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Determinants of Islamic Bank Performance on Islamic Banking Profitability Ratios in Indonesia

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Abstract

Purpose - This study aims to examine the performance of Islamic banks in Indonesia with a sample ratio of the vulnerable in 2016-2019 and provide benefits in academic activities. Integration in banking operators to pay attention to their financial management at risk and and in other ways to kaffah sharia business targets.

Design/Methodology/Approach - Using a quantitative approach with the Vector Error Correction Model (VECM) data analysis technique due to the stationarity test at the 1st differn level and using time series sample data taken from June 2016 to June 2019 the accumulated data were collected from the OJK.

Findings - The results showed that in the long term all variables were significant, while in the short term all variables did not have a significant effect. The measure of significance was the T-table value of 1,697.

Originality/Value - This study raises the NPF, CAR, FDR, BOPO and NOM with the latest data, until June 2019.

Keywords: CAR; FDR; NPF; BOPO; NOM

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I. INTRODUCTION

Banks are at the heart of every country's financial system. Banks are financial institutions where individuals, private enterprises, state-owned enterprises, and even government agencies deposit their funds. Through lending activities and various services provided, banks serve financing needs and facilitate payment system mechanisms for all economic sectors. Thus, banking is a strategic tool in economic development.

The growth in the number of Islamic banks is in line with the development of Islamic banking performance, which can be seen from the amount of assets and the amount of financing disbursed. The success of a bank is influenced by many aspects, including management, human resources, marketing, and its financial condition. The financial condition of a bank can be said to be good or bad, one of which can be seen from its liquidity. Liquidity is a ratio that shows a company's ability to meet its short-term debt obligations as soon as possible.

In addition to liquidity, profitability is also important in assessing a company's condition. Profitability is an important factor that is always considered in running a business. This is because the primary goal of any business activity is to maximize profits. Banks, as an industry whose business activities rely on public trust, need to maintain their health by generating high profits so that their liquidity continues to increase. (Mulya E. Siregar , 2013).

Profitability is the most appropriate indicator for measuring a bank's performance. Profitability should be viewed as a driving factor in monitoring all factors, both quantitative and qualitative. Quantitative factors that affect the profitability of Islamic banks need to be carefully considered in order to be more effective in generating maximum profits. If a bank is able to generate increasing and sustainable profits, public confidence in using banking services will increase.

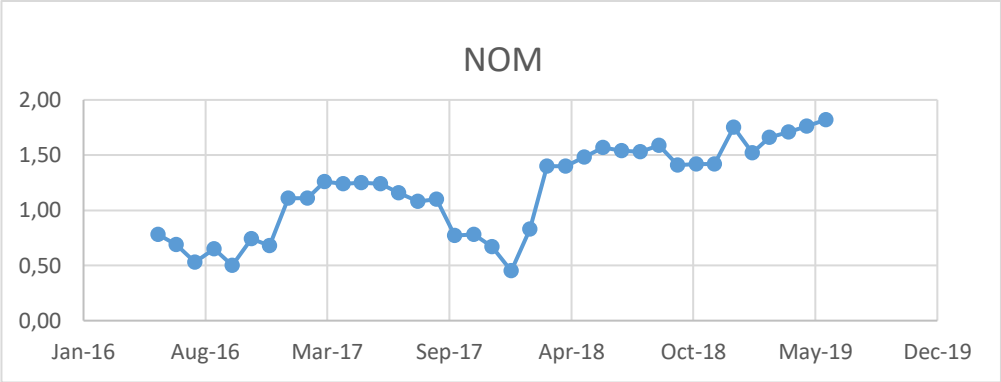
Profitability can be measured or seen by a ratio that indicates that the Islamic bank has a high profitability rating that can anticipate potential risks of loss and increase profits (Rivai, 2012). The provisions in SEBI No. 9/24/DPBS of 2007 state that an Islamic bank that receives a rating of one in the bank health assessment is an Islamic bank that has a NOM value of more than 3%. The level of a bank's

net operating margin (NOM) is greatly influenced by several factors that are beyond the bank's control (Puspitasari, 2014).

External factors affecting NOM include macroeconomic conditions, while in internal analysis, companies apply ratio and standard systems that separate them into a series of decisions that affect the company's operational performance. These internal factors are financial ratios such as those sampled in this paper, namely CAR, FDR, BOPO, and NPF (Kuncoro, 2012).

