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# Exploring the Influence of Bank Traits and Economic Factors on the Profitability of Indonesian Islamic Commercial Banks

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**Abstract**

The present research aims to investigate the impact of banks' characteristics and macroeconomic factors on the profitability of Islamic commercial banks in Indonesia. This study utilizes a quantitative research technique that involves the application of numerical measurements and analysis to investigate the factors that influence the profitability of Islamic commercial banks. This study investigates the influence of internal factors, including equity financing, bank size, and debt financing, as well as external factors, such as the GDP growth rate and interest rate, on the profitability of Islamic banks in Indonesia. This study utilizes panel data, also known as longitudinal data. The dataset comprises a panel of 11 Islamic commercial banks located in Indonesia. The data were obtained from the DataStream Database and the balance sheet for the period between 2012 and 2022, yielding a total of 121 observations. The results suggest that equity financing, bank size, interest rate, and GDP growth rate significantly influence the profitability of Islamic commercial banks in Indonesia. These characteristics are critical in ensuring the success, profitability, and overall performance enhancement of Islamic commercial banks. However, the internal factor of debt financing does not exert a substantial influence on the profitability of Islamic commercial banks in Indonesia. The study suggests that Islamic banks, especially in Indonesia, should strengthen profit-and-loss sharing instruments in order to reduce inequalities and promote economic growth.

*Keywords: Islamic banks, profitability, GDP growth rate, panel data, Indonesia*



## 1. Introduction

Islamic banking, which adheres to Sharia principles, has become an integral part of the global financial system. Unlike conventional banks, Islamic banks operate on principles such as profit-and-loss sharing, asset-backed financing, and the prohibition of interest (*riba*). These distinctive features present unique challenges and opportunities for measuring and enhancing their profitability. As Islamic banking continues to grow, particularly in countries with significant Muslim populations, understanding the factors that influence their profitability becomes crucial (Muhammad & Al-Shaghdari, 2024). This study focuses on the Indonesian Islamic banking sector, exploring how specific bank traits and broader economic factors affect their financial outcomes. Profitability of banks plays a crucial role in the general economy of a country, as highlighted by Samail et al. (2018). Profitability, encompasses executing financial activities, achieving financial objectives, and measuring the outcomes of policies and operations of firms in monetary terms (Abubakar & Aduda, 2017). It also includes assessing a firm's overall financial health over a specific period and allows for comparisons between similar firms in the same industry and across different sectors. Accurate predictions and guidelines for profitability can boost investor confidence. As reported by Javaid and Alalawi (2018), Profitability measurement in the banking sector is vital due to its significant contribution to economic development and sustainability. In Indonesia, Islamic Finance News in the Annual Report 2016 demonstrated the country's substantial efforts in establishing its Islamic banking industry amidst numerous regulations, including those on


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Islamic hedging transactions and the Islamic capital market during 2015-2016. These regulations, launched by the Indonesia Financial Services Authority (OJK) since its establishment in 2013, aimed to improve Islamic banking in the country. Before OJK, the central bank supervised the financial industry. According to Rusydiana and Sanrego (2018), the market share of Islamic banking in Indonesia was roughly 5% of total bank assets, and customers were less than 10 million, indicating low awareness of Sharia-compliant products and services. This lack of awareness has kept Islamic banks' size significantly smaller compared to conventional banks (Abubakar & Aduda, 2017; Muhammad et al., 2023). Many misconceptions persist, such as the belief that Islamic banking is unprofitable due to the absence of interest charges. Greater awareness is needed to demonstrate that Islamic banking is a viable alternative with unique value propositions. Despite Indonesia being home to one of the largest Muslim communities globally, awareness about Sharia-compliant products remains low (Sukmana & Febriyati, 2016). As noted by Chowdhury (2013) and Saleh et al. (2021), in a country with 195 million Muslims, only 1.2% of total banking assets are under Islamic finance.

