




Determinants of Profitability in State-Owned Islamic Banks: Evidence from Indonesia, Malaysia, and Brunei Darussalam

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| Article History: | Abstract |
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| <p>Corresponding Author: Fathan Munim fathanhaidary14@gmail.com m</p> <p>Submitted: February 26rd, 2026</p> <p>Revised: April 16rd, 2026</p> <p>Accepted: April 18rd, 2026</p> <p>Published: May 14rd, 2026</p> <p>Copyright: ©2026. Fathan Munim, Firman</p>  <p>This article is licensed under the Creative Commons Attribution-Share Alike 4.0 International License. http://creativecommons.org/licenses/by-sa/4.0/</p> | <p>Objective: This study aims to examine the factors that determine the profitability of state Islamic banks (Indonesia, Malaysia, and Brunei Darussalam).</p> <p>Method: This research uses an associative quantitative approach. The data used comes from State-Owned Islamic Banks in 3 countries (Indonesia, Malaysia, and Brunei Darussalam) from 2015 to 2024, sourced from Bank Syariah Indonesia (BSI), Bank Islam Brunei Darussalam (BIBD), and Bank Islam Malaysia Berhad (BIMB). The data were analyzed using panel data quantile regression in EViews.</p> <p>Result: This study found that NPF has a negative and significant effect on the ROE of state-owned Islamic banks, whereas CIR, CAR, and FDR have positive and significant effects on the ROE of state-owned Islamic banks. The second result shows that ROE, NPF, and CIR have a negative and significant effect on ROA, while CAR and FDR variables have a positive and significant effect on ROA. Based on the results of the quantile and Sobel regression tests, it is clear that NPF, CIR, CAR, and FDR variables influence the ROA of state-owned Islamic banks, either directly or through ROE.</p> <p>Implication: This study emphasizes the need to strengthen profitability risk-based policies among institutions in Indonesia, Malaysia, and Brunei Darussalam to enhance the competitiveness of state-owned sharia banks in the region.</p> <p>Originality or Novelty: The originality of this research lies in using Return on Equity (ROE) as a mediating variable and, at the same time, employing panel data quantile regression, where ROE mediates the relationship between the profitability of state-owned Islamic banks and Return on Assets (ROA).</p> <p>Keywords: Panel Data Quantile Regression; ROA; ROE; State-Owned Islamic Banks.</p> |

Introduction

Banks, as intermediary institutions, play a strategic role in channeling funds from surplus to deficit sectors, thereby reducing information asymmetry and transaction costs, and promoting efficient capital allocation in the economy (Konstantakopoulou, 2023). From an Islamic economic perspective, this function focuses not only on efficiency but also on the principles of justice (*adl*), benefit (*maslahah*), and the prohibition of usury (*riba*). Therefore, intermediation

activities must generate sustainable added value for the real sector. With increasing demand for Sharia-based financial systems (Rehman et al., 2021), the global Islamic banking industry is showing significant growth, with assets reaching over USD 5 trillion in 2024 and projected to continue growing, including in the ASEAN region, dominated by Malaysia, Indonesia, and Brunei Darussalam (Adinata, 2025).

In Indonesia, Malaysia, and Brunei Darussalam, which represent cross-border economic connectivity, state-owned Islamic banks show an increasing trend in assets and profitability, as reflected in ROA, ROE, and NPM indicators. (Alkindi & Utami, 2025). However, this growth does not fully reflect the ideal function of Islamic banking. Empirically, there are still performance disparities, dominance by large banks, and challenges to operational efficiency and asset quality that could disrupt long-term stability. (Aryandhana et al., 2024; Islamiyah et al., 2023; Yaseen & Widarjono, 2024). Furthermore, differences in regulatory structures among Indonesia, Malaysia, and Brunei Darussalam contribute to variation in bank performance. (P. D. Anggraini et al., 2024; Aryandhana et al., 2024; Muna et al., 2023).

The main problem with this research is the lack of a comprehensive explanation of the transmission mechanism linking financial performance to profitability. Previous studies have reported inconsistent findings regarding the effects of CAR, FDR, CIR, and NPF on ROA and ROE. (Oktasari et al., 2024; Rehman et al., 2021; Sitnicka, 2025; Sitompul & Nasution, 2022; Soen et al., 2022; Wiryani & Pratiwi, 2019). Furthermore, most studies are partial, focusing on a single country and positioning ROA or ROE as the direct dependent variable, thereby failing to capture the dynamic relationships among the variables.

Thus, a more acute research gap exists: the lack of approaches capable of simultaneously explaining the role of internal variables within a cross-country framework and the mediating mechanisms of profitability, particularly in Indonesia, Malaysia, and Brunei Darussalam as a regional economic integration area. Therefore, this study offers novelty with the integration of an Islamic economic perspective and empirical approach through the use of ROE as an intervening variable in analyzing the influence of NPF, CAR, CIR, and FDR on ROA of state-owned Islamic banks in Indonesia, Malaysia, and Brunei Darussalam, thus providing a more comprehensive understanding of profitability dynamics in different regulatory contexts and market structures.

Although numerous studies have examined the financial performance of Islamic banks, gaps remain that remain unaddressed. First, empirical results show inconsistent effects of financial ratios such as the FDR, NPF, CIR, and CAR on profitability (ROA and ROE). Second, most studies focus on a single country, thus failing to capture the dynamics across the entire spectrum, particularly for state-owned Islamic banks. Third, previous studies generally treat ROA and ROE as direct dependent variables, thereby failing to explain the transmission mechanisms of financial performance fully. Furthermore, a significant gap exists in our understanding of the understudied context of the Borneo region. This region is not only geographically unique but also serves as a space for regional economic integration among Indonesia, Malaysia, and Brunei Darussalam, which have differing market structures, levels of financial inclusion, and regulatory frameworks. The lack of cross-country comparative studies in this region has led to a limited understanding of how these differences influence Islamic bank performance and profitability. Therefore, this study offers novelty by comprehensively analyzing state-owned Islamic banks in the region, using ROE

as an intervening variable, thereby explaining the transition mechanism from risk, efficiency, and intermediation to profitability in greater depth across countries.