Regarding this profitability factor, Bank Indonesia issued Circular Letter No. 9/24/DPbS/2007 in connection with Bank Indonesia Regulation 7 Number 9/1/PBI/2007 concerning Net Operating Margin (NOM) as the main ratio in assessing the profitability of a bank, or in conventional banks known as Net Interest Margin (NIM) due to the interest element (Junita, 2015). The fluctuating movements in the Net Operating Margin (NOM) ratio from 2016 to 2019 are as follows:

Table 1
Graph of NOM Fluctuations June 2016-June 2019



Source: Ojk.go.id (data processed)

It can be seen that the fluctuating NOM movement experienced increases and decreases, with a decline seen from mid-2016, followed by an increase at the end of 2016 to early 2017 and a drastic increase at the end of 2017 to early 2018. Finally, at the beginning of 2019, there was a gradual increase every month. This is unique in that there has been a steady increase at the end of each year and the beginning of the following year for three consecutive years. This study focuses on the Net Operating Margin (NOM) ratio. However, theories regarding Net Interest Margin (NIM) are also used to support this study, as several studies on NIM are very helpful in strengthening the theoretical basis for Net Operating Margin (NOM).

The formation of the NOM ratio itself originated from banks using the NIM ratio in accordance with SE No.6/23/DPNP dated May 31, 2004, regarding the assessment system for the health of commercial banks. Therefore, the author was motivated to conduct research using time series data from mid-June 2016 to mid-June 2019, during which there were drastic fluctuations in increases and decreases.

This study has a similar objective to previous studies, which aim to determine the influence of Operating Expenses to Operating Income (BOPO), Capital Adequacy Ratio (CAR), Non-Performing Financing (NPF), Financing Debt Ratio (FDR), and Net Operating Margin (NOM). This study refers to the research by Margaretha and Zai (2013), entitled “Factors Affecting the Financial Performance of Indonesian Banks”. The variables used are CAR, LDR, NIM, BOPO, and NPL. The method used is a quantitative method, with a multiple linear regression analysis tool.

This study also refers to the research by Mario, Tommy, and Saerang (2014), entitled “Analysis of Financial Ratios to Measure Profitability in Private Banks Listed on the Indonesia Stock Exchange.” The variables used are CAR, BOPO, NPL, NIM, and LDR. The method used is quantitative, with multiple linear analysis tools.

However, the difference in the sample used in this study is that it focuses on Islamic Commercial Banks (BUS) in Indonesia, whereas the previous study used a sample of all commercial banks in Indonesia and publicly listed private banks. This study takes a more up-to-date observation period than the previous study, namely 2016-2019.

Based on the above description, the author is interested in conducting research on the factors that affect profitability using the Net Operating Margin (NOM) proxy at Islamic Commercial Banks (BUS) in Indonesia for the period 2016-2019. Therefore, the researcher will examine the "Effect of FDR, CAR, NPF, and BOPO on the Net Operating Margin (NOM) of Islamic Commercial Banks in Indonesia for the period 2016-2019.

II. METHOD

The type of research used by researchers is quantitative research. Quantitative research is a method of testing certain theories by examining the relationship between variables. These variables are measured using research instruments so that data consisting of numbers can be analyzed based on statistical procedures. Quantitative data is data measured on a numerical scale (numbers) (Kuncoro, 2013). Data collection techniques are used to test hypotheses or answer questions about the latest status of the research subjects. The method used is the descriptive-causality method, which is used to find explanations for the cause-and-effect relationship between concepts and variables. The type of data in this study is based on secondary data, namely reports related to Islamic banking taken from the Financial Services Authority (OJK) website from 2016 to 2019.

Data tersebut terpilih berdasarkan pertimbangan dengan alasan ketersediaan data yang terbaru dan terupdate juga keterbatasan waktu yang tersedia. Untuk sampel dalam penelitian ini adalah perbankan umum syariah yang terdaftar di Otoritas Jasa Keuangan yaitu dengan variabel NPF, CAR, FDR, dan BOPO terhadap NOM yang diambil dengan data bulanan time series dari bulan Juni 2016 sampai dengan Juni 2019 dengan teknik analisis data Vector Error Correction Model (VECM) dengan tahap pertama uji analisa data bermula dengan taraf stationeritas yaitu menggunakan unit root test dan tes kointegrasi Johansen.

