The Influence Of Risk Management On Financial Performance With Firm Size As A Moderating Variable In Islamic Commercial Banks For The Period 2017-2021

Asri Dwi Kristina
Universitas Islam Negeri (UIN) Salatiga
asridwi74@gmail.com

Anton Bawono
Universitas Islam Negeri (UIN) Salatiga
antonbawono@uinsalatiga.ac.id

Abstract

The purpose of this study was to determine the effect of capital adequacy, operational risk, and market risk on financial performance with firm size as a moderating variable in Islamic commercial banks in Indonesia. This study uses a quantitative survey type that uses time-series data of monthly from January 2017 to December 2021 as secondary data. The data obtained are processed using the Eviews 10 application. Analysis methods include descriptive statistical tests, stationarity tests, multiple linear regression tests, classical assumption tests, and Moderated Analysis Regression (MRA). This result proves that 1) CAR has a positive but not significant impact on ROA. 2) BOPO and NOM have a positive significant impact on ROA. 3) Firm size has a negative but not significant ROA. 4) Firm size can not moderate the impact of CAR and NOM on ROA. 5)Firm size can moderate the impact of BOPO on ROA.

Keywords: *ROA, CAR, BOPO, NOM, and Firm size*

Abstrak

Tujuan dari penelitian ini untuk mengetahui pengaruh kecukupan modal, risiko operasional dan risiko pasar terhadap kinerja keuangan dengan ukuran perusahaan sebagai variabel moderasi pada bank umum syariah di Indonesia. Penelitian ini menggunakan jenis penelitian kuantitatif, menggunakan data sekunder berupa data *time series* dalam bentuk bulanan sejak bulan januari 2017 sampai desember 2021. Data yang didapat kemudian diolah menggunakan aplikasi *Eviews* 10. Metode analisis data meliputiuji statistik deskriptif, uji stasioneritas, uji regresi linier berganda, uji asumsi klasik dan uji MRA. Hasil membuktikan bahwa 1) CAR berpengaruh positif tetapi tidak signifikan terhadap ROA. 2) BOPO dan NOM berpengaruh positif

signifikan terhadap ROA. 3) Ukuran perusahaan berpengaruh negatif tetapi tidak signifikan terhadap ROA. 4) Ukuran perusahaan tidak dapat memoderasi pengaruh antara CAR dan NOM terhadap ROA. 5) Ukuran perusahaan memperkuat pengaruh BOPO terhadap ROA.

Kata Kunci: ROA, CAR, BOPO, NOM, dan Ukuran Perusahaan.

1. INTRODUCTION

The global economy is currently experiencing pressure caused by the Covid-19 case which has influence the financial sector, especially banking. To see a good financial performance or not, can be seen from the Return on Assets (ROA) ratio which is listed in the financial statements of the bank. If the Return on Assets (ROA) is high, then the bussiness is getting stronger to survive in conditions of economic competition. A high ROA indicates that the profits are getting bigger. Financial performance is related to signal theory, namely when high financial performance makes the company send good signals to the market using financial information.

Several factors affect financial performance is risk management. Risk management is a necessary solution because it is used to recognize, quantify, observe, and control risk in the banking business. Risk management in this study is proxied by three risks, namely the first capital adequacy / Capital Adequacy Ratio (CAR) which is the percentage of a bank's minimum capital adequacy requirement based on Bank Indonesia (BI) (Thian, 2021). Second, is operational management. According to article 1 of the Financial Services Authority Regulation No. 65/POJK.03/2016 on implementation of Risk Management in Islamic Commercial Banks and Islamic Business Sector Banks, operational risk is a risk caused by meager internal processes, failures in internal processes, human errors, system failures and external events that affecting bank operations. In this study, operational risk is measured by BOPO. Third, risk management is proxied by operational risk. Market risk appear from fluctuations in market prices, as fluctuations in the value of assets that can be traded or contracted.

