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The Effect of Firm Size and FDR on ROA Through BOPO as an Intervening Variable at Islamic People's Economic Banks (BPRS) in Indonesia

Ridho Muarief[1]*, Agustinus Doedyk Setiyawan[2], Priyanto[3] , Dimas Ari Setyawan[4]
Politeknik Negeri Madiun
Corresponding Author: Ridho Muarief ridho.muarief@pnm.ac.id

A R T I C L E I N F O

Kata Kunci: Firm Size, FDR, ROA, BOPO

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A B S T R A C T

This study compares the effects of financing to deposit ratio (FDR) and bank size (firm size) on return on equity through BOPO as an Intervening Variable at Islamic People's Economic Bank (BPRS) in Indonesia. The data collection method is done through indirect observation method in the form of secondary data from Sharia People's Economic Bank monthly financial statements (BPRS). Using a purposive sampling technique, 60 BPRS data were included in the sample. Data analysis using Eviews version 9 tool involved path analysis. While FDR, BOPO, and Size had a significant negative impact on profitability, the T test results indicated that it had a significant positive impact but had no significant negative effect on profitability, while NPF was able to mediate FDR, BOPO, and SIZE on profitability, while NPF was unable to mitigate the impact on earnings.

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INTRODUCTION

In recent years, Indonesia has seen a rapid growth in Islamic banking. Numerous factors, including growing public awareness of the significance of Islamic finance and government support through various policies, are responsible for this. The Sharia People's Economic Bank (BPRS) and other Islamic banking business actors face both opportunities and challenges as a result of the expansion of Islamic finance.

One of the main challenges faced by BPRS is maintaining profitability. Profitability is an important indicator of a bank's financial health. A profitable bank will be better able to provide quality services to customers, and be more resilient to economic turmoil.

Operational efficiency is one of the many variables that can impact bank profitability. The BOPO (Operating Expenses Operating Income) ratio is a useful tool for measuring operational efficiency. The bank is more efficient the lower its BOPO ratio operations and the higher its potential to achieve high profitability.

Another factor that can affect bank profitability is funding. Bank funding is obtained from various sources, including third party funds (DPK). DPK can be measured using the FDR (Financing to Deposit Ratio) ratio. The higher the FDR ratio, the larger the proportion of funds that the bank uses to fund initiatives. Should the bank can efficiently allocate funding so that there are fewer bad loans than there are good loans, this could boost bank profitability.

LITERATURE REVIEW

Islamic Bank

Banking Law No. 7 of 1992 states that a BPR is a financial institution that distributes funds as a BPR business and only takes deposits in time deposits, savings accounts, and/or other forms that are comparable to those forms. According to Banking Law No. 10 of 1998, BPR is a bank financial institution that conducts business either traditionally or in accordance with Islamic law. The letter of the Board of Directors of Bank Indonesia No. 32/36/KEP/DIR / concerning Rural Banks Based on Sharia Principles dated May 12, 1999 contains regulations for the implementation of BPRs that use sharia principles. Technically speaking, Islamic BPR in this situation follows sharia law but functions similarly to conventional BPR.

The following are the reasons behind the founding of BPR Syariah: enhancing the financial well-being of the Muslim Ummah, with a focus on the underprivileged population that resides primarily in rural areas. Boost job opportunities, particularly those at the subdistrict level, to slow down the rate of urbanization. encouraging the principle of ukhuwah islamiyyah through commercial endeavors to increase per capita income and provide a living standard that is adequate.

The following operational strategy is necessary in order to meet BPR Syariah's operational goals: Instead of waiting for facility requests to come in, BPR Syariah is proactive in helping small businesses that require extra funding to succeed by conducting research and socialization. By giving medium- and small-scale businesses priority, BPR Syariah has a business model with a short

turnover time. When determining whether to provide financing for a product, BPR Syariah evaluates its market share, saturation level, and competitiveness.

Sharia BPR Companies The following are some of the operational tasks that Sharia BPR companies carry out: obtaining funds from the public in savings accounts, time deposits, or other similar types of of savings; financing and arranging for the placement of funds according to sharia principles in compliance with Bank Indonesia's regulations; arranging for the deposit of money using Bank Indonesia Certificates as collateral; other banks for savings; or time deposits.

Article 27 SIK DIR. BI 32/36/1999 highlights the Syariah BPR Law in the operational activities of Syariah BPR. obtaining deposits of money from the general public in the following forms: savings governed by the wadiah and mudharabah principles. Time deposits according to the mudharabah system Other forms that apply mudharabah or wadiah principles. distributing money via: Transactions involving the sale and purchase of goods using the murabahah, istishna, salam, ijarah, and other sale and purchase principles. financing through profit sharing based on musyarakah, mudharabah, and other profit sharing concepts. Additional funding according to the rahn and qardh principles. carrying out additional regular BPR Syariah activities to the degree that the National Sharia Council has authorized.

1. **Relationship between Firm Size and ROA**
   Company size, according to Sartono (2010) in (Dewi et al., 2015), is a reflection of the business's size as indicated by the total value of the business's assets, including the number of branch offices. The business has greater assets and resources to turn a profit as it grows in size. This is due to the generally more stable conditions found in larger companies.
2. **Relationship between FDR and ROA**
   Obtaining Funds for Deposits A ratio describes the funding that banks give their foreign currency or rupiah financing customers. (Septiarini & Widyaningrum, 2015). The bank's profit (ROA) increases as the FDR value does. Based on the supposition that credit distribution is efficient, bad credit is relatively rare (Wibisono & Wahyuni, 2017).
3. **Relationship between BOPO and ROA**
   The ratio of operating costs to operating income shows how bank management is able to keep costs under control (Widyati, 2016). Any increase in operating expenses will lower profit before taxes and, eventually, profit (ROA); thus, the more efficient the operating costs, the lower the BOPO ratio. incurred by the bank.
4. **Hypothesis**
   H1: At BPRS in Indonesia, Firm Size Affects Operating Cost of Operating Income
   H2: At BPRS in Indonesia, Financing to Deposit Ratio has an impact on Operating Cost of Operating Income.
   H3: At BPRS in Indonesia, the Operating Cost of Operating Income is influenced by Firm Size and Financing to Deposit Ratio.

