

# The Impact of Bank Characteristics and Macroeconomic Variables on the Islamic Commercial Banks Financial Performances: Case of Indonesia

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**Abstract:** This study aimed to investigate the impact of banks characteristics and macroeconomic variables on the financial performance among Islamic commercial Banks in Indonesia. This study applies a quantitative research methodology, which includes a numerical measurement and analysis of the factors which influence the Islamic commercial banks financial performance. In this study both internal (banks characteristics) and external (macroeconomic variables) factors that influence the Islamic banks' financial performance were applied; the data for this study are Panel data, also called longitudinal data or cross-sectional time-series data. It comprises of panel dataset of 12 Islamic Banks from Indonesia. Data were compiled from the DataStream Database and balance sheet for the period of 2009 to 2019, with 132 observations (nT) altogether. The results show that the internal factors (Equity Financing, Bank Size and Assets Quality) are significant factors on Islamic commercial banks financial performance in ensuring success and increase in the profitability and better performance of Islamic commercial Banks in Indonesia. On the other hand, two factor from the internal factors that has no significant impact on the Islamic commercial Banks' financial performance in Indonesia, namely the Debt Financing and Liquidity. In addition, from the macroeconomic indicators GDP growth rate act as the main external factor that significantly have an impact on the Islamic commercial banks' financial performance in Indonesia. Nevertheless, inflation factor has no significant impact on the Islamic commercial Bank's financial performance in Indonesia.

**Keywords:** Islamic Banks, Financial Performance, Equity Financing, Debt Financing GDP Growth Rate, Panel Data.

## I. INTRODUCTION

The performance of financial system significantly affects Islamic banking especially in terms of its growth. In fact, the significant role of financial performance in the general economy of a country has been reported (Samail et al., 2018). In this context, financial performance relates to the act of executing financial activity, and in Abubakar and Aduda (2017), the concept of financial performance was described as the level to which financial objectives are being or have been achieved. Equally, financial performance relates to the process of gauging the outcomes of policies and operations of firms in monetary terms, and it also relates to the measurement of the firm's general financial health within certain time period. Financial performance can also be utilized in making comparison between identical firms in similar industry.

Financial performance also allows the overall comparison of industries or sectors.

The accurate prediction of financial performance and the provision of appropriate guidelines will generate confidence among investors. Also, Javaid and Alalawi (2018) reported that performance measurement in the banking sector has always been important as its contribution in economic development and sustainability is beyond compare.

Within the Indonesian situation, the annual report produced by IFN (2016) demonstrated the significant effort of the country in establishing its industry of Islamic banking amidst numerous regulations, including the regulations on Islamic hedging transactions and regulations on the Islamic capital market during the 2015-2016 periods. These regulations which were for the improvements of Islamic banking in the country were launched by the Indonesia Financial Services Authority; in 2013, this authority became the body that supervised and developed the financial industry of the country, and prior to that, the central bank of the country was the responsible body. Rusydiana and Sanrego (2018) in Indonesia, the Market share of Islamic banking is merely roughly 5% as opposed to the total assets of banks all over the country. The authority further indicated that the customers of Islamic Banks in Indonesia were still less than 10 million, which means that their consciousness about *Shariah* compliant products and services are still low. Lack of awareness among Muslims about Islamic banks financial performance, has affect the Islamic Banks total assets to be very small in comparison with the conventional banks (Abubakar & Aduda, 2017). Many still has a wrong understanding or misconception against Islamic Banking, which among the thoughts are: Islamic Banking is not profitable because no interest is charged. Thus, better awareness shall be creating among the customers that Islamic Banking is not only an alternative financial approach but also in some aspects provides better value propositions to the consumers. Sukmana and Febriyati (2016) although Indonesia is one of the largest Muslim communities in the world, their consciousness about *Shariah* compliant products and services are still low. In addition, (Chowdhury, 2013) stated that, In Indonesia, with a Muslim population of 195 million, only 1.2% of total banking assets are under Islamic Finance.