According to Muharramah & Hakim (2021), the Signaling theory has a relationship to the firm size variable. The size of a large company indicate that it is growth which makes the company provide signals in the form of good information to the company outside, especially investors. Thus making investors give a positive response to the company.

The moderating variable in this study is company size. Research by Indradi & Taswan (2022), states that firm size strengthens the relationship between CAR and financial performance. There is previous research on risk management and company size on financial performance, so researchers try to relate it to the role of company size. Researchers use firm size as a moderating variable in the influence of risk management on financial performance in Islamic Commercial Banks in Indonesia to obtain a more complete answer.

The purpose of this research is to analyze and explain the impact of capital adequacy, operational risk, and market risk on financial performance with firm size as a moderating variable.

2. LITERATURE REVIEW

2.1. *Signaling Theory*

The signaling theory was pioneered by Spence (1973), which explains that the owner of the information will serve a signal that describes the state of the company. According to Wati et al., (2019), the signaling theory is that company management has more information than outsiders who need information.

2.2. Financial Performance

According to Stiawati & Kusuma (2020), describes the financial condition in a certain period attached to the collection or distribution of funds, regular by capital adequacy, liquidity, and bank profitability. Financial performance appraisal is very important to obtain information about the financial position. This research, the financial exhibition uses the Return on Assets (ROA) ratio. ROA is a description of the company's capability to result profits.

2.3. Risk Management

According to Umar (1998), risk management that is classified as good can support the company in minimizing costs incurred as much as possible. Risk management includes various methods for 1) Identify. 2) Measure. 3) Monitor. 4) Controlling Risk (Rivai, 2013). Syafii & Siregar (2020), mentions the importance of implementing risk management in companies: a) Help achieve goals. b) Carrying out activities that can provide high opportunities by taking greater risks through the support of appropriate attitudes and handling. c) Reducing the possibility of fatal errors. d) Awareness to take and manage risks according to the duties and responsibilities of each individual because risks can arise in activities and actions.

Risk management consists of credit risk, market risk, liquidity risk, operational risk, legal risk, reputation risk, and strategic risk. strategic), compliance risk (compliance risk), return risk (yield risk), and investment (investment risk). According to Rivai (2013), risk management is only a tool for making decisions among managers. This research will only focus on operational risk and market risk.

2.4. Operational Risk

According to Karim (2009), operational risk occurs due to inadequate or dysfunctional internal processes, human error, and system failures/external issues affecting banking operations. Operational risk is very important for banks because, if the operational risk fails in the bank's operational processes, it will affect customer transactions which creates large losses for customers, resulting in damage to the bank's reputation Putera (2019).

2.5. Market Risk

Market risk is a risk that lies in the balance sheet and administrative accounts, this risk occurs due to changes in market prices, such as changes in the value of assets that can be traded or contracted. In this study, market risk uses NOM as a tool to measure market risk.

2.6. Capital Adequacy Ratio

CAR reflects the adequacy of capital posses by a bank which functions to accommodate the risk of loss that the bank may face. The CAR ratio is important for a company, especially banks because public trust in banks lies in CAR. After all, CAR has a very large impact on banks which makes people more inclined to save their funds and use the services available at banks so that banks can fulfill sufficient funds to carry out their operational activities.

2.7. Firm Size

According to Indradi & Taswan (2022), firm size is quantify by countting the overall amount of assets owned by the bank, if the assets owned are greater it indicates that the greater the resources owned in carrying out business activities. Total assets reflect the size of wealth owned in carrying out its operations. According to Fatikha & Yudiana (2021), to see the size of a company lies in the have assets by a bank, if the size of the bank is large then the assets owned are large, conversely, if the company is small then the assets owned are also small.

