.10, there is a significant issue with multicollinearity among the independent variables. a summary of the results from the multicollinearity tests carried out in this study.

Table 2. Multicollinearity Test

Model	Collinearity Statistics		Description
	Tolerance	VIF	
FDR	.927	1.078	Non-Multicollinearity
NPF	.971	1.029	Non-Multicollinearity
CAR	.926	1.079	Non-Multicollinearity
BOPO	.989	1.011	Non- Multicollinearity

Dependent Variable: ROA

Source: SPSS 24 Output Result

Table 2 demonstrates that there is a link between the independent variables explored in this study. We can estimate the outcome of the dependent variable to some extent because the VIF is 10, and the tolerance for the independent variables is greater than 0.1. Based on these results, we can conclude that the independent variables do not significantly correlate with one another in predicting the dependent variable. This indicates that each independent variable can be treated independently, or that there is no conceptual connection between any two independent variables.

### Autocorrelation Test

The autocorrelation test checks if the period t (was) confounding error in the regression model is proportional to the period t-1 (was) confounding error. Still, inter-object autocorrelation can be uncovered. One of the tests that is used to identify autocorrelation is known as the iDurbin-Watson test. Using the Durbin-Watson value, one can determine whether or not autocorrelation is present or absent by applying the following criterion: the DW value must be between -2 and +2 for there to be no autocorrelation.

Table 3. Autocorrelation Test

Regression Model	Durbin Watson
The Effect of FDR, NPF, CAR, and BOPO on ROA	1.508

Source: SPSS 24 Output Result

The fact that the DW value ranges from minus two to plus two, as shown in the table 3 above, demonstrates that the regression model that was used does not have an issue with autocorrelation. When there are no issues with autocorrelation in the data, this means that the prediction error of the independent variable on the dependent variable does not result in a significant amount of residual between the observations of the data.

### Heteroscedasticity Test

According to Imam Ghozali, the heteroscedasticity test is employ to determine whether or not the variance of the residuals is the same based on one observation compared to another observation. If the residuals are relatively the same between observations, then the data is homoscedastic, whereas if they are different, they are called heteroscedastic. If there is no heteroscedasticity or the variance is different, a decent regression equation. There is no concern with heteroscedasticity if the significant value 1 is bigger than 10.05. However, if the significant value is less than 0.05, the regression model displays heteroscedasticity. The outcomes of this study's tests for heteroscedasticity are as follows.

Table 4. Heteroscedasticity Test

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
FDR	-.006	.003	-.209	-2.446	.017
NPF	-.122	.035	-.288	-3.443	.001
CAR	.051	.010	.442	5.154	.000
BOPO	-.005	.002	-.189	-2.281	.025

Source: SPSS 24 (2022) Output Result

Based on table 4 above, it can be see that in each data group on the variable number of FDR, NPF, CAR, and BOPO have a homogeneous pattern in predicting ROA with a significance result on the SPSS test of 0.017; 0.001; 0.000 and 0.025 ( $< 0.05$ ).

## Hypothesis Testing

### *Partial Test (t-test)*

With the criteria of comparing the probability value of each variable.

Table 5. Table of Probability (T-Statistics)

Model	t	Sig.
(Constant)	4.067	.000
FDR	-2.446	.017
NPF	-3.443	.001
CAR	5.154	.000
BOPO	-2.281	.025

Source: SPSS 24 (2022) Output Result

#### a. First Hypothesis Testing ( $H_{a1}$ )

It is reasonable to assume that  $H_{a1}$  is received given that the Sig. for the effect of FDR on ROA is  $0.017 < 0.05$  and the t value is  $-2.446 < t$  table  $-1.664$ . This indicates that there is an inverse relationship between ROA and the FDR variables.

#### b. Second Hypothesis Testing ( $H_{a2}$ )

We can conclude that  $H_{a2}$  is received because the Sig. for the influence of NPF on ROA is  $0.001 < 0.05$  and the t count is  $-3.443 < t$  table  $-1.664$ , indicating that there is a statistically significant inverse relationship between the NPF variable and ROA.