H4: Firm Size affects Return On Asset at BPRS in Indonesia
H5: Financing to Deposit Ratio affects Return On Asset at BPRS in Indonesia
Hypothesis 6: The impact of Operating Cost on Operating Income on Return on Asset at BPRS in Indonesia
H7: At BPRS in Indonesia, Return on Asset is impacted by Firm Size, Financing to Deposit Ratio, and Operating Cost of Operating Income.
H8: Firm Size affects Return On Asset through Operating Expenses Operating Income as an intervening variable on BPRS in Indonesia.
H9: At BPRS in Indonesia, the financing to deposit ratio has an impact on return on assets through operating costs of operating income as an intervening variable.

METHODOLOGY

1. Data Type and Data Source

Here, The ROA is the dependent variable, and the other variables are Firm Size (Company Size) and FDR, with BOPO acting as an intervening variable. The research will employ quantitative research, that is, data in the form of numbers, to demonstrate whether or not there is an influence between the dependent and independent variables. Time series panel data, or time series with all variables being financial from 2018 to 2022, is the type of data used in this study.

This study uses secondary data in the form of financial ratios at the Financial Services Authority's official website (www.ojk.go.id).Sharia People's Economic Bank (BPRS) derived from Sharia Banking Statistics data for the years 2018 to 2022. Additional sources of support for this research include relevant journals, multiple books, and other relevant materials.

2. Population

All BPRS in Indonesia were the study's population during the January 2018–December 2022 study period. Purposive sampling was used to select the research population, and a sample was considered suitable if it satisfied certain requirements:

1. Sharia People's Economic Bank (BPRS) during the research period (January 2018 to December 2022).
2. Available financial statement data during the research period (period January 2018 to December 2022).
3. The bank under study has been operating during the research period (January 2020 to December 2022).

3. Data Collection Technique

This study's methodology collects data through document examination from Islamic banking statistical reports, utilizing the documentation method. The study's secondary data originated from the websites www.ojk.go.id and included information on firm size, ROA, BOPO, and FDR. The necessary data consist of:

1. Data Report ROA Sharia People's Economic Bank (BPRS) 2018-2022.
2. Data on the BOPO Report of the Sharia People's Economic Bank (BPRS) in 2018-2022.

3. Data Report FDR Sharia People's Economic Bank (BPRS) 2018-2022.
4. Data Report Firm Size Sharia People's Economic Bank (BPRS) in 2018-2022.

Data collection procedures are also through literature studies, namely reviewing books, journals and others related to research in order to acquire a theoretical foundation and analysis methods for problem-solving and gathering secondary data taken from Sharia People's Economic Bank (BPRS) data for 2018-2022 in the Sharia Banking Statistics table for the period January 2020 to December 2022.

4. Data Analysis Techniques

This kind of research employs a quantitative approach. The data methods analysis employed are (1) Path Analysis (2) Classical Assumption Test, (3) Hypothesis Test (4) Sobel Test

a) Path Analysis

Path analysis is a technique for investigating the causal relationship that emerges in multiple regression when the independent variable affects the dependent variable both directly and indirectly. (Dharma et al., 2020).

b) Classical Assumption Test

1) Normality Test

(Hamid et al., 2020). Although in general, researchers assume that for each variable consisting of 30 data, it is considered normal. However, this assumption still needs to be proven more accurately by testing using analytical tools. Researchers use the Jarque Bera test to determine whether or not the There is a normal distribution for residuals.

2) Multicollinearity

Test The multicollinearity test aims to determine whether the regression model found a perfect or strong correlation between independent variables (Hamid et al., 2020). With the help of tolerance values and the Variance Inflation Factor (VIF), one can ascertain whether multicollinearity exists in a linear regression model or not.

3) Heteroscedasticity Test

Determining the The objective of the heteroscedasticity test is to determine the inequality of variance from the residuals of one observation to another (Sugiyanto et al., 2022). One way to tell if a regression model is heteroscedastic is to look for variable variants that aren't constant symptoms (Hamid et al., 2020). The method that can be used to identify heteroscedasticity is by using the Breusch Pagan Godfrey test.

4) Autocorrelation Test

In a linear regression model, the autocorrelation test seeks to establish a relationship between confounding errors (residuals) in period t and errors in period t-1 (Hamid et al., 2020). One method to check for autocorrelation is the Durbin Watson test.

c) Hypothesis Test

1) Test t

This test establishes whether In the regression model, the independent variable has a statistically significant partial effect on the dependent variable (Savitri et al., 2021). Suyono (2015) and Nuryadi et al. (2017) have identified the following criteria for decision-making:

- If t count> t table or sig. < alpha, then Ha is accepted
- If t count < t table or sig. > alpha, then H0 is accepted

The formula for calculating a t table with n - k free degrees, where k is the total number of variables and n is the number of samples, is as as a result (Suyono, 2015). In the event that the computed t value is negative, the t table value and the absolute value are compared after the negative sign is removed (Suyono, 2015). There is always a multiple reading of the computed t value (the value is always positive).

2) F test

Using this test, one can ascertain whether The combined impact of the independent variables on the dependent variable within the regression model are statistically significant (Savitri et al., 2021). Suyono (2015) and Nuryadi et al. (2017) have identified the following criteria for decision-making:

- If F count > F table or sig. < alpha, then Ha is accepted
- If F count < F table or sig. > alpha, then H0 is accepted

3) Test Coefficient of Determination (R2)

In essence, The Coefficient of Determination (R2) measures the model's effectiveness can account for changes in the dependent variable (Savitri et al., 2021).

4) Sobel Test

The Sobel Test, a method created by Sobel in 1982, can be used to test the mediation hypothesis. Using an intervening variable, the Sobel test measures the degree to which indirect effects of the independent variable on the dependent variable is present (Murti & Yuliansyah, 2019). Here are the criteria used in making decisions (Napitupulu et al., 2021).

