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The Influence of Internal and Macroeconomic Factors on the Profitability of Islamic Commercial Banks in Indonesia

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This paper analyzes the determinant factors to the profitability of Islamic Commercial Banks in Indonesia during the period 2012 - 2019. To this objection, 14 Islamic Commercial Banks in Indonesia have been studied. A panel data study uses impact of internal bank and macroeconomic are combine to explain the profitability of Islamic Commercial Banks as measured by Capital Adequacy Ratio (CAR), Non-Performing Financing (NPF), Financing to Deposit Ratio (FDR), total of assets, inflation and Gross Domestic Product (GDP). This study analyzed using the Generalized Method of Moments (GMM) dynamic panel data. The results of the study found that only internal bank factors that significantly affect the profitability of Islamic Commercial Banks, namely CAR, NPF, and FDR. CAR has a positive effect on ROA, while FDR has a negative effect on ROA for Islamic Commercial Banks in Indonesia. Only NPF has a negative effect on the two proxies of profitability (ROA and ROE). The results of this study indicate that Islamic Commercial Banks in Indonesia need to manage their assets optimally and apply better prudential principles in financing management to minimize financing risks so as to increase bank profitability.

Keywords: Islamic Commercial Bank; Generalized Method of Moments; Panel Data; Profitability

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INTRODUCTION

Banks play a role as brains in financing economic activities and various market segments. Afzal and Mirza (2012) explain that there is a strong correlation between banking system stability and economic growth, so that bank authorities around the world strive to ensure the security and health of their respective financial systems so that they can play an active role in the economic development of their countries. Bank failure will have an impact on society and the stability of a country's economy, because it has a systemic impact (Sutrisno, 2016). The economic crisis that occurred during 1997-1998 in Indonesia was also caused by poor banking management. However, Islamic banks remain stable, because the performance sharing system of Islamic banking implemented in banks is relatively well maintained and is not followed by a soaring increase in deposit rates so that operating costs are lower than conventional banks (Ali et al., 2012).

The characteristics of Islamic banking that operate on the principle of profit sharing provide an alternative banking system that is mutually beneficial for the community and banks by prioritizing the value of justice, togetherness and preventing speculative financial transactions (Hasan and Lewis, 2007). During the last few decades, the Islamic banking industry has grown rapidly, both at the domestic and international levels. Currently, Islamic banking assets in Indonesia are still showing positive growth, although experiencing a slowdown when compared to the previous year. In the last three years, the growth of Islamic banking assets has been maintained with an asset share reaching 6.18 percent of national banks, an increase compared to the previous year which was 5.96 percent in 2018.

With the stagnant growth in the share of assets, the tight competition in the financial and banking industry in Indonesia can affect bank profitability. This can increase banking risk, reduce profitability, and ultimately reduce public, investor, business and government confidence, so that Islamic banks must make improvements to their performance. One of the indicators of Islamic banking performance is profitability, and the higher the level of profitability indicates the best banking performance. Both ROA and ROE are proxies used to measure the profitability of Islamic banks. The performance of Islamic banking greatly determines the sustainability of the business, provides certainty to investors and provides benefits for shareholders. Profitability is important information for investors and managers that describes the stability and performance of the bank (Zarrouk et al., 2016). In addition, an increase in income or profit from total assets owned by a bank can explain the efficiency of a bank. Islamic banks with higher ROA will be more efficient because increased profits are able to support asset growth (Hasan and Lewis, 2007).

The profitability of Islamic banks can be influenced by external and internal factors. Previous studies that examined the effect of external determinants (inflation rate and GDP growth) on profitability were Azad, Azmat, and Hayat (2019); Masood and Ashraf (2012); Trad, Trabelsi, and Goux (2017); Widarjono, Mifrahi, & Perdana (2020). The research results prove that the profitability of the two types of banks is influenced by these external determinants. The purpose of this study is to analyze the influence of internal bank and macroeconomic factors on the profitability of Islamic Commercial Banks in Indonesia for the period 2012 to 2019 using the dynamic panel data method Generalized Methods of Moment (GMM). In addition, this study also analyzes the relationship between bank internal and macroeconomic factors on the profitability of Islamic Commercial Banks.