Literature Review

Non-Performing Financing (NPF) on Return on Equity (ROE) of State-Owned Islamic Banks

This study is based on the Financial Intermediation Theory, the Risk-Reward Exchange Theory, and the Agency Theory to explain the relationship between Non-Performing Financing (NPF) and Return on Equity (ROE) in Islamic banks. Financial intermediation is determined not only by the amount of credit disbursed but also by the quality of the disbursed financing, as credit quality reflects the risk of debtor default and directly affects the stability and efficiency of banking intermediation. (Cevik & Kara, 2026; Kithandi, 2025). A high NPF reflects a decline in the quality of financing and inefficient fund distribution, both of which affect bank revenue. The risk-reward exchange theory holds that increasing financing risk reduces shareholders' expected returns; therefore, NPF is seen as a risk indicator that can depress ROE. Meanwhile, agency theory emphasizes that weak financial risk management can reflect governance problems that ultimately reduce shareholder value.

Conceptually, NPF reflects the level of non-performing financing, which increases provisioning costs and reduces profit-sharing income, thereby reducing net profit. Conversely, ROE reflects management effectiveness in generating returns on shareholders' capital. Therefore, an increase in the NPF is logically expected to decrease the ROE of Islamic banks. This research's conceptual model posits NPF as an independent variable influencing ROE, the dependent variable, with a negative relationship. Previous empirical findings generally support a negative relationship between NPF and ROE, although the level of significance varies. (Lukman & Rahma, 2021), (Daulay et al., 2025), (Handayani et al., 2024), (Firdaus & Budianto, 2024). This variation in results suggests that the effect of NPF on ROE may be influenced by other factors such as operational efficiency, bank size, and economic conditions.

CIR on Return on Equity (ROE) of State-Owned Sharia Banks

This study uses Financial Intermediation Theory, Efficient Market Theory, and Agency Theory to explain the relationship between operational efficiency and the profitability of Islamic banks. Intermediation theory posits that banks efficiently raise funds and distribute credit, resulting in low operating costs that increase net income and profitability. Efficient Market Theory states that operational cost efficiency reflects management effectiveness in maximizing returns on capital. Meanwhile, agency theory asserts that management that effectively controls operating costs will reduce conflicts of interest between shareholders and managers, positively impacting ROE.

The ROE ratio indicates a bank's efficiency in managing operating costs relative to its operating income. A high ROE ratio indicates cost inefficiency, which can erode operating profit and suppress the bank's ability to generate return on capital (ROE). ROE itself is a key indicator of profitability, demonstrating a bank's effectiveness in maximizing returns for shareholders. Various empirical studies have shown a negative relationship between ROE and bank profitability. For example, research by (Murtiningsih & Tohirin, 2023) found that BOPO significantly impacted the ROE of Islamic banks in Indonesia over the long term. A quantitative

study at Bank NTB Syariah also reported that BOPO had a significant impact on ROE following its conversion to an Islamic bank (Masrianto et al., 2024). Research on 15 Indonesian Islamic banks showed that BOPO impacted ROE both partially and simultaneously (Handayani et al., 2024). Other research on conventional and Islamic banking generally reports that increasing BOPO (i.e., decreasing operational efficiency) tends to reduce profitability (Setiawan & Budiwitjaksono, 2024).

Capital Adequacy Ratio (CAR) to Return on Equity (ROE)

Financial Intermediation Theory, Risk-Return Trade-off Theory, and Capital Buffer Theory are used to explain the effect of the Capital Adequacy Ratio (CAR) on Return on Equity (ROE) in Islamic banking. Financial Intermediation Theory suggests that banks with sufficient capital can optimally perform their intermediation function by absorbing credit and operational risks and supporting the expansion of productive assets. The risk-return trade-off theory states that increasing capital affects the cost of capital, which in turn affects the rate of return on equity. (Al-sharkas & Al-sharkas, 2022), (Andersen & Juelsrud, 2024), (Jha & Agrawal, 2022). Meanwhile, the Capital Buffer Theory (Basel III) assumes that banks with strong capital buffers will be more stable and increase shareholder confidence in the long term. (Mardoyan & Saegsyang A, 2025), (Connect, 2019), (Obadire & Moyo, 2022), (Hessou & Lai, 2017).

Conceptually, CAR reflects a bank's ability to absorb risk and maintain financial stability, while ROE reflects the effectiveness of generating returns on available capital. (Al-sharkas & Al-sharkas, 2022), (Pratomo et al., 2025), (Tran, 2024), (Biswas & Mondal, 2023), (Ahmad et al., 2025). Adequate CAR is expected to positively impact ROE by increasing profitability and reducing risk costs. (Murtiningsih & Tohirin, 2023), (Anggari & Dana, 2020). This research's conceptual model positions CAR as an independent variable that influences ROE, the dependent variable, with the following hypothesis:

Financing to Deposit Ratio (FDR) to Return on Equity (ROE) of State-Owned Islamic Banks

This research is based on Financial Intermediation Theory, Risk-Return Trade-off Theory, and Efficiency Theory to explain the effect of the Financing to Deposit Ratio (FDR) and Cost to Income Ratio (CIR) on the Return on Equity (ROE) of Islamic banks. (Murtiningsih & Tohirin, 2023), (Arkaan et al., 2024), (Husen et al., 2025). Financial Intermediation Theory holds that banks can optimally perform their intermediation function if third-party fund management and operational efficiency are at healthy levels, as reflected in the FDR and CIR ratios. The risk-return trade-off theory asserts that increased risk due to financing expansion (high FDR) or cost inefficiency (high CIR) will impact shareholder returns. Meanwhile, Efficiency Theory emphasizes that operational efficiency, as measured by the CIR, is a key determinant of bank profitability. (Buchory, 2025), (Rizky et al., 2025), (Izza & Putri, 2024), (Bashir & Gorton, 2023), (Maulida, 2025).