Kemudian mengestimasi dan menentukan jeda optimal (optimum lag). Selanjutnya, model tersebut diuji dalam tes kausalitas Engel-Granger dan tes VECM. Pada uji analisis akhir adalah Impulse Respons dan Variance Decomposition dengan menggunakan Eviews 9 dengan model penelitian ini adalah:

$$NOM=\alpha+\beta_{1CAR}+\beta_2 FDR+\beta_3 BOPO_3+ \beta_4 NPF_4 + \varepsilon$$

Y: dependen varibel/ NOM
α: konstanta
β: regression coefficient
X1: CAR
X2: FDR
X3: BOPO
X4: NPF
Ɛ: error standard

III. RESULT AND DISCUSSION

According to Sarwono (2006), an operational definition is an explanation of the variables that will be used in the research. There are two variables in this study, namely independent and dependent variables. Operational definitions are aspects of research that provide us with information on how to measure variables. An operational definition provides scientific information that is very helpful to researchers or other readers who want to conduct research using the same variables. This is because this information makes it easier to know how to measure variables that are constructed based on the same concept. Thus, it is possible to determine whether to continue using the same measurement procedure or whether a new measurement is needed. This study explains the operational definitions of the variables used, namely:

Table 2 Operational Definitions of Variables

Variable	Explanation	Formula
CAR	Capital Adequacy Ratio (CAR) is the ratio of capital adequacy to risk-weighted assets (Fahmi, 2014).	CAR =_____ x 100%
BOPO	This ratio is used to measure the level of efficiency of banks in reducing operational costs as an effort to optimize operational income. (Dendawijaya, 2009).	BOPO =_____ x 100%
NPF	*Non Performing Financing* (NPF) reflecting the magnitude of the financing risk faced by banks, the	NPF=_____ x 100%

	smaller the Non-Performing Financing, the smaller the financing risk borne by banks (Rivai, 2010)	
FDR	*Financing to Deposit Ratio (FDR)* is the ratio between financing provided by banks and third-party funds successfully mobilized by banks. The higher the LDR, the higher the bank's profits (assuming that the bank is able to distribute its credit effectively; with increased bank profits, the bank's performance also improves). (Rivai,2010).	FDR =_____ x 100%
NOM	Net Operating Margin is a ratio used to describe net operating income so that the average ability of productive assets to generate profits is known (Rivai, 2012).	NOM=_____ x 100%

Initially, the analysis began with a stationarity test or Unit Root Test using the Augmented Dickey Fuller (ADF) approach ratio. If the probability value or P-value was less than 0.05, then the data obtained was stationary at a 5% significance level (at the level).

Table 3
Stationarity Test at Level

Variabel	**ADF Statistics**	**P-Value**	**Information**
NOM	-1.087507	0.7101	Non stationary
CAR	-1.418077	0.5627	Non stationary
FDR	-2.522400	0.1187	Non Stationary
BOPO	-0.688350	0.8271	Non stationary
NPF	-1.060534	0.7189	Non stationary

Source: processed data (2019)

Based on the test results shown in the table above, only the FDR variable is stationary at the level, so it needs to be tested in the first difference test. The results of the first difference test are as follows:

Table 4
Stationarity Test on the First Difference

Variabel	ADF Statistics	P-Value	Information
NOM	-6.207215	0.0000	Stationary
CAR	-5.376599	0.0001	Stationary
FDR	-7.738651	0.0000	Stationary
BOPO	-5.561126	0.0000	Stationary
NPF	-6.347720	0.0000	Stationary

Source: processed data (2019)

Based on the results in Table 4 above, it can be concluded that the research data has reached a stationary point in the first difference. The next step is to determine the optimal lag, where the lag length is determined by the results of the Likelihood Ratio (LR), Final Prediction Error (FPE), Akaike Information Criterion (AIC), Schwarz Information Criterion (SC), and Hanan-Quinn Criterion (HQ) marked with an asterisk (*). The lag with the most asterisks (*) is the lag selected for estimation in the next stage.