This study aims to characterize a number of internal and external indicators that impact the overall financial performance of Islamic commercial banks in Indonesia. Specifically, The Objective of this study is to investigate the impact of banks characteristics and macroeconomic variables on the Financial Performance among Islamic Commercial Banks in Indonesia. The purpose is to make a decision which among the potential determinants of financial performance, come out to be significant. By studying the relationship between internal and external indicators and the financial performance, this paper contributes to the continuing discussion on the impacts of internal and external indicators on the financial performance of the Islamic banking industry. Finally, a comprehensive set of internal characteristics is examined as determinants of Islamic banks financial performance in Indonesia. These Internal characteristics consist of Equity Financing, Debt Financing, Bank Size, Liquidity and Assets Quality. Additionally, as studying the relationship between Islamic banks' internal characteristics and financial performance, this paper also examines the impact of external variables, such as GDP Growth rate and Inflation.

## II. LITERATURE REVIEW

Ika and Abdullah (2011), conducted A comparative study of financial performance of Islamic banks and conventional banks in Indonesia and they found out that, Profitability do not show any statistically difference between Islamic banks and conventional banks in the period both 2000-2007 and in the period 2005-2007. In fact, their findings are consistent with the findings of the other studies, which found that there was no significant difference in profitability between Islamic banks and conventional banks (Samad, 2004; Widagdo and Ika, 2008). This result might be explained by the fact that revenues of Islamic banks are mainly obtained from financing activities that steadily increased during period 2000-2007. Their analysis stated that even though Indonesia has the largest Muslim population, it does not guarantee that the Muslims are always following the Islamic rules. This can be observed when the Indonesian Ulama board released a fatwa, which states that interest is *haram* few years ago. The figure of Islamic banks' deposits and financings did not seem to be affected by this announcement.

Idris (2011) conducted another study on the profitability of Islamic banks in Malaysia, where the authors analyzed the effect of internal variables on the profitability of Islamic banks. The study included nine Islamic banks for the period 2007 to 2009. The authors used the following internal factors: capital ratio (total equities), credit risk (allowances for doubtful debt), liquidity (total loans), bank size (total assets), and expense management (total expenses). While other studies used these variables in ratio form, this study used the logarithmic values of the variables. The authors used ROA as a profitability measure. The results indicate that the bank's size had a positive and statistically significant effect on Islamic banks' profitability. Furthermore, the total equities

and loans showed a positive effect on profitability, while the factors representing the credit risk and expense management expressed a negative effect on Islamic banks profitability.

Sanwari and Zakaria (2013) studied the Islamic bank performance in relation to the effect of both internal conditions and the external factors on Islamic banks performance. Global Islamic banks' data were obtained from the annual report on Islamic banking from Bank Scope database. Panel data of 74 Islamic banks from around the world was examined for the period 2000-2009. Their findings revealed that the performance of these banks depends more on bank specific characteristics such as capital, assets quality and liquidity, while macroeconomic factors do not significantly influence Islamic banks' profit. Berger and Bouwman (2013) investigate the impact of capital on bank's performance. They found that capital benefits bank with small size to raise their market share and probability of survival at all times including normal times, market crises and banking crises. They also find that capital increases the performance of banks with large and medium size in the period of banking crises.

Study was done by (Sukmana and Febriyati, 2016) aimed to describe and critically evaluate and compare the financial performance of Islamic and conventional banks. Data of Capital Adequacy Ratio (CAR), Return on Asset (ROA), Operational Cost/ Operational Revenue (BOPO), Non-Performing Loan (NPL) /Non Performing Financing (NPF) and Loan Deposit Ratio (LDR)/ Financing Deposit Ratio (FDR) for Islamic and conventional banks are examined. The analysis of monthly data covers the period from January 2004 to July 2014 (127 observations). Paired sampled t-test was adopted to see whether there are significant differences in the financial ratios between both banks. This study found that CAR, ROA, BOPO and NPL of conventional banks are significantly higher than that of Islamic banks but not FDR.