#### c. Third Hypothesis Testing ( $H_{a3}$ )

It is reasonable to assume that  $H_{a3}$  is received given that the Sig. for the effect of CAR on ROA is  $0.000 < 0.05$  and t is  $5.154 > t$  table  $1.664$ . This demonstrates that CAR affects ROA in a favorable and statistically significant way.

#### d. Fourth Hypothesis Testing ( $H_{a4}$ )

Given that the t value is  $-2.281 < t$  table  $-1.664$  and the Sig. value for the BOPO effect on ROA is  $0.025 < 0.05$ , we can conclude that  $H_{a4}$  is received, indicating a statistically significant inverse relationship between the BOPO variable and ROA.

### *Simultaneous Test (f-test)*

Table 6. Simultaneous Test (f-test)

Model	df	F	Sig.
Regression	4	17.019	.000 <sup>b</sup>
Residual	79		
Total	83		

Source: SPSS 24 (2022) Output Result

The probability value in the table above is  $0.000 < 0.05$  and the calculated f value is  $17,019 > f$  table 2.49. It is therefore possible to draw the conclusion that the FDR, NPF, CAR, and BOPO variables all significantly impact on ROA at the same time.

### **Coefficient of Determination R<sup>2</sup>**

Table 7. Coefficient of Determination Test

R-Squared	.463
Adjusted R-Squared	.436

Source: SPSS 24 (2022) Output Result

The adjusted R-squared value is 0.436, and the R-squared value is 0.463. These values are based on the outcomes of the processing of the data. This exemplifies the significance of the concurrent influence that the variables X1, X2, X3, and X4 have on the Y variable, which has a value of 43.6%. The remaining explanations can be attributed to other factors, however, which were not investigated in this study.

### **Correlation Coefficient**

Table 8. Correlation Coefficient

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1.	.680 <sup>a</sup>	.463	.436	45.10181	1.508

- a. Predictors: (Constant), FDR, NPF, CAR, BOPO
- b. Dependent Variable: ROA

Source: SPSS 24 (2022) Output Result

The table above shows that the correlation coefficient (R) is 0.680, it means the random variables FDR, NPF, CAR, and BOPO are strongly correlated with the random variables ROA.

### Multiple Linear Regression Test

Tabel 9. Multiple Linear Regression Test

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	150.716	37.005		4.067	.000
FDR	-.006	.003	-.209	-2.446	.017
NPF	-.122	.035	-.288	-3.443	.001
CAR	.051	.010	.442	5.154	.000
BOPO	-.005	.002	-.189	-2.281	.025

a. **Dependent Variable: ROA**

Source: SPSS 24 (2022) Output Result

From the test results above, it can be seen that the constant value obtained is 150.716, while the value of FDR obtained is -0.006, NPF value obtained is -0.122, CAR value obtained is 0.051 and the value of BOPO is -0.005. Then it can be formulated as follows:

$$\hat{y} = 150.716 - 0.006x_1 - 0.122x_2 + 0.051x_3 - 0.005x_4$$

Thus, it can be concluded that:

- Constants(a) = 150.716. Which means that if the value on FDR, NPF, CAR, and BOPO is 0 or constant, then the value on ROA is 150.716 or 150.716%.
- If the FDR value increases by 1%, then the resulting ROA will decrease by 0.006%.
- If the NPF value increases by 1%, then the resulting ROA will decrease by 0.122%.
- If the CAR value increases by 1% then the resulting ROA will increase by 0.051%.
- If the BOPO value increases by 1% then the resulting ROA will decrease by 0.005%.