Table 5
Optimal Stationarity Lag Test

Lag	**LogL**	**LR**	**FPE**	**AIC**	**SC**	**HQ**
0	-186.4953	Na	0.053672	11.26443	11.48889	11.34098
1	-79.42192	176.3561*	0.000438*	6.436584	7.783373*	6.895877*
2	-54.49092	33.73018	0.000487	6.440642	8.909755	7.282680
3	-26.72444	29.39981	0.000548	6.277908*	9.869344	7.502691

Source: processed data (2019)

The results of Table 5 above show that the values marked with an asterisk are the smallest values in the existing criteria. Thus, the lag for these values is the optimal lag. In these results, the test results marked with an asterisk are mostly found at lag 1. Therefore, in this study, lag 1 is the most optimal. The next step is cointegration analysis, which is important for determining the long-term equilibrium between the observed variables. An equation is said to have cointegration if the trace statistic or max-eigen value is greater than its critical value.

Table 6
Cointegration Test

Hypothesized No.of CE (s)	**Eigen value**	**Trace Statistic**	**Critical Value**	**Prob.**
None *	0.682422	114.5236	69.81889	0.0000
At most 1 *	0.660219	76.67160	47.85613	0.0000
At most 2 *	0.464803	41.04958	29.79707	0.0017
At most 3 *	0.333782	20.42059	15.49471	0.0083
At most 4 *	0.191575	7.018015	3.841466	0.0081

Source: processed data (2019)

Based on Table 6, it can be concluded that the Johansen cointegration test results show no cointegration because the trace statistic is greater than the critical value with a critical value of 5%. This indicates that the movements between NPF, BOPO, CAR, FDR, and NOM have a balanced relationship and the same movement in the long term, where in each short-term period, all variables tend to adjust to each other to achieve long-term equilibrium. After testing the optimal lag and cointegration, a causality test will be conducted using Engel-Grager to see the reciprocal effect between the variables NPF, BOPO, CAR, FDR, and NOM.

Table 7
Engel-Granger Causality Test

Hypothesis	F-Statistic	Prob.
CAR does not Granger Cause NOM	3.55099	0.0275
NOM does not Granger Cause CAR	0.63215	0.6007
FDR does not Granger Cause NOM	1.48562	0.2407
NOM does not Granger Cause FDR	0.82986	0.4891
BOPO does not Granger Cause NOM	0.70603	0.5568
NOM does not Granger Cause BOPO	0.73428	0.5407
NPF does not Granger Cause NOM	1.21308	0.3239
NOM does not Granger Cause NPF	2.36317	0.0934

Source: processed data (2019)

Based on Table 7 above, it can be concluded that at the 5% level, the results obtained when the probability value is below 0.05 indicate that each variable has a significant reciprocal effect on NOM. In this study, the only variable that has a reciprocal effect is CAR, which has a reciprocal relationship with NOM with a probability value of less than 0.05, namely 0.0275.

The selection of the VECM analysis model to analyze the data in this study was used to describe the dynamic behavior of economic and financial time series data, as well as to forecast short-term and long-term estimates. This study uses a critical value significance of 5%, where the statistical value is 1.697. Variables are considered to have a significant influence if their values reject H0 when > 1.697 or accept H1 when the t-statistic value is < 1.697.

Tabel 8
Tes Hasil VECM

Long Term			
Variable	Coefficient	T-Statistic	Description
NOM	1.000000		
CAR	0.817562	3.33368	Significant
FDR	0.505297	4.98503	Significant
BOPO	-0.479649	-3.09086	Significant
NPF	4.494533	6.48445	Significant
Short Term			

D(NOM(-1))	0.195921	0.35939	Not Significant
D(CAR(-1))	-0.028295	-0.34354	Not Significant
D(FDR(-1))	0.030794	0.94015	Not Significant
D(BOPO(-1))	0.013756	0.02535	Not Significant
D(NPF(-1))	0.194192	1.41074	Not Significant
C	0.031524	0.74267	Not Significant
R-Square	0.366549		
Adj R-Aquared	0.049824		

Source: processed data (2019)

Based on the results of Table 7 above, it can be seen that in the long term all variables are significant, while in the short term all variables are not significantly affected, considering that the significance level is the T-table value of 1.697, so that the T statistic value which is greater than the T table 1.697 is said to be significant.

From the long-term VECM estimation table, the CAR variable at lag 1 has a positive and significant effect on NOM of 3.33> 1.697. This means that if there is a 1.00 increase in CAR in the previous year, it will decrease NOM this year by 3.33 with a coefficient value in the CAR variable of 0.817. This is in line with the results of research by Romdayanah in 2011 and Stiawan (2009), which had significant positive results on NOM financial performance.