LITERATURE REVIEW

There have been many previous studies aimed at identifying the determinants that affect profitability in Islamic banks, one of which is Masood and Ashraf (2012) that examined whether internal bank and macroeconomic factors affect the profitability of Islamic banks in certain countries in various regions from 2006 to 2006. 2010 uses a panel data regression model. The measurement of profitability uses ROA and ROE as dependent factors. The results of the study show that banks with larger asset sizes and efficient management generate greater returns on assets, thus triggering growth in profitability.

Then, Eljelly (2013) tried to explore the determinants of the profitability of Islamic banks in Sudan in the period 2000 to 2010 using the panel data method with the Ordinary Least Square (OLS) model. This paper finds that only internal factors of these banks have a significant effect on bank profitability, as measured by return on assets (ROA), return on equity (ROE), and net financing margin. Costs, liquidity, and bank size were found to have a positive and significant effect on profitability. However, external macroeconomic factors do not have a significant effect on profitability.

Alharbi (2017) examined the determinants of the profitability of Islamic banks from 1992 to 2008 in almost all Islamic banks in the world. The Fixed Effect Model panel data regression model was used in this study, where the results of this study indicate that equity, other operating income, GDP per capita, bank size, concentration, and oil prices have a positive effect on Islamic banks. Insurance schemes, foreign ownership, and real GDP growth affect Islamic banks negatively.

Javaid and Alalawi (2018) examined internal and external factors that contributed to the profitability of 9 Islamic banks in the region of Saudi Arabia during the 2000-2013 period using unbalanced data panels and Fixed Effect Model. The results show that bank characteristics, industry characteristics, and macroeconomic variables had a significant effect in determining the profitability of Islamic banks. Our empirical findings show that bank characteristics such as

capital adequacy ratio and leverage have a positive and significant effect on both measures of profitability. Another finding from the characteristics of the industry is that the banking sector in Saudi Arabia is very competitive.

Taufik et al. (2020) examined the influence of profitability determinants on private Islamic banks and conventional state-owned banks in Indonesia from 2012 to 2017 using multiple regression analysis. The results show that the ratio of capital, total assets, deposit, and financing risk did not affect the profitability of Islamic private banks, but loans had a positive effect. The results also prove that the ratio of capital, savings, and financing risk does not affect the profitability of conventional state-owned banks, but total assets have a positive effect.

Widarjono et al., (2020) investigated the effect of market structure, including several bank internal variables and macroeconomic conditions on the profitability of Islamic rural bank in Indonesia using GMM static and dynamic panel data consisting of 142 Islamic rural banks from 2013Q1 to 2018Q4. The results show that market concentration and level of financing (FDR) had an effect on the profitability of Islamic rural banks in Indonesia. The higher market concentration allows Islamic rural bank to obtain significantly higher profits by implementing a collusive strategy.

Finally, research from Al-Homaidi, Almaqtari, Yahya, & Khaled (2020) aims to examine the effect of internal and external determinants on the profitability of 37 commercial banks listed on the Bombay Stock Exchange (BSE), India for the period 2008 to 2017 using the panel data method. static (pooled, fixed, and random effects) and the Generalized Method of Moments (GMM). The results show that bank size, asset quality, liquidity, asset management, and net interest margin are important internal determinants that affect ROA. Capital adequacy, savings, operating efficiency, gross domestic product, and the inflation rate have a significant negative effect on ROA. Furthermore, the results of the study indicate that capital adequacy, bank size, operating efficiency, gross domestic product, and the inflation rate have a significant negative effect on ROE. However, asset quality and asset management show a positive effect on ROE but liquidity, time deposits, net interest margins, and non-interest income have insignificant effects on ROE.