### **Effect of Financing to Deposit Ratio on Return On Assets**

Multiple linear regression analysis calculations show that the FDR variable (X1) is statistically significant ( $t = -2.446$ ,  $sig = 0.017$ ). The results are shown as a statistically significant rate. There is statistical evidence from a t-test at the ( $p$ ) 0.05 level that FDR (X1) reduces the ROA of Islamic commercial banks, so this regulation is bad for the financial health of the sector overall (Y). An increase in FDR (X1) in Islamic commercial banks in Indonesia serves as a signal to dampen ROA (Y) profitability at these institutions.

As shown in this research, Pravasanti (2018) confirms that FDR has a negative impact on profits (ROA). How well a bank is able to replace funds that have been withdrawn can be measured by comparing the amount of financing it has provided to the amount of deposits it has received. The FDR can also show how much the bank can count on the funds being transferred. There is a one-to-one relationship between the amount of money made and the amount of money borrowed.

### **Effect of Non Performing Financing on Return On Assets**

When analysing the relationship between NPF and ROA, the multiple linear regression analysis's statistical calculations reveal that the NPF variable (X2) has a t-count of -3.443 and a significance level of 0.001. Because the t-count is supported by significance ( $p$ ) of less than 0.05, the NPF (X2) has a detrimental effect on the profitability of Islamic commercial banks as measured by ROA (Y). As a direct result of an increase in NPF (X2) in Islamic commercial banks, a decrease in ROA (Y) in Indonesia-based Islamic commercial banks will unavoidably take place.

This research is supported by Pravasanti (2018), which shows that NPF has a significant negative effect on ROA. This shows that the aim that the NPF has an impact on the decrease in profitability, and the greater the NPF, the greater this impact will be. The high NPF also led to the accumulation of larger reserves, which ultimately led to a reduction in the amount of capital held by the bank.

### **Effect of Capital Adequacy Ratio on Return On Assets**

According to the findings of the study that was conducted on the relationship between CAR and ROA, the multiple linear regression analysis's statistical calculations reveal that the CAR variable (X3) has a t-count of 5.154 and a significance of 0.000. The analysis led to this conclusion. An increase in CAR (X3) improves Islamic commercial banks' return on equity (Y). This is due to the fact that t-count is supported by significance ( $p$ ) of less than 0.05. When the amount of CAR (X3) in Islamic commercial banks is raised, it will not be

difficult to raise the ROA (Y) in Islamic commercial banks that are operating in Indonesia.

This research is supported by Risalah et al., (2018), which states that the CAR, Operational Expense to Operating Income, FDR, and Profit all have a partial affect on the ROA. Risalah et al., (2018) also states that the ROA is partially affected by Profit. As a direct consequence of this, it is anticipated that Islamic banks will be able to channel funds with greater efficiency and discretion. Sharia banks should pay attention to the distribution of finance because it determines the direction of financial services, which helps to lower NPF, which affects ROA.

### **Effect of Operating Expenses and Operating Income on Return On Assets**

The BOPO variable (X4) has a t-count of -2.281 and a significance of 0.025, according to the results of statistical calculations on multiple linear regression analysis. These results are noteworthy because they show a strong correlation between the two variables. The BOPO (X4) has a negative impact on Islamic commercial banks' profitability as measured by ROA, according to the t-count, which is supported by a significance level of  $p < 0.05$ . The decline in ROA (Y) at Islamic commercial banks doing business in Indonesia will be significantly impacted by the rise in BOPO (X4) at Islamic commercial banks.

This study is supported by Ambris Diknawati (2022), which claims that BOPO (X4) has a significant negative impact on the profitability ROA (Y) of Islamic banks. The t-count for this finding is -5.292, and the level of significance is 0.000. This suggests that increasing BOPO will have a negative impact on Islamic commercial banks' profitability, specifically ROA.

### **CONCLUSION**

Research and subsequent discussion lead one to the conclusion that asset profitability is affected by four different ratios: financing to deposit ratio (FDR), capital adequacy ratio (CAR), non-performing financing ratio (NPF), and operating expense ratio (OER) (ROA). The research shows that FDR, NPF, and BOPO each significantly impact ROA in a negative direction, while CAR significantly impacts ROA in a positive direction. Simultaneous tests reveal that each of the four variables (FDR, NPF, CAR, and BOPO) significantly impacts ROA.