This study aims to identify internal and external indicators that impact the profitability of Islamic commercial banks in Indonesia. By identifying key determinants, the research provides valuable insights for bank managers to optimize operational strategies and improve profitability. Policymakers can leverage these findings to create a more robust regulatory framework that supports the growth of Islamic banking. Additionally, investors can make informed decisions based on a deeper understanding of profitability drivers within this sector. Ultimately, the research contributes to the sustainable development of Islamic banking in Indonesia, fostering economic stability and growth. Additionally, this study will bridge the knowledge gap by analyzing these variables to provide a comprehensive understanding of what drives profitability in Indonesian Islamic commercial banks. By doing so, it seeks to offer actionable insights for bank managers, policymakers, and investors to enhance the sector's growth and stability. The research is structured as follows: Section 2 provides a concise overview of the prior literature on Islamic bank profitability. Section 3 focuses on the research methodology, including research design, sample selection, variables operationalization's, data collection, and data analysis procedures. Section 4 presents the results derived from the statistical analysis. Section 5 offers an overview of the implications, limitations of the current study, and proposes potential avenues for future research.

## 2. Literature Review

Islamic banking, based on Sharia principles, has been well recognised worldwide for its ethical approach to money, which focuses on profit-sharing and transactions supported by assets (Megat et al., 2024; Iqbal & Molyneux, 2016). The Islamic banking industry in Indonesia has experienced substantial growth, providing financial goods and services that adhere to Sharia principles and meet the ethical and religious requirements of a large Muslim population (Kassim & Majid, 2010). Equity financing and bank size are crucial internal elements that significantly influence the profitability of Islamic banks (Al-Shaghdari & Bardai, 2020). Equity financing, a fundamental aspect of Islamic finance principles, is the sharing of risks between the bank and its stakeholders. This has the potential to decrease financial difficulties and improve long-term viability (Ariss, 2010). Research suggests that Islamic banks with higher equity ratios tend to have higher profitability. This is because higher equity ratios reduce debt and ensure that stakeholders' interests are in line with the bank's profitability (Sufian et al., 2012). Bank size, as determined by the total value of assets, is an important internal component that has a significant impact on profitability. Big banks gain advantages from economies of size and breadth, which allows them to distribute operational expenses more effectively and expand revenue sources by offering a wider variety of financial products (Akhtar et al., 2011). Furthermore, larger banks frequently benefit from increased market exposure and client confidence, resulting in higher profit margins as compared to smaller institutions (Kahf, 2006). The profitability of Islamic banks is substantially influenced by external macroeconomic factors. The GDP growth rate functions as an indicator of economic activity, impacting the lending portfolios of banks and investment prospects (Khan & Bhatti, 2008). An impressive GDP growth rate boosts the need for credit and financial services, resulting in banks benefiting from greater loan volumes and increased fee income (Haron & Wan Azmi, 2008). On the other hand, economic downturns or slow growth can limit the demand for loans and negatively affect the profitability of banks. Islamic banks are impacted differently than conventional banks by interest rates, which are a crucial macroeconomic factor, because Islamic banks are prohibited from engaging in transactions that involve interest. Fluctuations in interest rates have an effect on the expenses of banks and their methods of obtaining funds, which in turn affects their

profitability margins and tactics for setting prices (Beck et al., 2013; Al-Shaghdari & Adeyemi, 2020). Islamic banks primarily depend on profit-sharing agreements and funding based on assets, which makes them susceptible to changes in monetary policy and market interest rates. This research utilises panel data analysis to examine the factors that influence the profitability of Islamic banks, as commonly done in empirical studies. Panel data approaches enable researchers to examine differences in both cross-sectional and time-series data across a sample of banks. This approach yields substantial insights into the dynamic links between internal features, macroeconomic factors, and profitability (Hassan & Bashir, 2003). Panel data analysis improves the validity and dependability of findings in studies on the profitability of Islamic banking by accounting for bank-specific effects and considering the influence of external economic variables. Ultimately, the research emphasizes the complex relationship between internal bank attributes, such as equity financing, debt financing and bank size, and external macroeconomic factors, such as GDP growth and interest rates, in influencing the profitability of Islamic commercial banks in Indonesia. Improving the comprehension of these elements not only fosters the financial stability and durability of Islamic banks but also bolsters wider economic expansion and development objectives in Indonesia's financial sector.