RESEARCH METHODS

This research is quantitative in nature using panel data regression analysis. The use of panel data is the basis for the process of estimating research data, namely the use of it in obtaining characteristics over time and between individuals. Panel data regression is able to minimize collinearity between variables and maximize degrees of freedom in increasing efficiency (Firdaus, 2011). The method used in this research is dynamic panel data regression using the Arellano-Bond Generalized Method of Moment (GMM) approach. Panel data analysis can be used in dynamic models, where the dependent variable does not only depend on exogenous variables, but also from the lag of the dependent variable (Dasril, 2015). This model was chosen because the cross-section data is larger than the time-series data (N> T).

The advantage of this method is that it can determine the short-term and long-term effects. Inclusion of the dependent variable lag into the independent variable gives a difference in the estimator model. In addition, in dynamic panel data regression, according to Anderson and Hsiao (1982) in Syahrul (2011), the Instrumental Variable (IV) estimation method can be used, namely by instrumenting variables that are correlated with error. There are two estimation procedures in the GMM framework, namely the first-different GMM (FD-GMM or AB-GMM) and the GMM system (SYS-GMM) (Lubis and Setiawan, 2013). Then proposed a serial correlation test based on GMM residues and comparing it with the Sargan test. Arellano Bond's GMM estimation method produces unbiased, consistent and efficient estimates.

The data used in this study uses secondary data in the form of panel data, which is a combination of cross section and time series. This study uses data from Islamic Commercial Banks in Indonesia between 2012 and 2019. The data is in the form of annual statistics that are officially obtained from the respective financial reports of each company and the Indonesia Central Statistics Agency (BPS).

Next, the model specifications that can be formulated in this study are as follows:

$$ROA_{it} = \alpha + \delta ROA_{it-1} + \beta_1 CAR_{it} + \beta_2 NPF_{it} + \beta_3 FDR_{it} + \beta_4 LN\_SIZE_{it} + \beta_5 GDP_{it} + \beta_6 INF_{it} + \varepsilon_{it} \quad (1)$$

$$ROE_{it} = \alpha + \delta ROE_{it-1} + \beta_1 CAR_{it} + \beta_2 NPF_{it} + \beta_3 FDR_{it} + \beta_4 LN\_SIZE_{it} + \beta_5 GDP_{it} + \beta_6 INF_{it} + \varepsilon_{it} \quad (2)$$

Definition of Variables:

ROA_{it}	= Rate on Asset (%)
ROE_{it}	= Rate on Equity (%)
CAR_{it}	= Capital Adequacy Ratio (%)
NPF_{it}	= Non-Performing Financing (%)
FDR_{it}	= Financing to Deposit Ratio (%)
LN_SIZE_{it}	= Total of asset (million rupiahs)
GDP_{it}	= Gross Domestic Product growth (%)
INF_{it}	= Inflation (%)
α	= Intercept
β	= Coefficient
ε	= Error
i, t	= Islamic Commercial Bank of-i, year of-t

RESULTS AND DISCUSSION

Islamic Commercial Bank Profitability Modeling

Islamic Commercial Bank profitability modeling was carried out using dynamic panel data of GMM Arellano-Bond, with two profitability models that had different dependent variables, namely the ROA and ROE models. Furthermore, the independent variable consists of Islamic bank internal factors with the CAR variable as a proxy for capital, NPF as a proxy for financing risk, FDR as a proxy for Islamic bank liquidity, LN_SIZE as a proxy for total assets. Next, other independent variables are macroeconomic indicators, namely economic growth (GDP growth) and inflation. Estimation using the GMM Arrelano-Bond method was carried out by involving 11 Islamic Commercial Banks in 2012 to 2019. In getting the estimator of the coefficient of the Islamic Commercial Bank profitability model, the Two Step Difference Robust model was used as the best model after comparisons between the difference model and the system, so that the GMM estimation used the Two Step Difference GMM Robust as a model that can be used for interpretation of research results. The parameter estimation results can be obtained in Table 1 below..