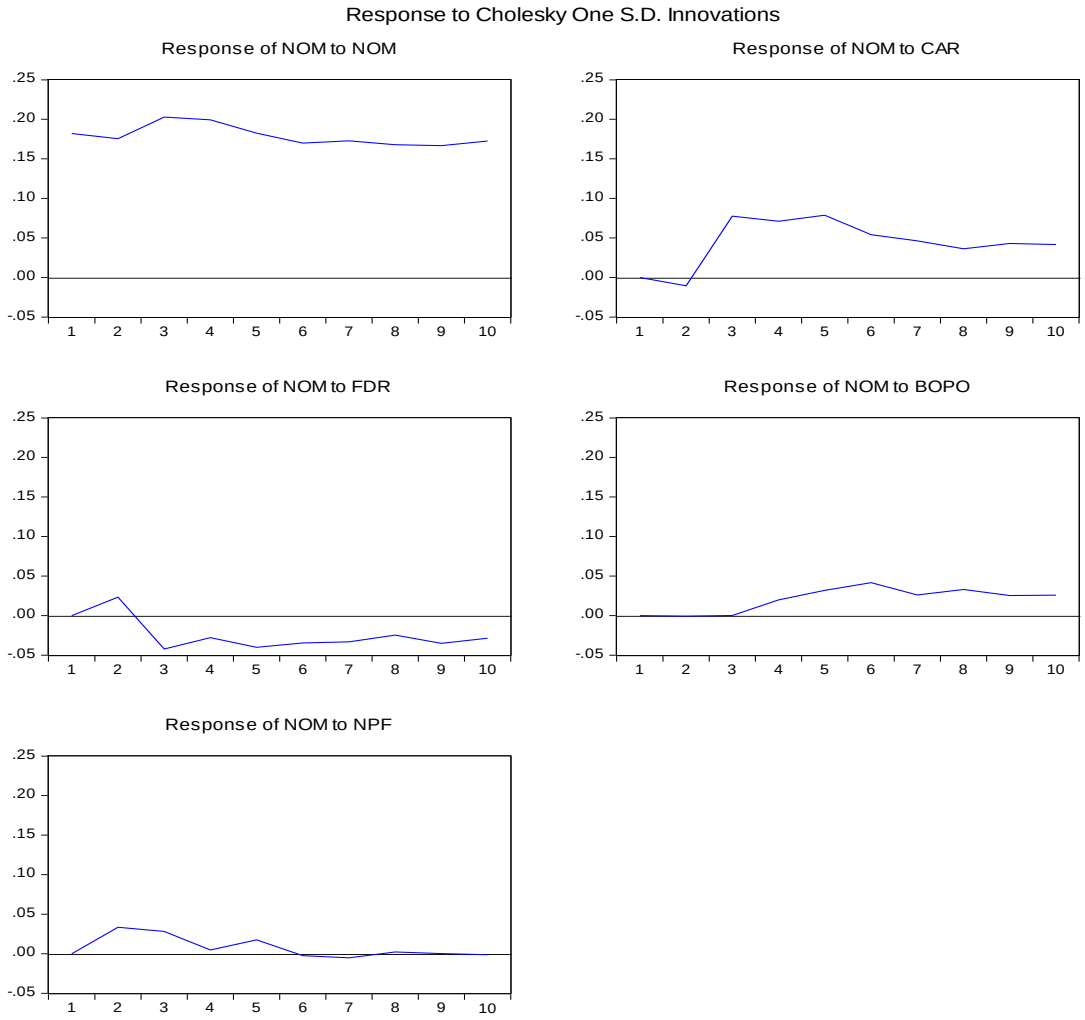
Meanwhile, the FDR variable at lag 1 has a positive and significant effect on NOM of 4.98> 1.697 with a coefficient value of 0.50. This means that if there is an increase in FDR of 1.00 in the previous year, it will decrease NOM this year by 4.98. These results are also in line with the results of Setiawan's research in 2015, which found that LDR has a positive and significant effect on profitability.

In contrast, the BOPO variable at lag 1 has a negative and significant effect on NOM of -3.09 with a coefficient value of -0.4. This means that if there is an increase in BOPO of 1.00 in the previous year, it will reduce NOM this year by 3.09. In several studies by Puspitasari (2014), Ariyanto (2011), and Junita (2015), the BOPO ratio has a significant positive effect on net interest margin. This is in contrast to Setiawan's (2015) study, which found no significant positive effect on ROA financial performance.