The theoretical framework fr this study can be explained, as follows:
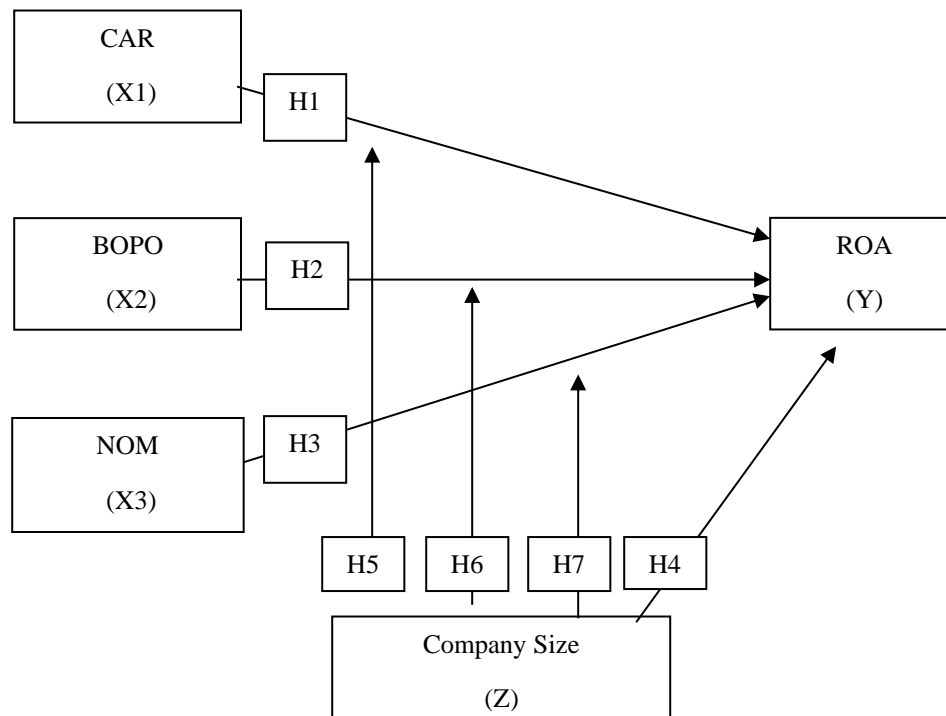
Figure 1
Research Model

3. RESEARCH METHODS

This study used a quantitative oncoming using secondary data.

3.1. Population

The population of this study is Indonesian commercial banks in included in the Sharia Banking Statistics (SPS) published by the Financial Services Authory (OJK) for the period from January 2017 to December 2021 There are total of 15 Islamic Commercial Banks.

3.2. Sample

This study used a sample in the form of purposive sampling, which is a method for selecting samples, the following are some of the criteria in this study: a) Sharia Commercial Banks registered with the Financial Services Authority (OJK) issue Islamic Bank reports which are uploaded on the official website. b) Sharia Commercial Banks that issue monthly financial reports from January 2017 to December 2021. c) Islamic Commercial Banks present information on the variables studied.

3.3. Operational Definition

Table 1
Operational Definition

Variable	Meaning	Formula
Dependent Variable Financial Performance (ROA)	ROA is used to quantify bank management's ability to manage assets and generate profits.	$ROA = \dfrac{\text{Laba Bersih}}{\text{Total Aktiva}} 100\%$ *Source:* (Fernos, 2017)
Independent Variable: Capital Adequacy Ratio (CAR)	CAR is an indicator used to quantify the adequacy of bank capital as a supporting assets in risk generation.	$CAR = \dfrac{\text{Modal Sendiri}}{\text{ATMR}} X100\%$ *Source: (Pramudita, 2019)*
Biaya Operastional terhadap pendapatan operasional (BOPO)	BOPO is used to measure bank management in the manage of operating expenses relative to operating income.	$BOPO = \dfrac{\text{Biaya Ops}}{\text{Pdptn Ops}} x\,100\%$ *Source: (Fernos, 2017)*
Net Operating Margin (NOM)	NOM is due to risk in the form of fluctuation in market price, modification in the worth of assets that may be traded or contracted.	$NOM = \dfrac{\text{net opt income}}{\text{rata2 Akt Prod}} x100\%$ *Source:* (Yusuf & Wahyuni, 2017)
Moderating Variable Firm Size	The size of the company plays a role plays a role in	Log Firm Size *Source*: (Tiffany & Sidiq, 2022)

	determining the size of a company.	