## III. DATA AND METHODOLOGY

The data for this study are Panel data, also called longitudinal data or cross-sectional time-series data. Panel data give more informative data, more variability, less collinearity among the variables, more degrees of freedom and more efficiency (Park, 2011). The use of panel data results in a greater availability of degrees of freedom and hence increases efficiency in the estimation (Brooks, 2019). In addition, the data for this study are collected from the DataStream Database and Balance sheet. It comprises of panel dataset of 12 Islamic commercial banks operating in Indonesia, The study period includes eleven years from 2009 to 2019. Altogether, there are 132 observations (the total number of observations is  $nT$ ). To investigate the impact of banks characteristics and macroeconomic variables on the financial performance among Islamic commercial Banks in Indonesia. The study uses internal or (bank's specific characteristic) as well as external (macroeconomic) parameters as the country's specific indicators. Data will be analyzed from banks that offer Islamic banking products and services under the Islamic Banking

Scheme; the 2009 - 2019 periods is selected to find the latest results on Islamic banks financial performance in Indonesia. As the study is focuses on the performance of Islamic commercial banking in Indonesia, secondary data is used as the data collection method. Secondary data will be extracted from the existing published material in DataStream Database and Balance sheet. According to (Creswell & Clark 2018) observations about the recent research methods of academics, they found some advantages of secondary data collecting, it gives high standards of quality as data is checked and updated continuously.

Combination of two different measures will be used to measure the Financial Performance: (i) Return on Assets (ROA), which shows the bank management’s ability to convert assets to net profit, and (ii) Return on Equity (ROE), which measures the return flow to the shareholders of the bank. Table 1. Below presents the measurements that were used to operationalize the study variables.

Table 1: The measurements of Variables applied in this study

Variable	Measurement	
Financial Performance	The average of Return on Assets and Return on Equity	<i>Samina Riaz, and Ayub Mehar (2013); Hassan and Bashir (2003)</i>
Asset Quality	(Non-Performing Financing/ Total assets)	<i>Setyawati et al. (2015); (Kaushala et al., 2017); (Akhtar &amp; Ahmed, 2011)</i>
Liquidity	Total Deposits/ Total Assets	<i>Ramlan, H., &amp; Adnan, M. S. (2016); (Kaushala et al., 2017); (Suppia &amp; Arshad, 2019)</i>
Equity Financing	PLSF = (Equity Funding contracts/ Total financing)	<i>(Bahayu &amp; Septiarini, 2019); (Abuscharbeh, 2014).</i>
Debt Financing	NPLSF = (Debt Funding contracts / Total financing)	<i>Abuscharbeh (2014).</i>
Bank Size	The Size is measured as the natural logarithms of total assets.	<i>(Noman et al., 2015); (Rashid &amp; Jabeen, 2016); (Kaushala et al., 2017); (Asadullah, 2017); (Suppia &amp; Arshad, 2019)</i>
GDP Growth Rate	Annual real Gross Domestic Product, growth rate (%)	<i>Amal, C. (2016); (Hamid et al., 2017); (Asadullah, 2017); (Nagaraju &amp; Boateng, 2018)</i>
Inflation rate	Consumer Price Index annual inflation rate (%)	<i>Rashid &amp; Jabeen (2016). Amal (2016) Bahaman &amp; Akhter (2015); (Kaushala et al., 2017); (Asadullah, 2017); (Nagaraju &amp; Boateng, 2018)</i>

Moreover, SmartPLS Software is used to analyze quantitative data as it has commands that are more convenient and options for panel data analysis (Awang, Afthanorhan and Asri, 2015). In addition, PLS-SEM offers several applications and is the newest and most efficient model when it comes to graphics (Nardi, 2015). Thus, PLS-SEM is very suitable for exploratory research with secondary data, because it offers the flexibility needed for the interplay between theory and data (Nitzl, 2016). Data analysis will be conducted to produce information that will assist the researcher in addressing the research issue. Based on the available data set, all data are

gathered and transferred to a data sheet using software known as SPSS version 21 and SmartPLS (M3) software for analysis.