RESEARCH RESULTS

1. Descriptive Statistical Test Results

The study's variables comprise the following: Firm Size (company size), Financing to Deposit Ratio (FDR), Operating Expenses Operating Income (BOPO), and Return On Asset (ROA). The results of the descriptive statistical test are as follows:

Tabel 1. Descriptive Statistical Test Results

	FS	FDR	BOPO	ROA
Mean	16.47276	112.4200	86.80467	2.154833
Maximum	16.81906	122.3300	92.25000	2.730000
Minimum	16.21017	103.3800	81.74000	1.630000
Std. Dev.	0.164205	4.523055	1.870888	0.338699
Observations	60	60	60	60

There are sixty samples total in all the variables' observations. The Firm Size (FS) The variable's mean is 16.47276, and its maximum is 16.81906, a minimum of 16.21017, and a standard deviation of 0.164205. Financing to Deposit Ratio (FDR) variable values range from 112.4200 at mean, 122.3300 at maximum, 103.3800 at minimum, and 4.523055 at standard deviation. The Operating Income Operating Cost (BOPO) variable has the following values: 86.80467 is its mean, 92.25000 is its maximum, 81.74000 is its minimum, and 1.870888 is its standard deviation. The Return On Asset (ROA) variable has the following values: 1.630000 is the lowest value, 2.730000 is the maximum value, and 2.154833 is the standard deviation value.

2. Classical Assumption Test Results

Normality Test Results

(amid et al., 2020). Although in general, researchers assume that for each variable consisting of 30 data, it is considered normal. However, this assumption still needs to be proven more accurately by testing using analytical tools. Researchers use the Jarque Bera test to determine whether or not the residuals have a normal distribution.

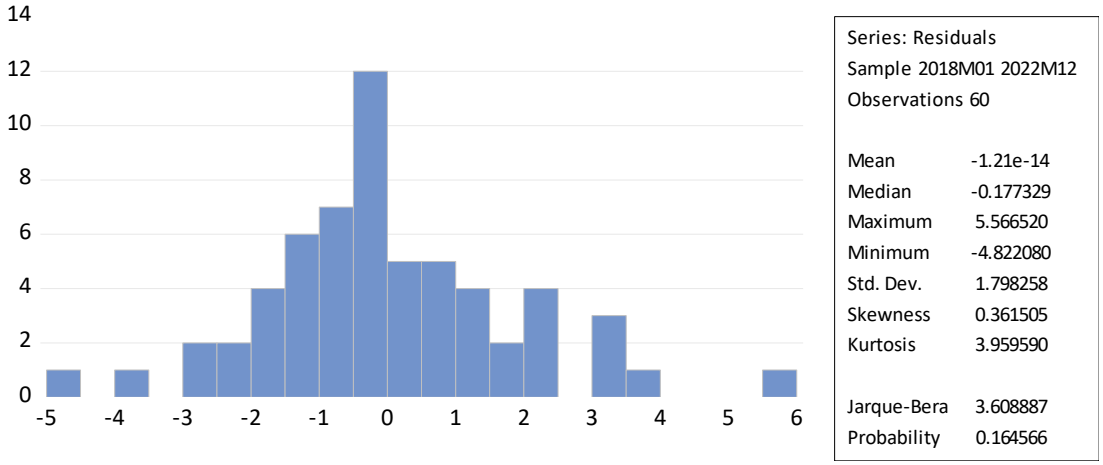

Figure 1. Normality Test Results Equation I

The probability Jarque Bera value in equation I is 0.164566>0.05, as can be seen from the above table, indicating that the residuals are normally distributed or pass the normality test (Hamid et al., 2020).

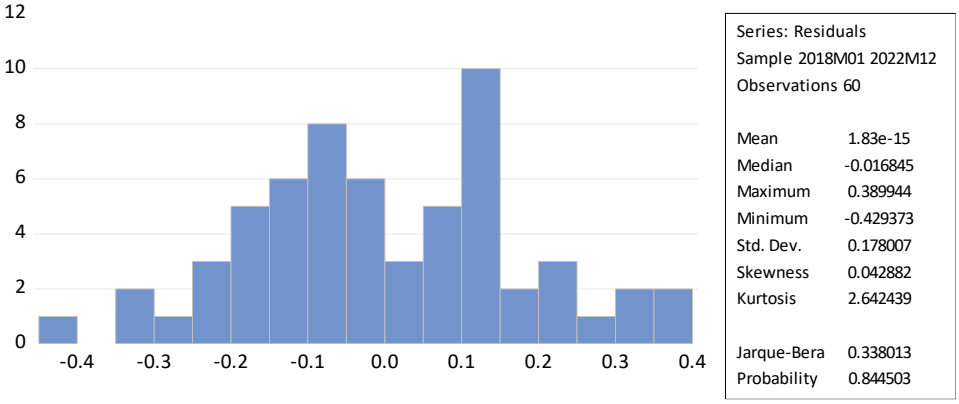

Figure 2. Normality Test Results Equation II

Given that the Probability Jarque Bera value in equation II is 0.844503>0.05 as shown in the above table, it can be inferred that the residuals are normally distributed or pass the normality test. (Hamid et al., 2020).

Hasil Uji Multikolinearitas

Testing whether the regression model discovered a strong or flawless correlation between independent variables is the goal of the multicollinearity test (Hamid et al., 2020). Using the Variance Inflation Factor (VIF) and Tolerance values, one can ascertain whether multicollinearity exists in a linear regression model or not.

Table 2. Multicollinearity Test Results Equation I

Variance Inflation Factors
Date: 10/04/23 Time: 19:15

Sample: 2018M01 2022M12

Included observations: 60

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	1274.197	22840.55	NA
FS	3.428909	16680.19	1.629663
FDR	0.004519	1025.442	1.629663

Observing the above table, it is possible to conclude that there are no signs of multicollinearity because the Firm Size (FS) variable and the Financing to Deposit Ratio (FDR) variable both have VIF values of 1,629663 < 10 or pass the multicollinearity test (Hamid et al., 2020).