Conceptually, a high FDR reflects the optimization of fund allocation toward productive financing, which can increase ROE, while a low CIR indicates greater cost efficiency, thereby boosting profitability. This research's conceptual model posits FDR and CIR as independent variables that influence ROE. Empirically, findings by (Murtiningsih & Tohirin, 2023), (Almer & Hidayah, 2023), (Al-sharkas & Al-sharkas, 2022), and the IECON study indicate that FDR has

a positive effect on ROE in Islamic banks. Furthermore, Al-Sharkas and Al-Sharkas reported in the Journal of Governance and Regulation (virtusinterpress.org) that CIR plays a significant role in explaining variations in bank profitability.

Return on Equity (ROE) to Return on Assets (ROA)

Banking profitability theory explains that Return on Equity (ROE) reflects a bank's ability to generate profits for shareholders. At the same time, Return on Assets (ROA) indicates the efficiency of asset utilization in generating profits. Within the DuPont analysis framework, ROE is theoretically related to ROA through leverage, so changes in ROE can affect ROA, an indicator of a bank's operational efficiency. (Munteanu & Ilie, 2022).

Recent empirical studies have shown a diverse range of relationships. Research by (Munteanu & Ilie, 2022) found that ROE and ROA are key interrelated indicators in assessing performance. Increased equity profitability reflects management effectiveness, which also impacts asset efficiency. However, other studies have found inconsistent results, such as research by (Syafaat & Timuriana, 2025), where the quality of financing influences ROA and ROE, so the relationship is not always direct. Furthermore, recent research by (Suryawan, 2024) found that ROE actually hurt profit performance, while ROA was insignificant. Similar results were also found by (Nabillah & Tristanto, 2025), stating that ROE had no significant effect, while ROA had a positive effect on profitability. These findings indicate a research gap. First, the causal relationship between ROE and ROA remains inconsistent (positive, negative, or insignificant). Second, most studies treat ROA and ROE as separate independent variables rather than analyzing their direct relationship. Third, recent research emphasizes the role of moderating variables such as credit risk and financing quality, which have not been widely integrated into models. Thus, further research is needed to examine the effect of ROE on ROA, with bank internal factors as control variables.

The effect of Non-Performing Financing (NPF) on Return on Assets (ROA) is mediated by Return on Equity (ROE)

The higher the NPF value, the greater its impact on the bank's ROA, which ultimately impacts financing distribution activities. ROE is needed to determine how efficiently management uses shareholder funds to generate profits (Munteanu & Ilie, 2022). Furthermore, ROE is a key indicator for assessing probability, reflecting the rate of return to shareholders on bank investments. (Sun & Rizaldy, 2023). NPF theoretically negatively impacts bank profitability because it can increase credit risk and reduce revenue (Wijaya et al., 2025). Empirically, NPF significantly affects ROA, but other studies have found no significant effect, suggesting an indirect mechanism. (Hamza et al., 2025). On the other hand, NPF has also been shown to influence ROE, an indicator of equity profitability, and ROE is closely related to ROA. (Rachmania & Muizana, 2024). Therefore, ROE can act as a mediating variable in explaining the effect of NPF on ROA.

The effect of CIR on Return on Assets (ROA) is mediated by Return on Equity (ROE).

The higher the BOPO or CIR, the greater the operational costs, thereby depressing profits and impacting ROE and ROA. Within the financial performance transmission framework, ROE

serves as a mediating variable, reflecting a bank's ability to manage equity before generating asset efficiency (ROA). Recent empirical studies have shown that BOPO/CIR significantly influences ROA. Research by (Fayza et al., 2025), found that BOPO and CIR significantly influence ROA in Islamic banks. Furthermore, a study by (Chairunisa & Isyanto, 2025), showed that BOPO had a significant negative effect on ROA and ROE, indicating an indirect pathway through ROE. Research by (Widia et al., 2025) demonstrated that BOPO can influence ROA through mediating variables (NIM and ROE), indicating that the relationship between efficiency and profitability is not always direct. This is supported by a study by (Pangeran, 2025), which found that BOPO (Board of Ownership and Assets) can act as a mediator in the relationship between financial variables and ROA. However, there are research gaps. First, most studies still focus on the direct effect of BOPO/CIR on ROA. Second, mediation studies often use variables such as NIM or BOPO itself, rather than ROE as the primary mediator. Third, empirical results still show inconsistencies in the effect of BOPO/CIR on profitability.

The Effect of CAR on Return on Assets (ROA) is Mediated by Return on Equity (ROE).

The effect of CAR on Return on Assets (ROA) is not always direct, but can be mediated through Return on Equity (ROE), an indicator of capital utilization effectiveness. ROE acts as a mediating variable because it shows how capital adequacy translates into shareholder returns before affecting asset efficiency. Recent empirical studies have shown that CAR affects ROA. Research by (Sari & Fauzan, 2025) found that CAR significantly influenced ROA in the banking sector during 2021–2023. Furthermore, research (Download PDF) shows that CAR significantly influences ROA, underscoring the importance of capital adequacy in increasing bank profitability. However, mediation approaches in recent literature have yielded mixed results. A study by (Yubileus et al., 2025) found that profitability (ROA) mediates the influence of internal factors on ROE, but CAR's role in this mechanism is not always significant. This suggests that the relationship between capital and profitability is indirect and complex. Furthermore, research by (Fayza et al., 2025) shows that CAR can influence ROA through other mediating variables such as NIM, indicating that the indirect pathway is more dominant than the direct pathway.

The effect of the Financing to Deposit Ratio (FDR) on Return on Assets (ROA) is mediated by Return on Equity (ROE).

ROE acts as a mediating variable because it reflects how liquidity and the distribution of financing translate into profits for shareholders before affecting asset efficiency. Recent empirical studies have shown that FDR influences bank profitability. Research by (Almer & Hidayah, 2023), found that FDR and ROE have a significant positive effect on Islamic banking profitability. Furthermore, research by (Mulyawisdawati & Inayati, 2025) showed that FDR has a significant positive effect on ROA. However, other studies found different results, with FDR having no significant effect on ROA (Rahmawati & Pratiwi, 2025). The relationship between ROE and ROA has also been demonstrated in research (Khairi et al., 2024), which shows that ROE influences ROA as an indicator of bank profitability. This finding indicates an indirect pathway from FDR to ROA through ROE. However, there is a research gap. First, research results remain inconsistent regarding the effect of FDR on ROA. Second, most studies examine only the direct effect, without accounting for mediating variables. Third, existing mediation research

predominantly uses CAR, thus limiting the role of ROE as a mediator in the relationship between FDR and ROA.