4. RESULTS AND DISCUSSION
4.1. Results
1. Descriptive Statistical Test

Table 2
Descriptive Statisticak Test

	ROA	CAR	BOPO	NOM	Size
Mean	1,419167	20,35483	87,50267	1,535000	332.461.700.000
Median	1,400000	20,40000	86,23500	1,525000	320.810.000.000
Maximum	2,150000	25,71000	97,01000	2,310000	441.789.000.000
Minimum	0,420000	16,14000	81,69000	0,450000	248.819.000.000
Observasi	60	60	60	60	60

2. Stasionerity Test

Tabel 3
Stasionerity Test Level

No.	Variabel	Probabilitas	Explanation
1	Y	0,4435	
2	X1	0,9274	
3	X2	0,3390	
4	X3	0,4134	Not stationary
5	Z	0,9975	
6	X1_Z	0,9366	
7	X2_Z	0,2956	
8	X3_Z	0,4229	

Source: Secondary data processed, 2023

Based on the table above, all variables show no stationary caused by the probability value > alpha (0,05). The researcher conducted a stationary *1st difference* test so that the data could be stationary, the result obtained is seen as follows:

Table 4

Stationarity Test 1st difference

No.	Variable	Probability	Explanation
1	Y	0,0000	
2	X1	0,0000	
3	X2	0,0000	
4	X3	0,0000	Stationary data
5	Z	0,0000	
6	X1_Z	0,0000	
7	X2_Z	0,0000	
8	X3_Z	0,0000	

Source: Secondary data processed, 2023

After performing a stationary test on the *1st difference,* values for all variables show probability < alpha (0,05) and the data are stationary.

3. **Multiple Linear Regression Test**

Table 5
Multiple Linear Regression Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.005812	0.028758	-0.202099	0.8408
D(CAR(-4),2)	0.199128	0.179179	1.111334	0.2725
D(BOPO(-4),2)	0.705084	0.137467	5.129111	0.0000
D(NOM(-4),2)	0.418703	0.072184	5.800504	0.0000
D(UKURAN(-4),2)	-0.106617	0.283925	-0.375510	0.7091
D(CAR*UKURAN(-4),2)	0.059177	0.118569	0.499094	0.6202
D(BOPO*UKURAN(-4),2)	0.214545	0.105591	2.031849	0.0482
D(NOM*UKURAN(-4),2)	-0.151969	0.092396	-1.644745	0.1071
AR(1)	-0.443642	0.169258	-2.621097	0.0120
SIGMASQ	0.043406	0.009326	4.654224	0.0000

R-squared	0.785211	Mean dependent var	-0.001984
Adjusted R-squared	0.741277	S.D. dependent var	0.453763
S.E. of regression	0.230806	Akaike info criterion	0.075155
Sum squared resid	2.343940	Schwarz criterion	0.443486

		Hannan-Quinn	
Log-likelihood	7.970807	criteria.	0.217206
F-statistic	17.87250	Durbin-Watson stat	2.239681
Prob(F-statistic)	0.000000		
Inverted AR Roots	-.44		

Source: Secondary data processed, 2023

Partial Significant Test (T-test)

a. The coefficient of CAR (X1) of 0,199128 and a significant value of 0,2725 > 0,05. This means that the impact of CAR (X1) on ROA (Y) is positive but no significant.

b. The coefficient of BOPO (X2) is 0,705084 and the significant value is 0,0000 < 0,05. It means that the effect of BOPO (X2) on ROA (Y) is positive but significant.

c. The coefficient of NOM (X3) is 0,418703 and the significant value is 0,0000 < 0,05 It means that the effect of BOPO (X2) on ROA (Y) is positive but significant.