IV. RESULT AND ANALYSIS

This part presents the finding of this study. To evaluate the research model SmartPLS (M3) was applied to analyze the data collected. This incorporated PLS Algorithm and then bootstrapping.  $R^2$  is evaluated as the main objective of PLS, which is to maximize the explained variance within the endogenous variables. In this regard, the values of the effect fall in the range between 0 and 1, whereby the value of 1 denotes the full predictive accuracy. Furthermore, considering that  $R^2$  is embraced by countless disciplines, researchers are advised to rely on a rough guide in relation to acceptable  $R^2$  values namely 0.25, 0.50, and 0.75. The aforementioned value, according to Hair et al. (2019) correspondingly denotes predictive accuracy levels that are weak, moderate and substantial. It is however mandatory that  $R^2$  values are adequately high to allow the proposed model to attain the smallest possible level of explanatory power (Aliyu & Yusof, 2017). For that reason, the structural model’s quality is assessable using the value of  $R^2$ . The value demonstrates the variance within the endogenous variable being explained by the exogenous variables. Referring to the outcomes presented in Figure 1; firstly, the  $R^2$  of financial performance was .482. This is a demonstration that Equity Financing, Debt Financing, Assets Quality, Liquidity, Bank Size, inflation, and GDP growth rate cumulatively account for 48.2% of the variance in financial performance, indicating that the  $R^2$  value is moderate.

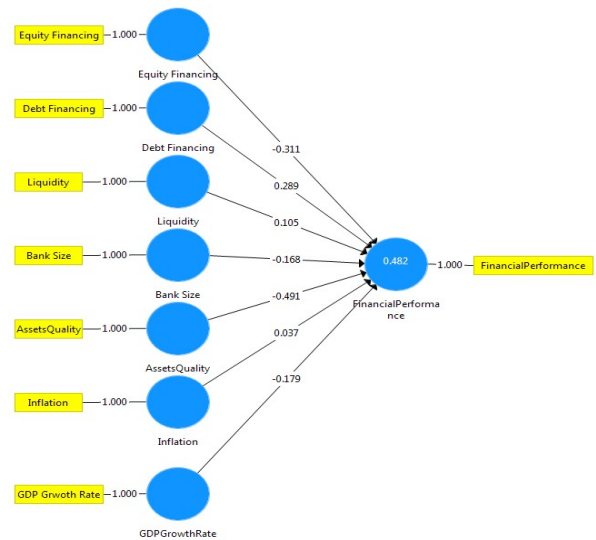


Fig. 1: Results of the  $R^2$  and path analysis

The final step in PLS-SEM structural model is the execution of test on the hypothesized relationships. For this purpose, the researcher executed the PLS bootstrapping algorithm in SmartPLS (M3). Moreover, for a two-tailed test, the critical t-values appear to be at 1.65 (at 10% degree of significance), 1.96 (at 5% degree of significance), and 2.58 (at 1% degree of significance). This study follows the t-value of 1.96 as its significance level of 5%. Along this vein, the researcher set



300 re-samplings with a replacement number from the bootstrapping cases equal to the original number of sample (121). This will result in standard errors and t-statistics. Figure 2 And Table 2 contain the path coefficient and the outcomes of bootstrapping, where the hypothesized relationships below were tested:

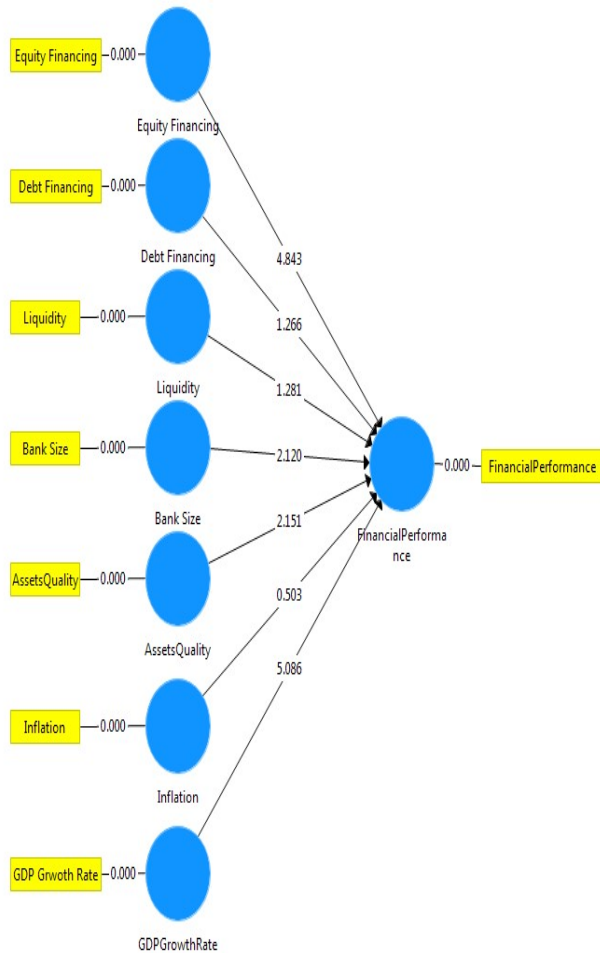


Fig. 2: PLS bootstrapping (t-values) evaluation for the Study Model

Next, the results of the hypotheses testing the results showed that the internal factors (Equity Financing, Bank Size and Assets Quality), are significant factors in the determination of Islamic commercial banks’ financial performance in ensuring success and in increasing the profitability of Islamic commercial Banks in Indonesia. Two variables from the internal characteristic’s that has no significant impacts on Islamic commercial Banks’ financial performance, namely Debt Financing and Liquidity. Hence, Equity Financing, Bank Size and Assets Quality should be presented as main internal factors that determine Islamic commercial banks’ financial performance in Indonesia.

On the Other hand, for external (economics) indicators, it can be clearly seen that GDP growth rate is the most important external variable that have significant positive relationship with Islamic commercial banks’ financial performance in

Indonesia. Oppositely, from the external variables, that has no significant relationship with Islamic commercial Banks’ financial performance, and this variable is inflation. Hence, GDP growth rate should be presented as the leading external factors that determine Islamic commercial banks’ financial performance within the context of Indonesia.

Table 2 : Summary of Hypothesis Testing.

Hypothesis of the Study	T Values	P Values	Decision
Equity Financing -> Financial Performance	4.843	0.031	Supported
Debt Financing -> Financial Performance	1.266	0.288	Not Supported
Liquidity -> Financial Performance	1.281	0.321	Not Supported
Bank Size -> Financial Performance	2.120	0.042	Supported
Assets Quality -> Financial Performance	2.151	0.039	Supported
Inflation -> Financial Performance	0.503	0.659	Not Supported
GDP Growth Rate -> Financial Performance	5.086	0.002	Supported

## V. RESULTS DISCUSSION

**Equity Financing:** The parameter estimate results for this hypothesis demonstrated a relationship that is positive with statistical significance, where: H1: Equity financing → Islamic commercial Banks’ financial performance; t-value =4.843, p = 0.031). This finding is in consistency with the previous researchers’ findings reported by (i.e., Samudhram, 2010; Mawardi et al., 2012; Zulfiqar et al., 2016). The findings above can be justified by the significant impact of equity financing (PLS) on the performance of Islamic commercial banks in Indonesia due to the fact that equity financing profit-sharing financing is still practiced in Islamic commercial banks in Indonesia as the percentage of mudharabah and musyarakah funding increases each year, leading to the increase of profitability of the Islamic commercial banks in Indonesia.

**Debt Financing:** The result of parameter estimate (H2: Debt Financing → Islamic commercial Banks Financial performance; t-value = 1.266, p = 0.288) for this hypothesis appears negative and statistically insignificant. The reported result can be justified by the fact that Islamic commercial banks in Indonesia still expansively utilizing Financing based on equity especially in the previous years. Another credible justification is that Debt Financing is seen as comparable to Interest-based financing and most scholars view debt financing as against the spirit of Islamic principles.