H: NPF hurts the ROE of state-owned Islamic banks.

H: CIR has a negative impact on the ROE of state-owned Islamic banks.

H3: Capital Adequacy Ratio (CAR) has a positive effect on the Return on Equity (ROE) of state-owned Islamic Banks.

H4: The Financing to Deposit Ratio (FDR) has a positive impact on the Return on Equity (ROE) of state-owned Islamic banks.

H5: Return on Equity (ROE) has a positive effect on Return on Assets (ROA) of State-Owned Islamic Banks

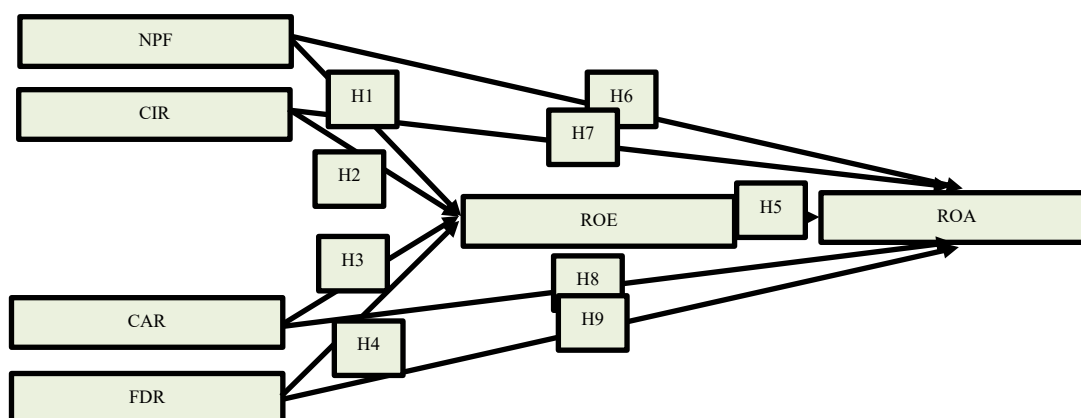
H6: Return on Assets (ROE) can mediate the effect of non-performing financing on ROE.

H7: Return on Assets (ROE) can mediate the effect of CIR on ROA.

H8: Return on Assets (ROE) can mediate the effect of the Capital Adequacy Ratio (CAR) on Return on Assets.

H9: Return on Assets (ROE) can mediate the effect of Financing to Deposit Ratio (FDR) on Return on Assets

Figure 1. Conceptual Framework Model



Research Methodology

This research was conducted quantitatively, involving the systematic analysis of a symptom or phenomenon through data collection and measurement using statistical or computational methods. Meanwhile, the media approach aims to help understand "how and why an effect occurs" in a causal relationship, so that media variables are used to understand the direct and indirect paths of the relationship of variables (Cheng et al., 2023), using panel data that combines cross-sectoral data (banks) from three countries (Indonesia, Malaysia, and Brunei Darussalam) in a quarterly format from 2015 to 2024. Panel data are used to obtain large amounts of data, provide broader observations, and reduce data collinearity (Al-Sheik et al., 2024; Juliana et al., 2025). This study uses secondary data from publications of state-owned Islamic banks, including Bank Syariah Indonesia (BSI), Bank Islam Malaysia Berhad (BIMB), and Bank Islam Brunei Darussalam (BIBD). It includes ROE (Return on Equity) data. Equity) as a mediating variable, ROA (Return on Equity) as a mediating variable, ROA (Return on Equity) Assets) as a dependent

variable, CAR (Capital Adequacy Ratio), NPF (Non-Performing Financing), FDR (Financing to Deposit Ratio), and CIR (Cost to Income Ratio) as independent variables from 2015 to 2024.

Table. 1
Research Data

| Variable | Unit | Source |
|----------------------------------|------------|-----------------|
| ROA (Return on Assets) | Persen (%) | BSI, BIMB, BIBD |
| ROE (Return on Equity) | Persen (%) | BSI, BIMB, BIBD |
| NPF (Non-Performing Financing) | Persen (%) | BSI, BIMB, BIBD |
| CIR (Cost to Income Ratio) | Persen (%) | BSI, BIMB, BIBD |
| CAR (Capital Adequacy Ratio) | Persen (%) | BSI, BIMB, BIBD |
| FDR (Financing to Deposit Ratio) | Persen (%) | BSI, BIMB, BIBD |

The quantile regression method used in this study, also known as quantile regression for panel data (QRPD), is an analytical technique that allows testing the impact of independent variables on dependent variables across different distributional tails. The quantile values selected in this study include low quantiles (τ : 0.05), medium (τ : 0.25 and τ : 0.50), high (τ : 0.75 and τ : 0.90). There are several reasons for using QRPD in this study, including, the nonparametric quantile regression model is the best regression, in overcoming difficulties with conventional errors, in addition to its advantages are more resistant to data outliers and less range against them, more consistent and can be justified in this study. In addition, the reason strengthens the researcher's use of quantile regression. There are several reasons for this research model using quantile regression, namely, the research variables in the dependent variable are heterogeneous and tend to be non-normal (Chernozhukov et al., 2019), where the three data are non-normal, the classical linear regression approach does not provide clear results for research on the relationship between the two variables, so quantile regression is a method that is appropriate for model estimation with data that tends to be grouped in its distribution (Koenker, 2017). Therefore, selecting the quantile regression model can yield more appropriate decision-making, because quantile regression is more robust to outlier observations than OLS or panel data regression, and it varies in its influence across quantiles. (Asmare & Begashaw, 2018; Kanoujiya et al., 2023). The quantile regression model has several advantages, namely that it can better handle endogeneity and requires fewer assumptions than the OLS model. (Abrevaya & Dahl, 2022; Jiang et al., 2020; Powell, 2022; Wooldridge, 2019). Therefore, the quantile regression equation is adopted from (Linggadjaya et al., 2024).