Finally, the NPF variable at lag 1 has a positive and significant effect on NOM of 6.48> 1.697 with a coefficient value of 4.49. This means that if there is an increase in NPF of 1.00 in the previous year, it will increase NOM this year by 6.48. In line with the results of Setiawan's (2015) research, which shows that LDR has a significant positive effect.

The results of the VECM test can be presented in an equation model that forms the coefficient value for each variable in the short and long term. However, the results of the short-term and long-term VECM estimates above need to be reviewed, because the R-Square is only 0.36 or 36% of 1 or 100%, where changes in the exogenous variable (NOM) can be explained by the endogenous variables (BOPO, CAR, FDR, and NPF) only 36% of the maximum 100%.

The VECM analysis results not only examine the influence of endogenous variables on exogenous variables, but the VECM estimation is also supplemented with IRF (Impulse Response Function) and VDC (Variance Decomposition) analyses to examine the response and time required for variables to return to their equilibrium point, as well as to examine the extent of the influence of each endogenous variable on the formation of its exogenous variable. The following are the results of the IRF and VDC analysis:



The analysis stage of the Impulse Response Function (IRF) test results is used to describe the shock rate of the variables used in the study. The dynamic behavior of the VECM model can be seen through the response of each variable to shocks from that variable and to other endogenous variables. In this model, the response of each variable to new information is measured by 1 standard deviation. The horizontal axis represents the time in days after the shock occurs, while the vertical axis represents the response value. Basically, this analysis will reveal the positive or negative response of a variable to other variables. In the short term, these responses are usually quite significant and tend to change.

In the long term, the responses tend to be consistent and continue to decrease. The Impulse Response Function provides an overview of how a variable will respond in the future if there is a disturbance in another variable. To facilitate interpretation, the analysis results are presented in the form of a graph below over 10 periods. The test results are in the form of a graph where the response graph will show the positive or negative response of the variables used. The results of the Impulse Response Function (IRF) can be seen below:

1. The NOM level response to CAR shocks in the first month was positive with a value of 0.0000, in the second month it was negative with a value of -0.010573, in the third month it was positive again with a value of 0.077428, in the fourth month it was positive with a value of 0.071016, the fifth month showed a positive response with a value of 0.078600, the sixth month experienced a decline with a response that was still positive at 0.054093 and continued to decline until the eighth quarter, when it rebounded with a positive response until the tenth quarter. This means that after the second quarter, the positive and negative reactions of the NOM level to shocks from the CAR tend to weaken.
2. The NOM level response to shocks from FDR in Month 1 to Month 2 increased by around 0.23384, then in Month 3 the response was negative with a value of -0.042224 until Quarter 10, experiencing ups and downs with a consistent negative response. However, these fluctuations were not too significant, meaning that the response of the NOM level to FDR shocks tended to fluctuate.

3. The response obtained by NOM to BOPO shows a negative response with a value of -0.000865 and experiences a positive and declining response in Month 3 with a value of 0.000177, as well as a positive and increasing response starting in Month 4 with a value of 0.019847 and continues to increase with a positive response until Quarter 10. This indicates a fluctuating upward shock from the BOPO value.
4. The response received from the NOM level to the NPF in the first quarter to the second month increased by 0.033510, but in the third to eighth quarters, the response tended to decline and even gave a negative response in the sixth and seventh months. A positive response returned in the ninth month with a value of 0.000147 and declined again with a negative response in the tenth month.

IV. CONCLUSION

Improved bank management will provide benefits that can increase profitability. Profitability is an important indicator for determining bank performance. A bank's ability to increase profitability can demonstrate its sound financial performance. Conversely, if profitability is low, then the bank's performance in generating profits is not optimal.

When Islamic banks want to earn high profits, they must have the capital capacity to anticipate risks. The CAR indicates a sufficient level of risk resilience. When Islamic banks want to earn high profits, they should channel the funds they collect to those in need, so that it can be said that the bank is performing its function properly.

The results of this study are expected to be useful as input for science in general, particularly regarding NOM or other profitability scales to determine the performance value of Islamic banking. For students majoring in Islamic banking, it is hoped that this study will contribute to their insight and knowledge and can be used as a reference for further research. For Bank Indonesia as Indonesia's central bank and OJK as the banking supervisory authority, the application of risk management will facilitate the assessment of potential losses faced by banks, which in turn can affect bank capital. Capital is an important factor for banks to protect the interests of customers and maintain public trust in the banking industry.

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