**Liquidity:** The result of parameter estimate (H3: Liquidity → Islamic commercial Banks Financial performance; t-value = 1.281, p = 0.321) for this hypothesis appears negative and statistically insignificant. This finding is in consistency with the previous researchers findings reported by (i.e., Molyneux and Thornton, 1992; Asutay & Izhar, 2007; Srairi, 2009; Idris, 2011). The reported result can be justified by the fact that Islamic commercial banks in Indonesia and Islamic banks in

general rely on long-term equity financing contracts such as Musharakah and Mudarabah, another reason for this insignificance relationship is the potential liquidity difficulty in Islamic banks is due to the inadequate number of financial instruments that are accepted by the *scholars and* jurists of *Shariah*. Consequently, Islamic banks are constraint from the same financing options that are obtainable to conventional banks in the inter-bank market.

*Bank Size*: The parameter estimate results for this hypothesis demonstrated a relationship that is positive with statistical significance impacts, where: H4: Bank Size → Islamic commercial Banks' financial performance; t-value = 2.120, p = 0.042). This finding is in consistency with the previous researchers' findings reported by (i.e., Flamini et al., 2009; Bertay et al., 2013; Petria et al., 2015; Chronopoulos et al., 2015; Waemustafa & Sukri, 2015). The findings can be justified by the significant impact of Bank Size on the performance of Islamic commercial banks in Indonesia due to better cost control.

*Assets Quality*: The result of parameter estimate (H5: Assets Quality → Islamic commercial Banks Financial performance; t-value = 2.151, p = 0.039) for this hypothesis appears positive and statistically significant. This finding is in consistency with the previous researchers findings reported by (i.e., Smaoui and Salah, 2012; Sanwari and Zakaria, 2013; Idris et al., 2011; Javaid & Alalawi, 2018; Samail et al., 2018). The reported result above can be justified by the fact that for Islamic banks, their credit risk is usually restrained, and therefore, these banks generally have lower loan Loss provision ratio.

The research also sought to examine the impact of the external factors specifically, (Inflation, GDP Growth rate) on Islamic commercial Banks' Financial Performance in Indonesia. It can be clearly seen that these factor (GDP growth rate) are the most important external variable that have significant positive impact on the Islamic commercial banks' financial performance with The result of parameter estimate (H6: GDP Growth Rate → Islamic commercial Banks Financial performance; t-value = 5.086, p = 0.002). Such finding is in agreement with (Zarrouk et al., 2016; Amzal; 2016) who concluded that Islamic banks show superior performance in environments with high level of gross domestic product and investment. The GDP growth reflects the overall economic activity in a country, and higher GDP growth rates could encourage the demand for bank products which will lead to high profitability and better financial performance. Oppositely, inflation factor has no significant (negative) relationship with Islamic commercial Banks' financial performance. The result of parameter estimate (H7: inflation → Islamic commercial Banks Financial performance; t-value = 0.503, p = 0.659). These findings are attributed to the fact that inflation will decrease the power of liquidity of the population, causing the population to make less deposit and save less in the financial institutions (including Islamic banks) which will definitely

reduce the source of fund that Islamic commercial banks may use it for investment.

## VI. CONCLUSION

As stated above, the current study intended to investigate the impact of banks characteristics and macroeconomic variables on the Financial Performance among Islamic commercial Banks in Indonesia. The research used a model that has seven variables both internal and external that impacting Islamic commercial banks' financial performance in Indonesia. Notably, the empirical analyses have presented fresh relevant findings towards the significance of Islamic banking industry on Islamic banks' financial performance in Indonesia. The internal factors (i.e., Equity Financing, Bank Size and Assets Quality) are important factors in the determination of Islamic commercial banks' financial performance in ensuring the success and increase in the profitability of Islamic commercial Banks operating in Indonesia. On the other hand, two factors from the internal factors that was not showing significant effect on Islamic commercial banks' financial performance which is Debt Financing and Bank size. In addition, GDP growth rate should be presented in a manner that acts as the key external factor that determine Islamic commercial banks' financial performance in Indonesia. Meanwhile, Inflation factor from the external variables that has no significant on Islamic commercial banks' financial performance in Indonesia.

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