Table 3. Multicollinearity Test Results Equation II

Variance Inflation Factors
Date: 10/04/23 Time: 19:19
Sample: 2018M01 2022M12
Included observations: 60

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	13.31906	23937.99	NA
FS	0.034927	17035.37	1.664364
FDR	4.56E-05	1036.310	1.646935
BOPO	0.000175	2370.716	1.082409

It is clear from the above table that there are no signs of multicollinearity because the Firm Size (FS) variable has a VIF value of 1.664364 < 10, the Financing to Deposit Ratio (FDR) variable has a VIF value of 1.646935 < 10, and the Operating Cost of Operating Income (BOPO) variable has a VIF value of 1.082409 < 10 or pass the multicollinearity test (Hamid et al., 2020).

Heteroscedasticity Test Results

Finding the inequality of variance from the residuals of one observation to another is the goal of the heteroscedasticity test (Sugiyanto et al., 2022). The presence of differentiable variable variants in the regression model (constant) is an indication of heteroscedasticity symptoms (Hamid et al., 2020). The method that can be used to identify heteroscedasticity is by using the Breusch Pagan Godfrey test.

Table 4. Heteroscedasticity Test Results Equation I

Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

F-statistic	0.684520	Prob. F(2,57)	0.5084
Obs*R-squared	1.407293	Prob. Chi-Square(2)	0.4948
Scaled explained SS	1.879461	Prob. Chi-Square(2)	0.3907

Since equation I's Probability F Statistic value is 0.5084>0.05 as shown in the above table, it is clear that there is no heteroscedasticity problem or passes the heteroscedasticity test (Sugiyanto et al., 2022).

Tabel 5. Hasil Uji Heteroskedastisitas Persamaan II

Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

F-statistic	2.289815	Prob. F(3,56)	0.0882
Obs*R-squared	6.555914	Prob. Chi-Square(3)	0.0875
Scaled explained SS	4.689928	Prob. Chi-Square(3)	0.1960

It is evident from the table above that the Probability F Statistic value in equation II is 0.0882>0.05, indicating that there is no heteroscedasticity problem or passes the heteroscedasticity test. (Sugiyanto et al., 2022).

Autocorrelation Test Results

The autocorrelation test looks for a relationship between confounding errors (residuals) in period t and errors in period t-1 in a linear regression model. (Hamid and others, 2020). The Durbin Watson test is one way to determine whether there is autocorrelation.

Table 6. Autocorrelation Test Results Equation I

R-squared	0.076135	Mean dependent var	86.80467
Adjusted R-squared	0.043718	S.D. dependent var	1.870888
S.E. of regression	1.829535	Akaike info criterion	4.094707
Sum squared resid	190.7903	Schwarz criterion	4.199424
Log likelihood	-119.8412	Hannan-Quinn criter.	4.135668
F-statistic	2.348656	Durbin-Watson stat	0.978386
Prob(F-statistic)	0.104676		

It is clear from the above table that the Durbin Watson value for 0.978386 in equation I is between -2 and +2 (-2 < 0.978386 < +2), indicating that the regression

equation model either passes the autocorrelation test or does not exhibit autocorrelation (Savitri et al., 2021).

Table 7. Autocorrelation Test Results Equation II

R-squared	0.723786	Mean dependent var	2.154833
Adjusted R-squared	0.708989	S.D. dependent var	0.338699
S.E. of regression	0.182713	Akaike info criterion	-0.497464
Sum squared resid	1.869498	Schwarz criterion	-0.357841
Log likelihood	18.92393	Hannan-Quinn criter.	-0.442850
F-statistic	48.91381	Durbin-Watson stat	0.909321
Prob(F-statistic)	0.000000		

It is clear from the table above that the Durbin Watson value in equation I of 0.909321 falls between -2 and +2 (-2 < 0.909321 < +2). This indicates that the regression equation model either passes the autocorrelation test or does not exhibit autocorrelation. In 2021, Savitri et al.

Path Analysis (Analisis Jalur)

If the independent variable influences the dependent variable both directly and indirectly, path analysis is a method for examining the causal relationship that arises in multiple regression (Dharma et al., 2020).

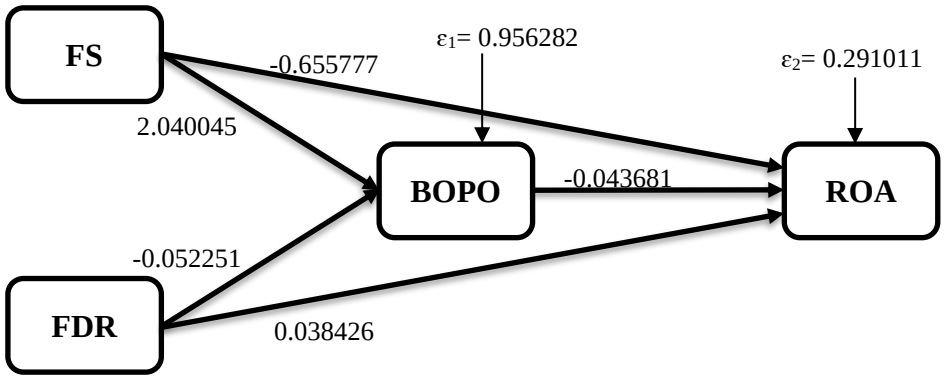

Figure 3. Path Diagram

$$BOPO = 59.07354 + 2.040045*FS - 0.052251*FDR + 0.956282\ \varepsilon_1 \ldots (I)$$
$$ROA = 12.42920 - 0.655777*FS + 0.038426*FDR - 0.043681*BOPO + 0.291011\ \varepsilon_2 \ldots (II)$$

Table 8. Path Coefficient

Jalur	Pengaruh Langsung	Pengaruh Tidak Langsung
FS à BOPO	2,040045	-
FDR à BOPO	-0,052251	-
FS à ROA	-0,655777	-
FDR à ROA	0,038426	-
BOPO à ROA	-0,043681	-
FS à BOPO → ROA	-	2,040045 x -0,043681 = -0,089111
FDR à BOPO → ROA	-	-0,052251 x -0,043681 = 0,002282