Table 1: Estimation Result of GMM Arellano-Bond

Variable	ROA		ROE	
	Coef.	Prob.	Coef.	Prob.
ROA (-1)	0.231284	0.295	0.300584	0.002
CAR	0.297479***	0.000	0.139019	0.574
NPF	-0.77309**	0.013	-8.18571	0.000***
FDR	-0.11654***	0.000	-0.16735	0.288
LN_ASSET	-1.31643	0.833	-15.6201	0.332
GDP	0.314993	0.881	-2.36866	0.712
INF	0.168837	0.827	-1.35026	0.202
Sargan test stat (p-value)	5.15 (0.161)		0.07 (0.996)	
AB-test orde 2 (p-value)	0.06 (0.951)		-0.07 (0.947)	
Long Term				
CAR	0.3869808	0.000		
NPF	-1.005693	0.063	-11.70364	0.000
FDR	-0.151599	0.005		

From the results of the GMM two-step difference estimation, it can be seen that a maximum of only two variables are significant at the 1 and 5 percent real levels in all models. Two Step Difference Robust GMM estimates in both models each have three and one significant variables at the one and five percent real level, namely CAR, NPF and FDR in the ROA model, while the significant variable in the ROE model is only NPF. This significant variable is then required to estimate the long-term model, the coefficient results of which can be found through the long-term table above. The interpretation of the two models above can use the ceteris paribus assumption. For example, in the ROA model, when CAR increases by one percent, it will increase ROA by 0.297 percent in the short term. Then when the NPF increases by one percent, it will decrease the ROA by 0.773 percent in the short term. The interpretation of long-term results can also be carried out using the ceteris paribus assumption. The two models have different significance results in their estimations, but only the NPF variable has the same significance between the two models.

Classic assumption test

To assess whether the research instrument is valid or not, it can be seen in the Sargan Test with the test results on models 1 and 2 of 1.15 and 0.07 for each model, not significant at any real level, so H0 cannot be rejected which means that the instrument variable in the Islamic Commercial Banks profitability model becomes valid or the number of instrument variables is more than the estimated number of parameters. The Sargan Test hypothesis is:

H0: Condition overidentifying restrictions in model estimation is valid (instrument variables are not correlated with errors); and

H1: Condition of overidentifying restrictions in model estimation is invalid.

The criteria for estimator consistency are the absence of second-order serial correlation of errors and endogenous variables in the first difference equation as shown by the results of the Arellano-Bond Test or AB Test in Table 1. Second-order test statistics (AR (2)) in each model of 0.06 and -0.07. Then the P-value of 0.951 and 0.947 in each model is greater than the five percent real level, so the decision is a failure to reject H0, which means that the resulting parameter estimates are consistent or there is no second-order serial correlation of errors and endogenous variables. in the first difference equation. The Arellano-Bond Test hypothesis is:

H0: There is no serial correlation between Δv_{it} and Δv_{it-2} (random walk); and

H1: There is a serial correlation between Δv_{it} and Δv_{it-2}

Discussion

Regarding the estimation results for the two models, there are no macroeconomic variables that significantly influence ROA or ROE. Only the company's internal variables are able to have a significant effect on the two proxies of profitability. The estimation results above indicate that CAR has a positive and significant effect on ROA of Islamic Commercial Banks in Indonesia. Capital Adequacy Ratio (CAR) is the ratio of capital adequacy which is used to accommodate the risk of loss that a bank may face. The results of this study are in line with research by Zarrouk, Ben Jedidia, & Moualhi (2016) which states that equity related to capital has a positive and significant effect on the profitability of Islamic banks and conventional banks in MENA countries. There are several reasons that could explain the fact that a higher capitalization can boost profitability. Zarrouk et al. (2016) stated that first, Islamic banks with higher capital ratios and profit-sharing ratios are more prudent in financing. Second, Islamic banks with a good capital position are able to pursue business opportunities

more effectively so as to achieve increased profitability. The factor for increasing returns from Islamic banks is the ratio of profit sharing resulting from real investment which is an essential basis in Islamic financial transactions. Third, the high capital owned allows banks to have lower risks and lower funding costs. This is the same in the case of conventional banks as stated by Athanasoglou et al. (2008), namely banks with large capital can reduce costs and increase profitability because they face lower demand and lower costs of external financing.