## 3. Research Methodology

The data used in this study is referred to as Panel data, which is also known as longitudinal data or cross-sectional time-series data. Panel data provides more informative and varied data, with reduced collinearity between variables, and greater degrees of freedom (Park, 2011). Utilizing panel data leads to a higher number of degrees of freedom, hence enhancing the efficiency of estimate (Brooks, 2019). Furthermore, the data for this study is obtained from the DataStream Database and Balance sheets. The dataset consists of a panel of 11 Islamic commercial banks that are based in Indonesia. The study period spans eleven years, from 2012 to 2022. In total, there are 121 observations (where nT is the total number of observations). The study examines the influence of banks' features and macroeconomic variables on the profitability of Islamic commercial banks in Indonesia. It considers both internal factors, such as equity financing, debt financing and banks size, and external factors, such as macroeconomic indicators, such as intertest rate and GDP growth rate. An analysis was conducted on data obtained from banks that provide Islamic banking products and services as part of the Islamic Banking Scheme. The period from 2012 to 2022 has been chosen to obtain the most recent data to evaluate the profitability of Islamic banks in Indonesia. Given that the study centers on the profitability of Islamic commercial banking in Indonesia, secondary data is employed as the method for data collecting. The extraction of secondary data was conducted from the DataStream Database and Balance sheet. In their study on contemporary research methodologies, Creswell and Clark (2018) identified several benefits of using secondary data utilization. One notable advantage is the high level of quality assurance, as the data is consistently verified and updated. The profitability of Islamic commercial banks in Indonesia was assessed via using the Return on Assets (ROA) as proxy to measure the profitability. Return on Assets (ROA) measures the bank management's efficiency in converting assets into net profit.

Figure1: Research framework

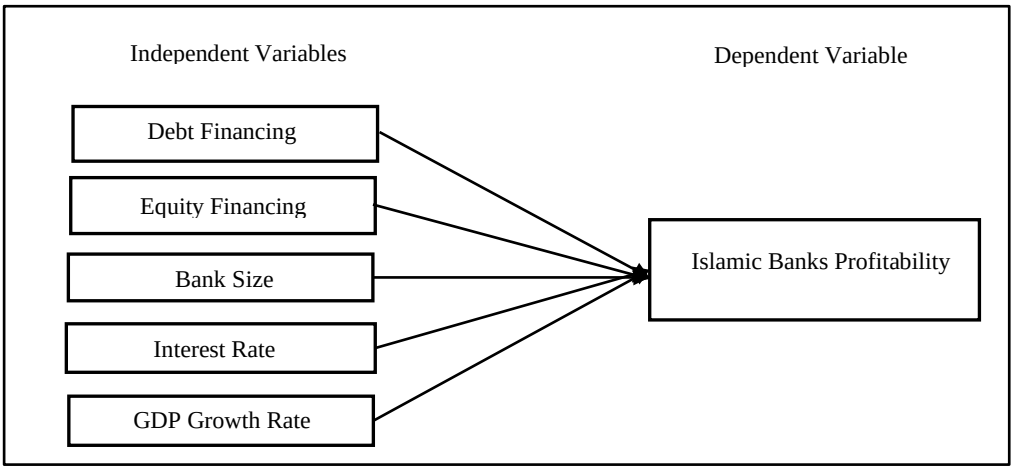

Table 1 below presents the measurements that were used to operationalize the study variables.