The explanation is as follows:

1. The Firm Size (FS) variable has a direct impact of 2.040045 on Operating Expenses on Operating Income (BOPO).
2. The variable Financing to Deposit Ratio (FDR) has a direct impact of -0.052251 on Operating Expenses on Operating Income (BOPO).
3. The Firm Size (FS) variable has a direct impact of -0.655777 on Return On Asset (ROA)..
4. The Financing to Deposit Ratio (FDR) variable has a direct impact of 0.038426 on Return on Asset (ROA)..
5. The Operating Cost of Operating Income (BOPO) variable has a -0.043681 direct impact on Return on Asset (ROA).
6. Through Operating Expenses on Operating Income (BOPO), the Firm Size (FS) variable has an indirect impact on Return On Asset (ROA) of -0.089111..
7. Through Operating Costs Operating Income (BOPO), the variable Financing to Deposit Ratio (FDR) has an indirect impact of 0.002282 on Return On Asset (ROA).

Hypothesis Test Results

1. Results of t test

This test evaluates whether the independent variable in the regression model has a statistically significant partial impact on the dependent variable (Savitri et al., 2021: 7). The decision-making criteria are as follows(Suyono, 2015: 71) (Nuryadi et al., 2017: 76):

If t count> t table or sig. < alpha, then Ha is accepted

If t count < t table or sig. > alpha, then H0 is accepted

Suyono (2015: 72) states that the formula uses n - k free degrees to compute the t table, where n is the number of samples and k is the total number of variables. When the calculated t value is positive and reads in multiples, it is always a positive value; if it is negative, the absolute value is obtained by removing the negative sign, after which it is compared with the t table value (Suyono, 2015: 71).

Table 9. t Test Results Equation I

Dependent Variable: BOPO
Method: Least Squares
Date: 10/04/23 Time: 19:18
Sample: 2018M01 2022M12
Included observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	59.07354	35.69590	1.654911	0.1034
FS	2.040045	1.851731	1.101696	0.2752
FDR	-0.052251	0.067225	-0.777251	0.4402

The following is a partial list of how the independent variables affect the dependent variable:

1. When 1.101696 is less than 2.002 on the t table or 0.2752 is greater than 0.05 on the Sig. value, the Firm Size (FS) variable count is rejected, indicating that Firm Size has no bearing on Operating Costs of Operating Income at BPRS in Indonesia.
2. The t value of the Financing to Deposit Ratio (FDR) variable count is 0.777251 < the t table value of 2.002 or the Sig. value of 0.4402> 0.05, indicating the rejection of H2, which indicates that the Financing to Deposit Ratio has no bearing on Operating Expenses Operating Income at BPRS in Indonesia.

Table 10. Equation II t test results

Dependent Variable: ROA
Method: Least Squares
Date: 10/04/23 Time: 19:19
Sample: 2018M01 2022M12
Included observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	12.42920	3.649528	3.405700	0.0012
FS	-0.655777	0.186888	-3.508934	0.0009
FDR	0.038426	0.006749	5.693410	0.0000
BOPO	-0.043681	0.013228	-3.302192	0.0017

The following is a partial list of how the independent variables affect the dependent variable:

1. Firm Size affects Return On Asset at BPRS in Indonesia, according to H4 when the t value of the Firm Size (FS) variable count of 3.508934> t table value of 2.003 or Sig. value of 0.0009 <0.05..
2. If H5 is accepted, it indicates that the Financing to Deposit Ratio influences Return On Asset at BPRS in Indonesia. The t value of the Financing to Deposit Ratio (FDR) variable count is 5.693410> the t table value of 2.003 or the Sig. value of 0.0000 <0.05..
3. The t value of the Operating Cost of Operating Income (BOPO) variable is 3.302192> H6 is accepted when the t table value is 2.003 or the significance value is 0.0017 <0.05, indicating that the operating cost of operating income affects return on asset at BPRS in Indonesia..

F Test Results

Using this test, one can ascertain whether the independent variables' combined effects on the dependent variable in the regression model are statistically significant (Savitri et al., 2021: 7). Adapun kriteria pengambilan keputusannya sebagai berikut The decision-making criteria are as follows (Suyono, 2015: 50) (Nuryadi et al., 2017: 76):

If F count > F table or sig. < alpha, then Ha is accepted
If F count < F table or sig. > alpha, then H0 is accepted

According to Suyono (2015: 50), Using k-1 as the numerator free degree and n-k as the denominator free degree, it is possible to find the F table. where n is the number of samples and k is the sum of all variables.

Table 11. F Test Results Equation I

R-squared	0.076135	Mean dependent var	86.80467
Adjusted R-squared	0.043718	S.D. dependent var	1.870888
S.E. of regression	1.829535	Akaike info criterion	4.094707
Sum squared resid	190.7903	Schwarz criterion	4.199424
Log likelihood	-119.8412	Hannan-Quinn criter.	4.135668
F-statistic	2.348656	Durbin-Watson stat	0.978386
Prob(F-statistic)	0.104676		

The table above indicates that when the F value is 2.348656 < F table 3.158 and the Prob value is 0.104676 > 0.05, H3 is rejected. This indicates that the Financing to Deposit Ratio and Firm Size have an impact on Operating Expenses Operating Income at BPRS in Indonesia.

Table 12. F Test Results Equation II

R-squared	0.723786	Mean dependent var	2.154833
Adjusted R-squared	0.708989	S.D. dependent var	0.338699
S.E. of regression	0.182713	Akaike info criterion	-0.497464
Sum squared resid	1.869498	Schwarz criterion	-0.357841
Log likelihood	18.92393	Hannan-Quinn criter.	-0.442850
F-statistic	48.91381	Durbin-Watson stat	0.909321
Prob(F-statistic)	0.000000		

The above table shows that when the value of F value is 48.91381> F table 2.769 and the probability value is 0.000000 <0.05, H7 is accepted. This indicates that Return On Asset at BPRS in Indonesia is influenced by Firm Size, Financing to Deposit Ratio, and Operating Cost of Operating Income.