The adjusted r-squared value for the coefficient of determination is 0.436, and the r-squared value itself is 0.463. This demonstrates that the variables FDR, NPF, CAR, and BOPO are all having an effect on the ROA

variable, which is 43.6% of the total. The remaining variance can be accounted for by other factors that were not investigated in this study.

Financial ratios that can serve as a reference bank are expected to be penalized by banking companies in order to identify issues and carry out the necessary follow-up improvements. If the NPF rises, the bank's loan has not been as effective as it should have been.■

## REFERENCES

- Akbar, T. (2021). The Effect of Capital Adequacy Ratio, Non-Performing Financing, and Financing to Deposit Ratio on Financial Performance: Study at The Islamic Microfinance Banks in Indonesia. *Journal of Management and Islamic Finance*, 1(1), 32–47. <https://doi.org/10.22515/jmif.v1i1.3566>
- Almunawwaroh, M., & Marliana, R. (2018). Pengaruh Car,Npf Dan Fdr Terhadap Profitabilitas Bank Syariah Di Indonesia. *Ammwaluna: Jurnal Ekonomi Dan Keuangan Syariah*, 2(1), 1–17. <https://doi.org/10.29313/amwaluna.v2i1.3156>
- Ambris Diknawati, D. (2022). Analisis Pengaruh CAR, NPF, FDR dan BOPO Terhadap Profitabilitas Bank Umum Syariah. *Journal of Applied Islamic Economics and Finance*, 2(2), 333–341. <https://doi.org/10.35313/jaief.v2i2.2972>
- Ayu Kinanti, R., & Purwohandoko, P. (2017). Influence of Third-Party Funds, Car, Npf and Fdr Towards the Return on Assets of Islamic Banks in Indonesia. *JEMA: Jurnal Ilmiah Bidang Akuntansi Dan Manajemen*, 14(02), 135. <https://doi.org/10.31106/jema.v14i02.524>
- Bramandita, B., & Harun, H. (2020). The Impact of ROA, BOPO, FDR, CAR, NPF on Mudharabah Profit Sharing Rate. *Journal of Islamic Economic Laws*, 3(2), 86–107. <https://doi.org/10.23917/jisel.v3i2.11335>
- Djumahir, E. N. H., & Ratnawati, K. (2013). Alamat Korespondensi: Analisa Rasio Keuangan terhadap Kinerja Bank Umum di Indonesia. *Jurnal Aplikasi Manajemen*, 11(1), 122–130.
- Effendi, J. (2018). The determinant of equity financing in sharia banking and sharia business units. *Economic Journal of Emerging Markets*, 10(1), 111–120. <https://doi.org/10.20885/ejem.vol10.iss1.art12>
- Fahlevi, M., Irma, D., Maemunah, S., & Mahfud, I. (2019). The Effect of Financial Performance, External Factors, And Operational Ratio On Car Ratio Of Sharia Commercial Banks In Indonesia. *Journal of Research in Business,EconomicsandManagement*,12(2),2348–2355.<http://www.scitecresearch.com/journals/index.php/jrbem/article/view/1705>
- Harjanti, W., & Farhan, A. (2021). Pengaruh FDR , NPF dan Rasio Likuiditas Terhadap Profitabilitas Bank Umum Syariah di Indonesia Variabel terikat adalah variabel yang terikat oleh variabel bebas . *Variabel terikat*. 2018, 13600–13608.
- Hendrianto. “Financing to Deposit Ratio (FDR) Sebagai Intervening Variabel Terhadap Profitabilitas: Evidance Dari Bank Umum Syariah Tahun 2016-2019.” *Disclosure: Journal of Accounting and Finance* 1, no. 1 (2021): 19–28.
- Hendrianto, H, L Elfalahy - Al-Istinbath: Jurnal Hukum Islam, and undefined 2021.