d. The coefficient of Firm size (Y) is -0,106617 and the significant value is 0,7091 > 0,05 It means that the effect of BOPO (X2) on ROA (Y) is negative but not significant.

e. The coefficient CAR (X1) moderated by firm size (Z) is 0,059177 and the significant value 0,6202. This means that firm size can not moderate the impact of CAR on ROA.

f. The coefficient BOPO (X2) moderated by firm size (Z) is 0,214545 and the significant value is 0,0482. This means that firm size has a moderate impact on BOPO on ROA.

g. The coefficient NOM (X3) moderated by firm size (Z) is -0,151969 and the significant value 0,1071. This means that firm size can not moderate the impact of NOM on ROA.

Simultanous Significant Test (F test)

The coefficient grade of 17.87250 with a prob (F-Statistic) value of 0.000000. Therefore, because the probability is less than 0,05, it is concluded that CAR (X1), BOPO (X2), and NOM (X3) simultaneous affect ROA (Y) together.

Coefficient of Determination (R^2)

The coefficient of determination (*Adjusted R Square*) is 0,78211. It means that the variable 78,5% of the variation in the independent variable CAR (X1), BOPO (X2), and NOM (X3) is as much as 78,5% and the trace 21,4789% is explained by variation outside this research.

4. Classic Assumption Test
Normality Test
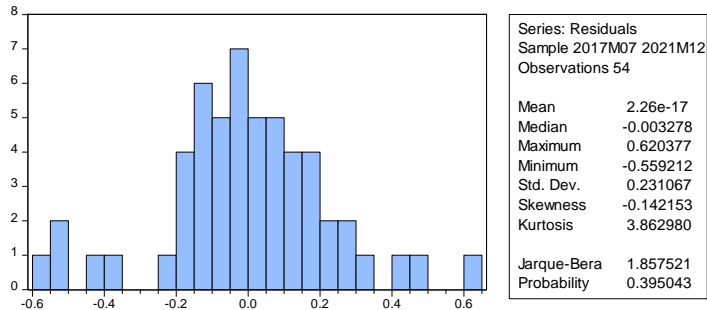
Figure 2
Normality Test

Based on the table above, the *Jarque-Bera* value is 1,857521 with a *probability* value of 0,395043 > alpha (0,05) and the data is normal.

Multicolliniary Test

Table 6
Multicolliniarity test

Auxillary Regression		R² Utama
Persamaan	r²	ROA=f(CAR, BOPO, NOM, Ukuran, CAR_Ukuran, BOPO_Ukuran, NOM_Ukuran)
CAR	0,336620	0,740692
BOPO	0,229402	0,740692
NOM	0,373210	0,740692
Ukuran	0,161194	0,740692
CAR_Ukuran	0,200964	0,740692
BOPO_Ukuran	0,518168	0,740692
NOM_Ukuran	0,54961	0,740692

Source: Secondary data processed, 2023

Based on the table above, the value of r^2 from *Auxillary Regression* is under R^2 from the primary model. Therefore in this study, there is no multicollinearity.

Heteroskedastisitas Test

Table 7

Heteroscedasticity Test

Heteroskedasticity Test: White

F-statistic	1.200646	Prob. F(35,18)	0.3472
Obs*R-squared	37.80610	Prob. Chi-Square(35)	0.3423
Scaled explained SS	39.27158	Prob. Chi-Square(35)	0.2843

Source: Secondary data processed, 2023

All variables have a significant value (Sig) of 0,3423 > 0,05. Therefore, it can be resume that there is no heteroscedasticity problem in the second equation.