Test Results Coefficient of Determination (R^2)

In essence, the Coefficient of Determination (R2) quantifies the extent to which the model can account for variations in the dependent variable (Savitri et al., 2021: 7).

Tabel 13. Test Results of the Coefficient of Determination (R^2) Equation I

R-squared	0.076135	Mean dependent var	86.80467
Adjusted R-squared	0.043718	S.D. dependent var	1.870888
S.E. of regression	1.829535	Akaike info criterion	4.094707
Sum squared resid	190.7903	Schwarz criterion	4.199424
Log likelihood	-119.8412	Hannan-Quinn criter.	4.135668
F-statistic	2.348656	Durbin-Watson stat	0.978386
Prob(F-statistic)	0.104676		

The value of the Adjusted R Square is 4.3718%, or 0.043718. The operating cost of operating income variable at BPRS in Indonesia can be explained by the independent variables of firm size and financing to deposit ratio by 4.3718%, according to the coefficient of determination. Other variables not included in this research model account for the remaining 95.6282% (100 - adjusted R Square value) (Sihabudin et al., 2021: 65) (Sugiyanto et al., 2022: 33-34).

Table 14. Test Results of the Coefficient of Determination (R^2) Equation II

R-squared	0.723786	Mean dependent var	2.154833
Adjusted R-squared	0.708989	S.D. dependent var	0.338699
S.E. of regression	0.182713	Akaike info criterion	-0.497464
Sum squared resid	1.869498	Schwarz criterion	-0.357841
Log likelihood	18.92393	Hannan-Quinn criter.	-0.442850
F-statistic	48.91381	Durbin-Watson stat	0.909321
Prob(F-statistic)	0.000000		

The value of the Adjusted R Square is 70.8989%, or 0.708989. According to the coefficient of determination, the independent variables, which include Firm Size, Financing to Deposit Ratio, and Operating Cost of Operating Income, can account for 70.8989% of the variation in Return On Asset at BPRS in Indonesia. Other variables not included in the research model account for the remaining 29.1011% (100 - adjusted R Square value) of the variation (Sihabudin et al., 2021: 65) (Sugiyanto et al., 2022: 33-34).

Sobel Test Results

The Sobel Test, a method created by Sobel in 1982, can be used to test the mediation hypothesis. Using an intervening variable, the Sobel test measures the degree to which the independent variable's indirect impact on the dependent variable is present (Murti & Yuliansyah, 2019). The decision-making criteria are as follows (Napitupulu et al., 2021):

- If Z count > 1.958, then Ha is accepted
- If Z count < 1.958, then H0 is accepted
- Jika Z hitung > 1,958, maka Ha diterima
- Jika Z hitung < 1,958, maka H0 diterima

1. **The Effect of *Firm Size* on *Return On Asset* through Operating Expenses Operating Income**

$$\mathbf{Z}= \frac{ab}{\sqrt{(b^2SEa^2)+(a^2SEb^2)}}$$

$$\mathbf{Z}= \frac{2{,}040045\ x\ -0{,}043681}{\sqrt{-0{,}043681^2 x\ 1{,}851731^2)+(2{,}040045^2\ x\ 0{,}013228^2)}}$$

$$\mathbf{Z}= \frac{-0{,}089111205645}{\sqrt{0{,}00727068676047254}}$$

$$\mathbf{Z}= \frac{-0{,}089111205645}{0{,}0852683221394237}$$

$$\mathbf{Z}= \mathbf{-1{,}04506812622972}$$

The Z count of -1.045 < 1.958, with a significant level of 5%, was obtained from the Sobel test results. This indicates that H8 is rejected, indicating that Firm Size does not affect Return On Asset through Operating Cost of Operating Income as an intervening variable in BPRS in Indonesia.

2. The Effect of Firm Size on Return On Asset through Operating Expenses Operating Income

$$Z = \frac{ab}{\sqrt{(b^2SEa^2)+(a^2SEb^2)}}$$

$$Z = \frac{-0{,}052251\ x\ -0{,}043681}{\sqrt{-0{,}043681^2 x\ 0{,}067225^2)+(-0{,}052251^2\ x\ 0{,}013228^2)}}$$

$$Z = \frac{0{,}002282375931}{\sqrt{0{,}0000091004938665821}}$$

$$Z = \frac{0{,}002282375931}{0{,}00301670248227798}$$

$$Z = 0{,}756579723856802$$

Given that the Z value of the Sobel test was 0.757 < 1.958 at a significant level of 5%, H9 is rejected, indicating that the Financing to Deposit Ratio has no bearing on Return On Investment. Asset through Operating Costs of Operating Income as an intervening variable at BPRS in Indonesia.

DISCUSSION

The Effect of *Firm Size* on Operating Expenses on Operating Income

The findings demonstrated that Firm Size has no bearing on Operating Costs of Operating Income at BPRS in Indonesia. This indicates that the large or small size of BPRS does not affect the Operating Cost of Operating Income at BPRS in Indonesia. Firm size is proxied by LN Total Assets, therefore the small size of BPRS indicates that it has small total assets. Vice versa, a large BPRS size indicates that it has large total assets. In general, the size of a BPRS will positively affect the operating income of a bank, if a BPRS has large total assets, the funds channeled are also large so that it will increase operating income. Vice versa, if a BPRS has small total assets then the funds channeled are also small so that it will reduce operating income. On the other hand, the size of a BPRS, will negatively affect the operating income of a bank, if a BPRS has large total assets then the operating costs or expenses are also large so that it will reduce operating income. Vice versa, if a BPRS has small total assets then the cost or operating expenses are also small so that it will increase operating income.

So that the size of BPRS does not affect the Operating Cost of Operating Income at BPRS in Indonesia. This is because the formula for calculating the BOPO ratio is operating costs or expenses divided by operating income. So in the calculation of the BOPO ratio will be the same between the size of BPRS is large or small.