To estimate the determinants of the profitability of state-owned Islamic banks, the following formula is used:

$$ROE_{it}(\tau) = \alpha(\tau) + \beta_1(\tau)NPF_{it} + \beta_2(\tau)CIR_{it} + \beta_3(\tau)CAR_{it} + \beta_4(\tau)FDR_{it} + \epsilon_{it}$$

$$ROA_{it}(\tau) = \alpha(\tau) + \beta_1(\tau)NPF_{it} + \beta_2(\tau)CIR_{it} + \beta_3(\tau)CAR_{it} + \beta_4(\tau)FDR_{it} + \beta_5(\tau)ROE_{it} + \epsilon_{it}$$

Where:

τ = Cuantil

β = Koefisien regresi

α = Konstanta

ϵ = Error

i = Bank

t = Year

Results and Discussion

Descriptive statistical tests show that the minimum ROA value is 0.78%, which can illustrate that in periods of low profitability there are challenges in managing assets effectively, which means that there are variations in the ability of Islamic banks to generate profits, which depends on certain periods and conditions, while with a maximum value of 2.50% means that in this condition the bank has the highest profitability value, so that the higher the ROA, the more effective the bank is in converting assets into profits. In comparison, the average is 1.48%, which suggests that an ROA of 1-2% is considered normal, while values above 2% are generally considered quite strong.

ROE has a minimum value of -46.9%, this negative value can be interpreted that in that period Islamic banks experienced significant losses on their own capital, negative ROE is usually associated with pressure on financing quality, increased operational costs, or external shocks that affect profitability, with a maximum value of 376.6%, meaning that high values are often caused by a relatively small equity base or high leverage, theoretically ROE is indeed sensitive to capital structure, the smaller the equity compared to total assets, the greater the potential for ROE to soar and the average is 46.5%, meaning that in the banking industry the ROE value of 15-20% is considered good, so the figure of 46.5% indicates that the rate of return on capital is very high. Still, it also needs to be analyzed together with capital structure and risk.

NPF has a minimum value of 0.474%, meaning that during periods of lowest performance, the net profit generated by Islamic banks is only 0.474%. This also reflects pressure from operational costs, financing risks, or efficiency that is not yet optimal. While for the maximum value is 3.40%, which means that in the best conditions, Islamic banks can generate a fairly high net profit, which reflects the effectiveness of asset management and optimal intermediation strategies and an average of 1.66%, which means that in general the level of profitability of Islamic banks is at a moderate and stable level during the research period, in terms of the ability of Islamic banks to manage risks and maintain a balance between income and operational costs.

Table. 2
Descriptive Statistics Test Results

| | ROA | ROE | NPF | FDR | CIR | CAR |
|--------------|----------|-----------|----------|----------|----------|----------|
| Mean | 1.485000 | 46.53600 | 1.669000 | 79.59300 | 83.27200 | 19.41900 |
| Median | 1.401250 | 15.46953 | 1.282031 | 80.35594 | 84.88938 | 20.15828 |
| Maximum | 2.500312 | 376.4494 | 3.403125 | 87.43750 | 92.63438 | 22.39469 |
| Minimum | 0.784375 | -46.91250 | 0.474688 | 72.70281 | 69.79094 | 12.57813 |
| Jarque-Bera | 11.01173 | 227.0013 | 14.91427 | 6.657684 | 12.14452 | 25.89987 |
| Probability | 0.004063 | 0.000000 | 0.000577 | 0.035835 | 0.002306 | 0.000002 |
| Observations | 120 | 120 | 120 | 120 | 120 | 120 |

Source: Author's processing, 2025

The FDR reflects the extent to which Islamic banks channel third-party funds to customers through financing, with a minimum value of 72.7%, a maximum value of 87.4%, and an average of 79.5%. This means that Islamic banks channel most of their third-party funds for financing without squeezing liquidity. The FDR is a measure of the efficiency of bank intermediation and liquidity. A moderate-to-high ratio can indicate the productive use of funds to generate higher-margin income without triggering significant liquidity risks, especially in the context of Islamic banks, which have different structures and risk profiles than conventional banks. Therefore, the FDR reflects the ability of Islamic banks to utilize third-party funds and contribute to overall financial performance. (Syafaat & Timuriana, 2025).

The CIR has a minimum value of 69.7%, a maximum value of 92.6%, and an average of 83.2%. In practice, a high CIR indicates that a large portion of the bank's revenue is absorbed by operational costs, leaving relatively little for profitability. An increase in the CIR tends to negatively impact a bank's financial performance, particularly profitability indicators such as ROA or ROE, as it indicates decreased operational efficiency. (T. F. Ayinuola & Gumel, 2023). Therefore, bank management's efforts to reduce operational costs relative to revenue are a strategy to improve efficiency and long-term performance.

The CAR has a minimum of 12.5%, a maximum of 22.3%, and an average of 19.4%. In general, Islamic banks have capital well above the minimum requirements. International regulations, thus better absorbing risks and potential losses. This contributes to the bank's stability and resilience against external and internal risks and reflects prudent capital management practices amid fluctuating economic conditions. (Tran, 2024), (Aziz et al., 2025).

Table. 4
Quantile Regression Equation 1

| Variable | $\tau = 0.05$ | $\tau = 0.25$ | $\tau = 0.50$ | $\tau = 0.75$ | $\tau = 0.90$ |
|---------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| NPF | -158.7765 (0,0150) | -87.70003 (0.0483) | -311.2103 (0.0000) | -290.0277 (0.0000) | -275.7065 (0.0000) |
| CIR | 26.19594 (0.0223) | 14.04201 (0.0746) | 55.02458 (0.0000) | 49.69147 (0.0000) | 47.46221 (0.0000) |
| CAR | 29.39207 (0.0201) | 18.68166 (0.1084) | 61.76271 (0.0000) | 62.19429 (0.0000) | 56.78085 (0.0000) |
| FDR | 17.88208 (0.0143) | 12.42083 (0.0494) | 44.89639 (0.0000) | 44.03570 (0.0000) | 44.81416 (0.0000) |
| C | -3918.858 (0.0188) | -2366.754 (0.0690) | -8776.103 (0.0000) | -8285.874 (0.0000) | -8067.699 (0.0000) |
| Pseudo R-squared | 0.397371 | 0.125760 | 0.165580 | 0.518259 | 0.840968 |
| Prob(Quasi-LR stat) | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