Autokorelasi

Table 8
Autocorrelation Test Before Healing

R-squared	0.740692	Mean dependent var	-0.001984
Adjusted R-squared	0.701233	S.D. dependent var	0.453763
S.E. of regression	0.248025	Akaike info criterion	0.185383
Sum squared resid	2.829764	Schwarz criterion	0.480047
		Hannan-Quinn	
Log-likelihood	2.994671	criteria.	0.299023
F-statistic	18.77078	Durbin-Watson stat	2.667808
Prob(F-statistic)	0.000000		

Source: Secondary data processed, 2023

Based on the table above, the Durbin-Watson Stats value of 2.667808 indicates that the data is infected with autocorrelation. Because the Durbin-Watson value is after 4 - dL. To treat the disease, researchers used the Cochrane-Orcut method. The result after healing:

Table 9
Autocorrelation Test After Healing

R-squared	0.785211	Mean dependent var	-0.001984
Adjusted R-squared	0.741277	S.D. dependent var	0.453763
S.E. of regression	0.230806	Akaike info criterion	0.075155
Sum squared resid	2.343940	Schwarz criterion	0.443486
		Hannan-Quinn	
Log-likelihood	7.970807	criteria.	0.217206
F-statistic	17.87250	Durbin-Watson stat	2.239681
Prob(F-statistic)	0.000000		
Inverted AR Roots	-.44		

Source: Secondary data processed, 2023

From the table, the Durbin-Watson shows the value 2,239681 is between the dU (1,7234) and 4-dU (2,2766). Then the data has no autocorrelation.

5. **Moderated Regression Analysis (MRA)**

Table 11

Moderated Regression Analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.005812	0.028758	-0.202099	0.8408
D(CAR(-4),2)	0.199128	0.179179	1.111334	0.2725
D(BOPO(-4),2)	0.705084	0.137467	5.129111	0.0000
D(NOM(-4),2)	0.418703	0.072184	5.800504	0.0000
D(UKURAN(-4),2)	-0.106617	0.283925	-0.375510	0.7091
D(CAR*UKURAN(-4),2)	0.059177	0.118569	0.499094	0.6202
D(BOPO*UKURAN(-4),2)	0.214545	0.105591	2.031849	0.0482
D(NOM*UKURAN(-4),2)	-0.151969	0.092396	-1.644745	0.1071
AR(1)	-0.443642	0.169258	-2.621097	0.0120
SIGMASQ	0.043406	0.009326	4.654224	0.0000

R-squared	0.785211	Mean dependent var	-0.001984
Adjusted R-squared	0.741277	S.D. dependent var	0.453763
S.E. of regression	0.230806	Akaike info criterion	0.075155
Sum squared resid	2.343940	Schwarz criterion	0.443486
Log-likelihood	7.970807	Hannan-Quinn criteria.	0.217206
F-statistic	17.87250	Durbin-Watson stat	2.239681
Prob(F-statistic)	0.000000		

Inverted AR Roots	-.44

Source: Secondary data processed, 2023

Based on the table above, the Moderated Regression Analysis (MRA) is:

ROA = -0,005812 +0,199128 +0,705084 +0,418703 − 0,106617 + 0,059177 + 0,214545 – 0,151969.

4.2. DISCUSSION

1. CAR (X1) has a positive but no effect on ROA (Y), indicated by a coefficient of 0,199128 and a significance of 0,2725 > 0,05. From the statistical result it can be stated that CAR is positive and not significant on ROA because CAR does not affect ROA, namely the capital owned by large banks makes company managers less effective in managing capital, causing financial performance to decline. The result of this study received support from Janrosl & Yuliani (2017), Mardiana (2018), Pramudita (2019), Iqbal & Anwar (2022), and Fidyasari & Arinta (2023)

2. BOPO (X2) has a positive and significant ROA, indicated by a coefficient of 0,705084 and a significant value of 0,0000 < 0,05. From the statistical result it can be stated that BOPO has a positive and significant effect on ROA, because if BOPO increases, operational costs also increase, causing the costs incurred by banks to be effective in increasing profits. In Islamic banking, costs that can increase profitability come from profit sharing. The result of this study received support from Mukaromah (2020), Safei (2020), Sunaryo & Kurnia (2021), Claudia & Yusbardini (2022), and Fadriyaturrohmah & Manda (2022).