Table 1: The measurements of variables applied in this study

| Variable | Measurement | References |
|---|---|---|
| Profitability | ROA= Net Income/ Total Assets | Riaz & Mehar (2013); Hassan &Bashir (2003) |
| Debt Financing | NPLSF = (Debt Funding contracts / Total financing) | Abusharbeh (2014); Al-Shaghdari et al. (2021) |
| Equity Financing | PLSF = (Equity Funding contracts/ Total financing) | Rahayu & Septiarini (2019); Abusharbeh (2014); Al-Shaghdari & Bardai (2020) |
| Bank Size | The Size is measured as the natural logarithms of total assets. | Noman (2015); Rashid & Jabeen (2016); Asadullah (2017); Suppia & Arshad (2019) |
| Interest Rate (IR) | Lending Interest Rate (%) | Rashid & Jabeen (2016); Amzal (2016) |
| GDP Growth Rate | Annual real Gross Domestic Product, growth rate (%) | Amzal (2016); Hamid & Mir (2017); Nagaraju & Boateng (2018) |

The current study employed an econometric model and executed the analytic procedure utilizing random effects models with GLS regression via Stata software. The variables used in the analysis were specified in Table 1. Using the given data set, all data is collected and transferred to a data sheet using the software programs SPSS version 28 and Stata for analysis.

## 4. Results Analysis and Discussion

Table 2: Descriptive statistics

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| Year | 121 | 2022.5 | 3.871504 | 2012 | 2022 |
| Code | 121 | 11 | 5.444978 | 11 | 11 |
| Name | 0 | | | | |
| ROA | 121 | .5974615 | .3360765 | -.85 | 2.71 |
| Bank Size | 121 | 66.42158 | 14.89644 | 36.89 | 87.7 |
| Debt Financing | 121 | 2.114625 | .8771563 | .29 | 5.3 |
| Equity Financing | 121 | 21.46528 | 2.282411 | 14.22 | 21.601 |
| Interest Rate | 121 | 7.162422 | 4.668731 | 10.2 | 121.5 |
| GDP Growth Rate | 121 | 6.049 | 4.461984 | 6.33 | 8.21 |

Sources: STATA result (2024)

The analysis reveals that the average Return on Assets (ROA) for the eleven Indonesian Islamic banks is 0.59 percent, with a standard deviation of 0.336. The maximum recorded return on assets (ROA) is 2.71 percent, and the minimum is -0.85 percent. The mean bank size is 66.42%, with a standard deviation of 14.90. The greatest bank size is 87.70%, while the minimum bank size is 36.89%. The average interest rate for debt financing is 2.11%, with a standard deviation of 0.87. The highest interest rate seen is 5.3%, while the lowest is 0.22%. Equity finance exhibits a mean of 21.46%, a standard deviation of 2.28, a maximum value of 21.60%, and a minimum value of 14.22%. The research variables in Table 2 demonstrate a significant variation, which can be attributed to the inclusion of banks of different sizes in the sample, ranging from recently established institutions to well-established ones. Table 3 displays the correlation matrix used to assess multicollinearity, with the correlation coefficient between independent variables serving as an indicator. Multicollinearity is present when the partial correlation value between independent variables is greater than 0.85 (Gujarati & Porter, 2010; Sutikno et al., 2022). The correlation matrix in Table 3 indicates that there is no strong correlation among the variables (all values are below 0.7). This suggests that there is no issue of multicollinearity among the variables included in this research. In Table 3, the correlation matrix for ROA shows that there is no multicollinearity if the Variance Inflation Factor (VIF) is greater than 1. There is no strong link between any

of the variables, as shown by the VIF values in the correlation matrix (all VIF values are above 1). These findings indicate that the presence of multicollinearity does not pose a substantial problem in this analysis (Hair et al., 2019).