Source: Author's processing, 2025

The quantile regression results in Table 4 reveal the differences in the influence of variables on NPF, CIR, CAR, and FDR. This can be seen from the value of τ (quantile) for ROE, across the low (τ : 0.05), medium (τ : 0.25 and τ : 0.50), and high (τ : 0.75 and τ : 0.90) quantiles.

$$\text{ROE } \tau: 0.05 = -3918.858 - 158.7765 + 26.19594 + 29.39207 + 17.88208$$

$$\text{ROE } \tau: 0.25 = -2366.754 - 87.70003 + 14.04201 + 18.68166 + 12.42083$$

$$\text{ROE } \tau: 0.50 = -8776.103 - 311.2103 + 55.02458 + 61.76271 + 44.89639$$

$$\text{ROE } \tau: 0.75 = -8285.874 - 290.0277 + 49.69147 + 62.19429 + 44.03570$$

$$\text{ROE } \tau: 0.90 = -8067.699 - 275.7065 + 47.46221 + 56.78085 + 44.81416$$

The Effect of NPF (Non-Performing Financing) on ROE (Return on Equity)

Non-Performing Loan (NPL), based on output, has a negative and significant effect at low (τ : 0.05), medium (τ : 0.25 and τ : 0.50), and high (τ : 0.75 and τ : 0.90) quantiles on Return on Equity (ROE) of state-owned Islamic banks in Indonesia, Malaysia, and Brunei Darussalam. This result is consistent with several studies that found that the non-performing loan (NPL) ratio has a significant negative effect on ROE, stating that high credit risk consistently reduces bank financial performance (Amoa et al., 2025; Çollaku & Aliu, 2021; Ngo & Trinh, 2025; Nguyen, 2023). Based on these results, an increase in NPF can reduce the ROE of state-owned Islamic banks in Indonesia, Malaysia, and Brunei Darussalam. This value has been negative for the past

10 years, with a significance level below 0.05. This indicates that rising financing problems divert a portion of bank revenue toward building loss reserves, reducing the net income available to shareholders. Because Return on Equity (ROE) is calculated using net income relative to equity, an increase in NPF directly affects profit margins and suppresses the capital's ability to generate profits. This aligns with the intermediary function of banks, which requires good asset quality for capital to be used productively (Barakat et al., 2024; Nguyen, 2023).

Theoretically, this finding is supported by credit risk theory, which holds that deteriorating portfolio financing quality reflects weak risk management and negatively affects bank profitability. (Chakraborty, 2023). Non-performing loans pose a challenge affecting capital performance across varying levels of profitability. Therefore, strengthening risk management for financing is key to maintaining the stability and competitiveness of Islamic banks. (Abusharbeh, 2014; Khofifah et al., 2026; Muthmainnah et al., 2024; Salsabilla & Jaya, 2024). Therefore, the decline in Return on Equity (ROE) of state-owned Islamic banks in Indonesia, Malaysia, and Brunei Darussalam can be attributed to high, or even uneven, levels of Non-Performing Loans (NPLs) in those countries, which prevent Islamic banks from generating optimal profits.

The Effect of CIR (Cost-to-Income Ratio) on ROE (Return on Equity)

The Cost-to-Income Ratio (CIR) has a positive and significant effect on the middle and high quantiles, but is insignificant at the 0.25 quantile, while the remaining quantiles are significant. An increase in CIR increases ROE among state-owned Islamic banks in Indonesia, Malaysia, and Brunei Darussalam. This research aligns with several studies that found efficiency variables, such as the cost-to-income ratio, are important determinants of banking profitability models, including ROE, suggesting that increased operational efficiency can contribute to bank profitability. (Al-sharkas & Al-sharkas, 2022). In the context of Islamic banks, these results imply that a cost-investment approach to expanding the revenue base and improving Islamic services can strengthen bank capital profitability, rather than simply being a cost burden. (Li et al., 2021). In summary, these findings are consistent with the theory of operational efficiency and bank effectiveness, which states that banks with a cost structure that reflects high revenue output can maximize capital utilization and operating income, a condition that ultimately has a positive impact on profitability indicators such as ROE. (Sany & Lata, 2025; Susanto et al., 2024).

Based on these results, an increase in the Cost-to-Income Ratio (CIR) can increase the Return on Equity (ROE) of state-owned Islamic banks in Indonesia, Malaysia, and Brunei Darussalam. Islamic banks that successfully reduce operating costs can generate higher net income relative to equity. (Almazari, 2017; Endrajati & Anggraeni, 2025; Kusuma & Budhidharma, 2025a; Nguyen, 2023). Bank operational efficiency occurs when increases in costs associated with expanding services, technology, or diversifying Islamic products generate faster revenue growth than increases in costs, thereby increasing profit margins and ultimately strengthening ROE. (Chao et al., 2024; Molla et al., 2025; Nisar et al., 2018; Susanto et al., 2024; Tarawneh et al., 2024). Thus, the high ability of banks to generate profits (equity) of state-owned Islamic banks in Indonesia, Malaysia and Brunei Darussalam can be associated with increased operational cost efficiency so that banks can generate high profits.

The Effect of CAR (Capital Adequacy Ratio) on ROE (Return on Equity)

The Capital Adequacy Ratio (CAR) has a positive and significant effect on the Return on Equity (ROE) of state-owned Islamic banks in Indonesia, Malaysia, and Brunei Darussalam at the low, medium, and high quantiles, with only a non-significant value at the 0.25 quantile. This

finding is consistent with the findings of Islamic banks in Bangladesh that CAR has a positive and significant effect on ROE (Biswas & Mondal, 2023). Several studies have also found similar findings, showing that increasing CAR reduces ROE and overall bank financial performance (Abdulai & Umar, 2024; Al-sharkas & Al-sharkas, 2022; Jha & Agrawal, 2022).