Furthermore, the estimation results above indicate that NPF has a negative and significant effect on ROA and ROE, in line with previous research by Munir et al. (2017) who found that financing risk has a significant and negative effect on profitability, both ROA and ROE. Non-Performing Financing (NPF) is a proxy for financing risk, which is defined as the risk of a debtor's failure to fulfill his obligations or a decrease in the debtor's ability to pay his obligations. Financing risk is the most common source of risk for Islamic banks and conventional banks which is the main source of bank failure. Financing risk plays an important role in the performance of financial institutions because the risk of non-performing financing will affect the performance of financial institutions. In his research, Febrianthi (2013) states that a high NPF can affect profitability to decline. this is because there are too many costs that Islamic Commercial Banks loans to customers, resulting in Islamic Commercial Banks management not being able to properly manage the non-performing financing. In the long run, a decline in credit quality can negatively affect profitability because the actual depreciation cost of default tends to be higher for banks with lower quality assets than for banks with better quality assets (Mokni and Rachdi, 2014).

Then, the Financing to Deposits Ratio (FDR) is a proxy for liquidity risk. The estimation results above indicate that the FDR has a negative and significant effect on ROA. A high FDR indicates the large number of deposits that causes an increase in the amount of financing provided by banks to customers as intermediary institutions. However, if the high FDR value exceeds the predetermined maximum limit, it indicates a liquidity problem because it uses part of the capital for financing funds to customers. So that if it is not managed properly it will cause losses which will then reduce the profitability of Islamic Commercial Banks (Putri, 2019). These findings indicate that Islamic banks in Indonesia have a high liquidity risk so that the FDR can generate negative profitability. However, with high liquidity, Islamic banks can avoid a liquidity crisis as stated by Trad et al. (2017) which states that the more liquid the bank is, the lower the credit risk and therefore the more resilient it is to periods of liquidity crises that can adversely affect the health of the bank.

CONCLUSION

This study aims to examine how the influence of Islamic bank internal performance indicators and macroeconomic factors on the profitability of Islamic Commercial Banks in Indonesia in the period 2012 to 2019. This study uses the GMM Arellano-Bond approach, as stated by (Arellano and Bond, 1991). The results showed that the company's internal performance had a significant effect on the profitability of Islamic Commercial Banks. The internal performance ratios are capital (CAR), financing risk (NPF), and liquidity (FDR) where CAR has a significant effect, while NPF and FDR have a negative effect on the profitability of Islamic Commercial Banks in Indonesia.

Based on the above conclusions, there are several policy recommendations for increasing the profitability of Islamic Commercial Banks, some of which are, it is important for Islamic Commercial Banks to carry out optimal asset management and implement better prudential principles in financing management, to minimize financing risks so that they can increase bank profitability. Then, in managing the funds collected from the public, it is important for Islamic Commercial Banks to always maintain and pay attention to the level of liquidity because liquidity can affect bank profitability. Low levels of liquidity can increase profitability, but it only lasts in the short term. In the long term, high levels of liquidity without being accompanied by liquidity management can backfire for Islamic banks because there is little cash available at the bank which can reduce public confidence which will impact on the decline in profit or profitability of Islamic banks. In addition, Islamic Commercial Banks need to increase their capital so that they can encourage banks to provide greater financing to the public so that they are able to compete with conventional banks in increasing their market share in Indonesia and obtaining better profits.

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