3. NOM (X3) has a positive and significant ROA, indicated by a coefficient of 0,418703 and a significant value of 0,0000 < 0,05. From the statistical result it can be stated that NOM has a positive and significant effect on ROA, NOM is used to measure the ability of a bank's management when operating its productive assets to obtain net income from margins and profit sharing. So, it can be concluded that the higher the income earned, will increase the profitability of the company. The result of this study received support from Natalia (2015), Kansil & Tulung (2017), Mosey & Untu (2018), and Caesarani (2022).

4. Firm size (Z) has a negative but not significant effect on ROA, indicated by a coefficient of -0,106617 and a significant value of 0,7091 > 0,05. From the statistical result it can be stated that firm size has a negative but not significant on ROA, because the larger a firm size will require more costs for its operational activities, for example, labor costs, administrative and general costs as well as costs for maintenance of buildings, machinery, vehicles and equipment which result in decreased financial performance (ROA). This study has a negative significant because the high level of debt cause ROA to decrease. The result of this study received support from Zainuri & Sampurno (2022), Sukandana & Triaryati (2018), Tiffany & Sidiq (2022), and Nuraini & Suwaidi (2022).

5. Firm size (Z) cannot moderate the effect of CAR (X1) on ROA (Y), indicated by a coefficient of 0,059177 and a significant value of 0,6202 > 0,05. It means that firm size does not moderate the effect of CAR on ROA and firm size is less informative as a material consideration in making investor decisions in predicting the financial performance of the company when the condition of the capital owned is unstable. The results of this study are different from the research studied by Indradi & Taswan (2022) and Zulaekha (2019).

6. Firm size (Z) cannot moderate the effect of BOPO (X2) on ROA (Y), indicated by a coefficient of 0,214545 and a significant value of 0,0482 < 0,05. It means that firm size moderates the effect of BOPO on ROA and signaling theory which states that there is a company's encouragement in providing information to outsiders in the form of positive

signals that make investors know that Islamic commercial banks can manage expenses efficiently which makes operational activities an option.

7. Firm size (Z) cannot moderate the effect of ROA (X3) on ROA (Y), indicated by a coefficient of -0,151969 and a significant value 0,1071> 0,05. It means that firm size does not moderate the effect of CAR on ROA and firm size is not informative enough as a consideration in making decisions to predict the financial performance obtained if the company is in less stable market conditions. A high firm size does not necessarily provide a high return.

5. CONCLUSION AND RECOMMENDATIONS

The conclusions of this study are:

1. CAR (X1) has a positive but not significant impact on the financial of Sharia commercial banks. This is because society's trust is still low, so even large amounts of capital do not affect ROA.

2. BOPO (X2) has a significant positive impact on the financial performance of Sharia commercial banks. This is because banks can reduce their non-operating costs.

3. NOM (X3) has a significant positive impact on the financial performance of Sharia commercial banks. This is because a higher NOM increase the net income from productive assets, leading to an increase in ROA.

4. Firm size (Z) has a negative but not significant effect on ROA, this is because the larger the sze, the higher the operating costs. These include personnel costs, management costs, etc.

5. Firm size (Z) weakens the financial performance of Sharia commercial banks. When capital conditions are unstable, firm size is a less meaningful factor in investors decisions to predict a firm's financial performance. This suggests that company size does not necessarily mean high profits.

6. Firm size (Z) enhances BOPO in terms of financial performance of Sharia commercial banks. Signalling theory involves companies sharing information with external parties in the form of positive signals to investors that Shari'a commercial banks can effeciently manage expenses and operate optimally. There are things that are encouraged.

7. Due to the financial performance of Sharia commercial banks, firm size weakens NOM. When market conditions for a company are unstable, company size is not meaningful enough to take into account when making decisions to predict the financial performance achieved. A large copany does not necessary mean high profits.

Its hoped that banks will be more adept at reducing costs, especially unnecessary operational costs such as bank and administrative costs which result in large costs.

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