Based on these results, increasing CAR can improve ROE in state-owned Islamic banks in Indonesia, Malaysia, and Brunei Darussalam. The Capital Adequacy Ratio (CAR) to Return on Equity (ROE) economically indicates that Islamic banks with stronger capital have a greater capacity to absorb financing risks, maintain operational stability, and channel funds productively, thereby increasing net profit relative to equity, in the theory of bank capital and risk management, which requires that capital adequacy serves as a risk buffer and a foundation for sustainable financing expansion. However, losses are insignificant at the lower quantiles, indicating that low-performing banks are unable to optimize capital to generate profits. Thus, the increase in ROE of state-owned Islamic banks in Indonesia, Malaysia, and Brunei Darussalam can be attributed to the banks' increased ability to adequately bear the risk of their assets. Strengthening the capital structure is not only important for regulatory compliance but also a strategy in improving capital efficiency and competitiveness of state-owned Islamic banks in Indonesia, Malaysia, and Brunei Darussalam.

The Effect of FDR (Financing to Deposit Ratio) on ROE (Return on Equity)

The Financing to Deposit Ratio (FDR) has a positive and significant effect on Return on Equity (ROE) of state-owned Islamic banks in Indonesia, Malaysia, and Brunei Darussalam across all quantiles. This finding is consistent with previous research, which found that FDR has a positive and significant effect on ROE for both long-term and short-term Indonesian Islamic banks (Lutfia & Febrilyantri, 2025). Similar findings were made by (Karmila, 2022), who found that increasing a bank's FDR can increase profitability, as measured by ROE. Studies (Kasanah et al., 2022; Soatov, 2025) found a positive relationship between FDR (or similar financing ratios) and profitability.

This suggests that increasing the ability of Islamic banks to channel funds to third parties (FDR) can increase ROE at state-owned Islamic banks in Indonesia, Malaysia, and Brunei Darussalam. Islamic banks with a higher proportion of third-party funds tend to increase the utilization of productive assets, thereby increasing income from margin financing and ultimately strengthening ROE. This is in line with the theory of financial intermediation, which states that banks that are able to channel funds efficiently will optimize revenue and maximize returns on capital (Chatterjee et al., 2024; Gorton & Winton, 2023; Scholtens & Wensveen, 2023). Thus, the increase in Return on Equity (ROE) of state-owned Islamic banks in Indonesia, Malaysia, and Brunei Darussalam can be attributed to an increase in the Financing to Deposit Ratio (FDR) evenly across a number of state-owned Islamic banks in those countries. Thus, the banks' ability to maximize third-party funds drives an increase in the profits of state-owned Islamic banks in Indonesia, Malaysia, and Brunei Darussalam.

For example, a study of Islamic banks in Pakistan showed that financing profitability ratios positively affected ROA and ROE, because increased financing activities generated higher revenues than the cost of funds. Other research on banking in Africa shows that a higher financing ratio is significantly associated with improved profit performance (Song et al., 2019). In the context of state-owned Islamic banks, this finding implies that a prudent yet productive financing expansion strategy can strengthen the profitability of bank capital, rather than simply increasing liquidity risk.

Table 5
Quantile

| | Quantil | Coefficient | Std. Error | t-Statistic | Prob. |
|-----|---------|-------------|------------|-------------|--------|
| NPF | 0.100 | -160.8148 | 77.79001 | -2.067294 | 0.0410 |
| | 0.200 | -114.3058 | 56.31270 | -2.029840 | 0.0447 |
| | 0.300 | -89.46329 | 46.65983 | -1.917352 | 0.0577 |
| | 0.400 | -124.8913 | 101.9298 | -1.225268 | 0.2230 |
| | 0.500 | -311.2103 | 24.20842 | -12.85546 | 0.0000 |
| | 0.600 | -286.8183 | 23.37208 | -12.27184 | 0.0000 |
| | 0.700 | -290.0277 | 20.93274 | -13.85522 | 0.0000 |
| | 0.800 | -272.7688 | 20.26146 | -13.46244 | 0.0000 |
| | 0.900 | -275.7065 | 16.10072 | -17.12386 | 0.0000 |
| CIR | 0.100 | 26.41932 | 13.62467 | 1.939079 | 0.0549 |
| | 0.200 | 18.00422 | 9.843286 | 1.829086 | 0.0700 |
| | 0.300 | 14.33911 | 8.283157 | 1.731117 | 0.0861 |
| | 0.400 | 21.12251 | 18.45995 | 1.144234 | 0.2549 |
| | 0.500 | 55.02458 | 3.790210 | 14.51756 | 0.0000 |
| | 0.600 | 50.36168 | 3.249566 | 15.49797 | 0.0000 |
| | 0.700 | 49.69147 | 2.635666 | 18.85348 | 0.0000 |
| | 0.800 | 47.20333 | 2.482013 | 19.01816 | 0.0000 |
| | 0.900 | 47.46221 | 1.978390 | 23.99033 | 0.0000 |
| CAR | 0.100 | 29.66240 | 14.89395 | 1.991574 | 0.0488 |
| | 0.200 | 20.33803 | 11.64929 | 1.745860 | 0.0835 |
| | 0.300 | 19.09781 | 12.15199 | 1.571579 | 0.1188 |
| | 0.400 | 25.39961 | 21.49749 | 1.181515 | 0.2398 |
| | 0.500 | 61.76271 | 2.690914 | 22.95231 | 0.0000 |
| | 0.600 | 61.02077 | 3.550189 | 17.18803 | 0.0000 |
| | 0.700 | 62.19429 | 3.690914 | 16.85065 | 0.0000 |
| | 0.800 | 56.98345 | 2.178062 | 26.16246 | 0.0000 |
| | 0.900 | 56.78085 | 1.757459 | 32.30849 | 0.0000 |
| FDR | 0.100 | 18.62554 | 8.593952 | 2.167285 | 0.0323 |
| | 0.200 | 13.84899 | 6.679263 | 2.073431 | 0.0404 |
| | 0.300 | 12.59496 | 6.598031 | 1.908897 | 0.0588 |
| | 0.400 | 18.14557 | 14.40288 | 1.259857 | 0.2103 |
| | 0.500 | 44.89639 | 2.250711 | 19.94764 | 0.0000 |
| | 0.600 | 42.63338 | 2.915642 | 14.62229 | 0.0000 |
| | 0.700 | 44.03570 | 2.877906 | 15.30130 | 0.0000 |
| | 0.800 | 44.84149 | 2.656755 | 16.87829 | 0.0000 |
| | 0.900 | 44.81416 | 2.118696 | 21.15176 | 0.0000 |
| C | 0.100 | -3995.678 | 1972.509 | -2.025683 | 0.0451 |
| | 0.200 | -2802.260 | 1477.801 | -1.896236 | 0.0604 |
| | 0.300 | -2410.204 | 1363.352 | -1.767852 | 0.0797 |
| | 0.400 | -3469.324 | 2914.580 | -1.190334 | 0.2364 |
| | 0.500 | -8776.103 | 445.4955 | -19.69965 | 0.0000 |
| | 0.600 | -8220.154 | 441.4068 | -18.62263 | 0.0000 |
| | 0.700 | -8285.874 | 392.4261 | -21.11448 | 0.0000 |
| | 0.800 | -8058.743 | 377.8005 | -21.33068 | 0.0000 |
| | 0.900 | -8067.699 | 300.8370 | -26.81751 | 0.0000 |