Table 3: Correlation matrix

| Indictors | VIF | 1/VIF |
|---|---|---|
| Equity Financing | 9.43 | 0.096 |
| Debt Financing | 5.33 | 0.1670 |
| Bank Size | 3.99 | 0.21350 |
| Interest Rate | 2.47 | 0.54156 |
| GDP Growth Rate | 1.28 | 0.94356 |
| **Mean VIF** | **4.50** | |

Table 4: Regression results based on random effect model

| | | | | | |
|---|---|---|---|---|---|
| Random-effects GLS regression | | | Number of obs=121 | | |
| Group Variable: Code | | | Number of groups=11 | | |
| R-sq: | | | | | |
| Within= 0.5407 | | | Obs per group: | | |
| Between= 0.5684 | | | Min= 9 | | |
| Overall= 0.5586 | | | Avg= 9.8 | | |
| | | | Max= 11 | | |
| Corr (u_i, x)= 0 (assumed) | | | Wald chi2 (7) = 61.89 | | |
| | | | Prob > chi2= 0.005 | | |
| ROA | Coef. | Std. Err. | z | p> \|z\| | [95% conf. interval] |
| Equity Financing | .00770 | .0032517 | 3.51 | 0.008 | .03518 |
| Debt Financing | -.04025 | .0269413 | -2.13 | 0.284 | .01264 |
| Bank Size | 5.4205 | 4.04e-06 | 2.17 | 0.031 | .00016 |
| Interest Rate | -.0609 | .0047488 | 3.70 | 0.008 | .01415 |
| GDP Growth Rate | .45972 | .1506772 | 3.66 | 0.002 | .72654 |
| Sigma_u | .405642 | | | | |
| Sigma_e | .515604 | (Fraction of variance due to u_i) | | | |
| rho | .774514 | | | | |

Sources: STATA result (2024)

Table 4 displays the regression outcomes for panel data utilizing random effect models and the Generalized Least Squares (GLS) regression model. The model was built using static panel models, which are the standard approaches for modelling panel data. A Chi-square statistical probability of less than 0.005 suggests that the model is typically satisfactory. Moreover, the independent factors in the model accounted for 55.86% of the variance observed in the dependent variables. The remaining 44.14% of the variability could not be explained by the provided criteria, suggesting that other significant factors were not taken into account. The factors of equity financing, bank size, interest rate, and GDP growth rate exhibited statistical significance at a significance level of 0.05 when calculating profitability (ROA). Nevertheless, the metric for debt financing did not yield any noteworthy findings. The main findings of this investigation are summarized in Table 5.

Table 5: Summary of hypothesis testing

| **Hypothesis of the Study** | **P Values** | **Decision** |
|---|---|---|
| Equity Financing -> Profitability | 0.008 | Supported |
| Debt Financing -> Profitability | 0.284 | Not Supported |
| Bank Size -> Profitability | 0.031 | Supported |

| | | |
|---|---|---|
| Interest Rate -> Profitability | 0.008 | Supported |
| GDP Growth Rate -> Profitability | 0.002 | Supported |