- “Ayat-Ayat Hukum Dalam Alquran Mengatur Hubungan Sesama Manusia.” *Journal.Iaincurup.Ac.Id.* Accessed October 9, 2021. <http://journal.iaincurup.ac.id/index.php/alistinbath/article/view/2719>.
- Hendrianto, Hendrianto, Noza Aflisia, and Soleha Soleha. “Education Financing Policy : Implementation and Impact in Madrasah Aliyah.” *AL-FALAH: Journal of Islamic Economics* 7, no. 1 (2022): 47. <https://doi.org/10.29240/alfalah.v7i1.4321>.
- Kusumastuti, W. I., & Alam, A. (2019). Analysis of Impact of CAR, NPF, BOPO on Profitability of Islamic Banks (Year 2015-2017). *Journal of Islamic Economic Laws*, 2(1), 30–59. <https://doi.org/10.23917/jisel.v2i1.6370>
- Lutfia Abriet Fajriati, Asmak Ab Rahman, & Shinta Maharani. (2021). Effect of Financing To Deposit Ratio and Non-Performing Financing of Return on Assets With a Capital Adequacy Ratio As Variable Intervening in Islamic Banking in Indonesia in 2012-2019. *Niqosiya: Journal of Economics and Business Research*, 1(2), 286–302. <https://doi.org/10.21154/niqosiya.v1i2.427>
- Lutfiana, D. E. S., & Hermanto, S. B. (2021). Pengaruh Profitabilitas, Leverage dan Ukuran Perusahaan Terhadap Kinerja Keuangan. *Jurnal Ilmu Dan Riset Akuntansi*, 10(2), 1–18.
- MARDIATMOKO, G.-. (2020). Pentingnya Uji Asumsi Klasik Pada Analisis Regresi Linier Berganda. *BAREKENG: Jurnal Ilmu Matematika Dan Terapan*, 14(3), 333–342. <https://doi.org/10.30598/barekengvol14iss3pp333-342>
- Nugroho, L., Chandra Husnadi, T., Utami, W., & Hidayah, N. (2017). Masalah and Strategy To Establish a Single State-Owned Islamic Bank in Indonesia. *Tazkia Islamic Finance and Business Review*, 10(1), 17–33.
- Pravasanti, Y. A. (2018). Pengaruh NPF dan FDR Terhadap CAR dan Dampaknya Terhadap ROA Pada Perbankan Syariah Di Indonesia. *Jurnal Ilmiah Ekonomi Islam*, 4(03), 148. <https://doi.org/10.29040/jiei.v4i03.302>
- Risalah, S., Anshori, M. Y., & Primasari, N. S. (2018). The Impact of CAR, BOPO, NPF , FDR, DPK and Profit Sharing on ROA of Sharia Banks Listed in Bank Indonesia (Study at Sharia Commercial Banks). *International Conference on Technopreneurship and Education*, 240–245.
- Riyadi, S., & Yulianto, A. (2014). Pengaruh pembiayaan bagi hasil, pembiayaan jual beli, financing deposit to ratio (FDR) dan non performing financing (NPF) terhadap profitabilitas bank umum syariah di Indonesia. *Accounting Analysis Journal*, 3(4), 466–474.
- Setiawati, R., Nidar, S. R., Anwar, M., & Masyita, D. (2018). Islamic financial literacy: Construct process and validity. *Academy of Strategic Management Journal*, 17(4).
- Siregar, A. W. (2021). *The Effect of BOPO , NPF , and CAR on Profitability in Indonesian Sharia Banking Listed on the Financial Service Authority*. 6(1).
- Syakhrun, M., Amin, A., & Anwar. (2020). Pengaruh Car, Bopo, Npf Dan Fdr Terhadap Profitabilitas Pada Bank Umum Syariah Di Indonesia. *Bongaya Journal of Research in Management*, 3(2), 7–13.