The Effect of Financing to Deposit Ratio on Operating Costs of Operating Income

The findings indicated the Financing to Deposit Ratio had no bearing on the Operating Cost of Operating Income at BPRS in Indonesia. This indicates that the size or size of the FDR ratio does not affect the Operating Cost of Operating Income at BPRS in Indonesia.

In general, the size of the FDR ratio will positively affect the operating income of a bank, if a BPRS has a large FDR ratio then the funds channeled are also large so that it will increase operating income. Vice versa, if a BPRS has a small FDR ratio then the funds channeled are also small so that it will reduce operating income. On the other hand, the size of the FDR ratio will negatively affect the operating income of a bank, if a BPRS has a large FDR ratio then the operating costs or expenses are also large so that it will reduce operating income. Vice versa, if a BPRS has a small FDR ratio then the cost or operating expenses are also small so that it will increase operating income.

So that the large or small FDR ratio does not affect the Operating Cost of Operating Income at BPRS in Indonesia. This is because the formula for calculating the BOPO ratio is operating costs or expenses divided by operating income. So that the calculation of the BOPO ratio will be the same between large and small FDR ratios.

The Effect of *Firm Size* and *Financing to Deposit Ratio* on Operating Expenses on Operating Income

The findings demonstrated that the operating costs of operating income at BPRS in Indonesia were unaffected by firm size or financing to deposit ratio. This indicates that the large or small size of BPRS and the large or small FDR ratio do not affect the Operating Cost of Operating Income at BPRS in Indonesia.

In general, the size of a BPRS and the size of the FDR ratio will positively affect the operating income of a bank, if a BPRS has large total assets then the FDR ratio will also be large, so that the funds channeled are also large so that it will increase operating income. Vice versa, if a BPRS has small total assets then the FDR ratio will also be small, so that the funds channeled are also small so that it will reduce operating income. On the other hand, the size of a BPRS and the size of the FDR ratio will negatively affect the operating income of a bank, if a BPRS has large total assets then the FDR ratio will also be large, so that operating costs or expenses are also large so that it will reduce operating income. Vice versa, if a BPRS has small total assets then the FDR ratio will also be small, so that costs or operating expenses are also small so that it will increase operating income.

So that the size of BPRS and the size of the FDR ratio do not affect the Operating Cost of Operating Income at BPRS in Indonesia. This is because the formula in calculating the BOPO ratio is the cost or operating expenses divided by operating income. So that in the calculation of the BOPO ratio will be the same between large and small BPRS size and large and small FDR ratios.

The Effect of Firm Size on Return On Asset

The findings demonstrated that Firm Size has a detrimental impact on Return On Asset at BPRS in Indonesia. This indicates that if the size of a BPRS is large, it will reduce the Return On Asset ratio of BPRS in Indonesia. vice versa, if the size of a BPRS is small, it will increase the Return On Asset ratio of BPRS in Indonesia. This is because the larger the size of a BPRS, the greater the operational costs that will be incurred, so that it will make the Return On Asset ratio decrease.

The results of this study are consistent with that of Annisa & Widya Sari's (2023) research, which finds that Total Assets have a significant negative impact effect on Profitability. Because larger banks may not necessarily work more efficiently than banks with smaller sizes. The potential for a business to make money increases with the total amount of assets it possesses, provided that the business can also effectively manage its assets. Assets or assets are future services in the form of money or future services that can be converted into money (except services arising from contracts that have not been carried out by the two parties in proportion) in which there are beneficial interests guaranteed according to law or justice A company's expenses will rise and potential losses could rise if the overall condition of the assets is poor.

The findings of this investigation are at odds with those of Husin & Purnamasari's (2021) study. which claims that return on assets is positively impacted by firm size (company size). The potential for profit generation within the company will rise with its size, and vice versa. This is a result of the bank's substantial asset holdings tend to show a high level of profitability, besides that the bank will also easily benefit from low financing and current credit which causes the resulting return to be large, in other words, a large firm size will increase profitability.

CThe findings of this investigation run counter to those of Syachreza & Mais (2020), who found no relationship between bank size and profitability. This demonstrates that fixed, lower, lower, or larger bank sizes won't boost profitability because Islamic commercial banks' total asset growth is still below the standard expected by the Financial Services Authority, which is only 5.73%. In the statement above, which causes bank size to have not a major impact on ROA due to Islamic commercial banks at this time do not need asset quality in increasing profitability but need income from the financing product sector. Because bank size is not a benchmark in this study to increase profitability, but the role of Government Regulators is very significant in improving the Islamic commercial banks' financial standing.

The Effect of Financing to Deposit Ratio terhadap Return On Asset

The findings demonstrated that at BPRS in Indonesia, the Financing to Deposit Ratio positively impacted Return on Asset. This indicates that the greater the FDR ratio, the Return On Asset ratio will increase. Vice versa, the smaller the FDR ratio, the Return On Asset ratio will decrease. This occurs because a large distribution of funds to the public will yield a high return and affect the bank's profit margin; these outcomes are consistent with the stewardship theory. The way in which banking institutions distribute their financing makes sense in terms

of stewardship theory. Islamic banks, acting as principals, entrust their customers, acting as stewards, with managing funds that are optimally able to accommodate all common interests between principals and stewards. These stewards are based on servants who possess moldable behaviors, making them readily invited to collaborate in organizations. Additionally, they exhibit collective or group behavior that is more useful than individual behavior and are always eager to serve (Riyadi & Yulianto, 2014).

The findings of this investigation are consistent with those of Devi's (2021) study, which found a strong positive relationship between FDR and ROA. This demonstrates that the bank's profit (ROA) increases with the FDR. will increase. Of course, on condition that the bank still maintains the principle of prudence and suppresses the incidence of bad credit. With increasing profits (ROA), the bank's financial standing concerned is getting better or increasing.

The findings of this study run counter to those of Annisa & Widya Sari's (2023) research, which found no relationship between profitability and the financing to deposit ratio. This indicates that not all Islamic commercial banks under study have performed their role as a channel for financing effectively. The amount of funding that Islamic banks issue from the proceeds of raising third party funds to support planned investments over a specific period of time is known as the Financing to Deposit Ratio (FDR). The lower the ability of the bank in question, the higher the ratio.