*4.1 Results Discussion*

The findings indicated a statistically significant positive association between the Equity Financing parameter and the profitability with (p-value = 0.007). This finding is consistent with the findings of earlier studies, as reported by Kuppusamy and Samudhram (2010), Mawardi et al. (2012), and Zulfiqar et al. (2016). The aforementioned results can be explained by the substantial influence of equity financing (PLS) on the performance of Islamic commercial banks in Indonesia. This is because Islamic commercial banks in Indonesia continue to employ equity financing profit-sharing arrangements, with the proportion of Mudarabah and Masyarakat funding increasing annually. Consequently, this has led to a rise in the profitability of Islamic commercial banks in Indonesia. In addition, Debt financing, the outcome for this variable is negative and lacks statistical significance with (p-value of 0.284). The stated outcome can be explained by the fact that Islamic commercial banks in Indonesia have extensively utilized equity-based financing, particularly in recent years. Another valid rationale is that Debt funding is perceived as analogous to Interest-based funding, and the majority of scholars consider debt financing to be contrary to the fundamental tenets of Islamic principles. Besides, Bank Size is positive and statistically significant, as indicated by with (p-value of 0.031) . This discovery is consistent with the findings of earlier studies, as reported by Petria et al. (2015) and Waemustafa & Sukri (2015). The results can be explained by the substantial influence of Bank Size on the profitability of Islamic commercial banks in Indonesia, which is attributed to superior cost management. Additionally, the study aimed to analyse the influence of external factors, such as interest rate and GDP growth rate, on the profitability of Islamic commercial banks in Indonesia. The impact of GDP growth rate on the profitability of Islamic commercial banks is evident, as indicated by the parameter estimate with a substantial positive effect (p-value = 0.002). This study aligns with the conclusions of Zarrouk et al. (2016) and Amzal (2016), who found that Islamic banks have higher performance in economies characterised by high levels of gross domestic product and investment. Gross Domestic Product (GDP) growth is a measure of the total economic activity in a country. When GDP growth rates are higher, it can stimulate the demand for bank products, resulting in increased profitability and improved financial performance. Furthermore, the suggested model hypothesised that interest rates would have a positive impact on the profitability of Islamic banks, as evidenced it was a statistically significant with (p-value of 0.008). Anbar and Alper (2011) and Al-Shaghdari et al. (2021) have discovered comparable results, suggesting a positive correlation between interest rates and the profitability of Islamic banks. Islamic banks utilise interest rates as a reference point to determine the amount they would charge borrowers and the rewards they will provide to savers. Hassan and Bashir (2003) have highlighted that an elevated real interest rate will lead to a rise in loan interest rates, hence enhancing the profitability of banks.

## 5. Conclusion and Recommendation

As stated above, the current study intended to investigate the impact of banks' characteristics and macroeconomic variables on the profitability of Islamic commercial banks in Indonesia. The research used a model that includes five variables, both internal and external, impacting the profitability of these banks. Notably, the empirical analyses have presented fresh relevant findings towards the significance of the Islamic banking industry on Islamic banks' profitability in Indonesia. The internal factors (i.e., Equity Financing and Bank Size) are significant determinants of Islamic commercial banks' profitability, ensuring the success and increase in the profitability of these banks. On the other hand, Debt Financing did not show a significant effect on profitability. Additionally, GDP growth rate and interest rate emerged as key external factors influencing the profitability of Islamic commercial banks in Indonesia. The findings of this study have several important implications for policymakers, bank managers, and investors. Policymakers can use these insights to create a supportive regulatory environment that enhances the stability and growth of the Islamic banking sector. For bank managers, understanding the significant internal and external factors can aid in developing strategies to optimize operational efficiency and profitability. Investors can benefit from this research by making informed decisions based on a clearer understanding of the profitability drivers within the Islamic banking sector. Future research could expand on this study by incorporating additional variables that may influence the profitability of Islamic banks, such as technological advancements, customer satisfaction, and service quality. Longitudinal studies could provide deeper insights into how these factors impact profitability over time. Comparative studies

between Islamic and conventional banks within the same economic context would also be valuable, offering a more nuanced understanding of the unique challenges and advantages faced by Islamic banks. This study is not without its limitations. Firstly, it focuses solely on Islamic commercial banks in Indonesia, which may limit the generalizability of the findings to other countries or regions. Secondly, the study uses a specific set of internal and external variables, which, while comprehensive, may not capture all the factors affecting profitability. Lastly, the reliance on available data may not fully reflect the dynamic and evolving nature of the banking sector. In conclusion, this study provides significant insights into the factors influencing the profitability of Indonesian Islamic commercial banks. By addressing the identified gaps and considering the implications, future research can further contribute to the sustainable development of Islamic finance in Indonesia, fostering economic stability and growth.

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