The study's findings are in opposition to those of Pravasanti (2018), whose research indicates that the Finacing to Debt Ratio (FDR), which measures a bank's ability to repay depositor withdrawals by depending on the financing it receives as a source of liquidity, significantly lowers ROA. The income earned increases with the amount of financing. Banks may encounter excess or insufficient liquidity during operational activities. If there is an excess, the bank will profit from it. c In the meantime, the bank needs a way to make up for any shortage of liquidity. Low liquidity is a sign that banks are placing more of their money in securities, other banks, or Bank Indonesia. Sufficient liquidity affects the ability to finance growth. Banks take loan risk into account because it affects the low profitability of Islamic banks. This is why they take this action. In this study, FDR has a significant negative effect on ROA, this can be explained that the increase in the number of loans given is not always in line with the increase in profit before tax, there is even the opposite tendency, namely an increase in the number of loans followed by a decrease in profit before tax because the amount of the loan is more converted in the form of bank assets. So it can be concluded that partially the FDR ratio has a significant

Effect of Operating Costs on Operating Income on *Return on asset*

The findings demonstrated that at BPRS in Indonesia, Operating Costs of Operating Income had a detrimental impact on Return on Asset. According to this, the higher the BOPO ratio, the Return On Asset ratio will decrease. Vice versa, the smaller the BOPO ratio, the Return On Asset ratio will increase.

The study's findings are consistent with those of Syachreza & Mais (2020), who found that BOPO significantly and negatively affects profitability. This

demonstrates that a higher BOPO will result in lower profitability or, conversely, a lower BOPO will result in higher profitability. This is because Islamic banks are required to effectively manage their operational activities by minimizing their costs, which have a significant impact on their level of profits (ROA). Banks that can maximize revenue and run efficiently will have high returns on assets (ROA), so they must choose wisely when it comes to eliminating wasteful spending.

The study's findings run counter to Devi's (2021) research, which found no discernible relationship between ROA and the BOPO ratio. This is as a result of Islamic banks' capital adequacy rate during the observation period was at a good level, so that when operating costs are high, it does not reduce the number of assets.

The Effect of *Firm Size*, *Financing to Deposit Ratio*, and Operating Expenses on Operating Income on *Return on Asset*

The results showed that Firm Size, Return on Asset at BPRS in Indonesia is impacted by financing to deposit ratio and operating cost of operating income. This suggests that the magnitude of the FDR ratio, the magnitude of the BPRS, and the magnitude of the BOPO ratio affect Return On Asset at BPRS in Indonesia. If the size of a BPRS is large, it will decrease the Return On Asset ratio of BPRS in Indonesia. vice versa, if the size of a BPRS is small, it will increase the Return On Asset ratio of BPRS in Indonesia. This is because the larger the size of a BPRS, the greater the operational costs that will be incurred, so that it will make the Return On Asset ratio will decrease. Increased financing disbursement corresponds with a higher FDR ratio, which in turn influences higher profits. Conversely, with a lower FDR ratio comes a smaller disbursed financing amount, which will also have an effect on the decline in profits. Because Islamic banks must manage bank operational activities efficiently by minimizing bank operating costs, which have a significant impact on the level of bank profits (ROA), the higher the BOPO, the lower the profitability, and vice versa. Banks that can maximize revenue and run efficiently will have high returns on assets (ROA), so they must choose wisely when it comes to eliminating wasteful spending.

The Effect of *Firm Size* on *Return On Asset* through Operating Expenses on Operating Income

The findings demonstrated that, when considered as an intervening variable in the BPRS in Indonesia, Firm Size has no bearing on Return on Asset through Operating Cost of Operating Income. This suggests that the impact of Firm Size on Return On Asset at BPRS in Indonesia is insensitive to changes in the BOPO ratio. This is because the formula for calculating the BOPO ratio is operating costs or expenses divided by operating income. The greater the denominator, the greater the divisor will also be, so that the resulting number will also be almost the same. However, while net income is divided by total assets in the calculation of the Return On Asset ratio, the BOPO ratio only considers the company's operational activities, such as income from fund distribution and

costs associated with it. The impact of Firm Size on Return On Asset at BPRS in Indonesia is thus not mediated by the size of the BOPO ratio.

The Effect of Financing to Deposit Ratio on Return On Asset through Operating Costs of Operating Income

As an intervening variable at BPRS in Indonesia, the results demonstrated that the Financing to Deposit Ratio had no effect on Return on Asset through Operating Expenses on Operating Income. This suggests that the impact of the Financing to Deposit Ratio on Return On Asset at BPRS in Indonesia is insensitive to changes in the BOPO ratio. This is because the formula for calculating the BOPO ratio is operating costs or expenses divided by operating income. The greater the denominator, the greater the divisor will also be, so that the resulting number will also be almost the same. However, the Return On Asset ratio calculates net income divided by total assets, whereas the BOPO ratio only accounts for operational activities, such as income from channeling funds and expenses incurred in doing so. The impact of Firm Size on Return On Asset at BPRS in Indonesia is thus not mediated by the size of the BOPO ratio.

CONCLUSIONS AND RECOMMENDATIONS

Based on the research results, it can be suggested to the management of BPRS in Indonesia to:

Improve operational efficiency (BOPO) to increase profitability. This can be done by making operational costs efficient, such as labor costs, administrative costs, and other operational costs. Increase company size (total assets) to increase profitability. This can be done by expanding the business network, increasing the number of products and services, and improving service quality. Maintain an optimal FDR level to increase profitability. This can be done by conducting more careful and selective financing risk analysis.

In addition, this research can be developed by adding other variables that can affect BPRS profitability, such as financing risk, profitability of Islamic commercial banks, and macroeconomic conditions. Provide some conclusions and implementation of the research results.

ADVENCED RESEARCH

Further research can be done by considering the following points: Using data from BPRS in a longer period. Consider other factors that may affect Return on Asset (ROA) in BPRS. Use a variety of research techniques, such as qualitative research.

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