Source: Author's processing (2026)

Table 6.
Quantile Regression Equation 2

| Variable | $\tau = 0.05$ | $\tau = 0.25$ | $\tau = 0.50$ | $\tau = 0.75$ | $\tau = 0.90$ |
|---------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| ROE | -0.000824 (0.0000) | -0.000446 (0.0000) | -0.000388 (0.0169) | -0.000473 (0.0070) | -0.000412 (0.0000) |
| NPF | -0.222401 (0.0000) | -0.002502 (0.9127) | -0.064487 (0.1935) | -0.104009 (0.1239) | -0.222104 (0.0000) |
| CIR | -0.032066 (0.0000) | -0.067977 (0.0000) | -0.061689 (0.0000) | -0.055971 (0.0000) | -0.044839 (0.0000) |
| CAR | 0.043365 (0.0000) | 0.015718 (0.0490) | 0.005949 (0.6881) | 0.013063 (0.3885) | 0.008223 (0.0865) |
| FDR | 0.039004 (0.0000) | 0.014555 (0.0003) | 0.014588 (0.0047) | 0.014908 (0.0054) | 0.008223 (0.0000) |
| C | 0.562736 (0.5601) | 5.675295 (0.0000) | 5.469252 (0.0000) | 4.922656 (0.0008) | 4.478893 |
| Pseudo R-squared | 0.920608 | 0.929482 | 0.935873 | 0.935886 | 0.932288 |
| Prob(Quasi-LR stat) | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

Source: Author's processing (2026)

The quantile regression results in the table above show that in revealing the differences in the influence of variables on ROE, NPF, CIR, CAR, and FDR. This can be seen from the τ (quantile) value on ROA, starting from the low quantile ($\tau: 0.05$), medium ($\tau: 0.25$ and $\tau: 0.50$), high ($\tau: 0.75$ and $\tau: 0.90$).

$$ROA \tau_{0.05} = 0.562736 - 0.000824 - 0.222401 - 0.032066 + 0.043365 + 0.039004$$

$$ROA \tau_{0.25} = 5.675295 - 0.000446 - 0.002502 - 0.067977 + 0.015718 + 0.014555$$

$$ROA \tau_{0.50} = 5.469252 - 0.000388 - 0.064487 - 0.061689 + 0.005949 + 0.014588$$

$$ROA \tau_{0.75} = 4.922656 - 0.000473 - 0.104009 - 0.055971 + 0.013063 + 0.014908$$

$$ROA \tau_{0.90} = 4.478893 - 0.000412 - 0.222104 - 0.044839 + 0.008223 + 0.008223$$

The Effect of Return on Equity (ROE) on Return on Assets (ROA)

The results of this study indicate that Return on Equity (ROE) has a negative and significant effect on Return on Assets (ROA) of state-owned Islamic banks in Indonesia, Malaysia, and Brunei Darussalam across all quantiles. This finding is consistent with several studies on banking profitability, which show that internal factors such as capital structure, bank size, financing risk, and operational efficiency can produce a negative relationship between ROE and ROA under certain conditions (Kasanah et al., 2022; Supiyadi & Nugraha, 2022)

Based on these results, an increase in Return on Equity (ROE) actually suppresses the operational profitability (ROA) of state-owned Islamic banks in Indonesia, Malaysia, and Brunei Darussalam. This suggests that a high ROE does not necessarily reflect efficient asset utilization but may stem from an aggressive capital structure or increased leverage, ultimately increasing asset productivity (Nwuba et al., 2022; Pham et al., 2022). Theoretically, this relationship can be explained through the DuPont model, where ROE is influenced by profit margin, asset efficiency, and leverage. An increase in ROE due to higher leverage does not automatically increase ROA if asset efficiency does not improve (Fitriyani et al., 2025; José et al., 2020). In fact, excessive leverage can increase risks and operational costs, thereby reducing the ability of assets to generate profits (Darmansyah & Juniar, 2024; Nassim et al., 2025; Safenida & Vestari, 2023). In the context of state-owned Islamic banks in Indonesia, Malaysia, and Brunei Darussalam, Islamic banks

operating in relatively small and less liquid markets tend to face inefficiencies of scale, so an excessive focus on ROE could potentially harm asset profitability. Therefore, banking strategies need to balance equity returns with increased asset efficiency and sustainable risk management (Chowdhury & Haron, 2022; Fathiyah & Muflih, 2023; Muttaqin, 2025).

The Effect of Non-Performing Financing (NPF) on Return on Assets (ROA)

Non-Performing Financing (NPF) has a negative and significant impact at the 0.05 and 0.90 quartiles, while at the 0.25, 0.50, and 0.75 quartiles it is insignificant on Return on Assets (ROA) of state-owned Islamic banks in Indonesia, Malaysia, and Brunei Darussalam. These consistent results are supported by various international studies, including (Fajri et al., 2023; Rita & Sugiarti, 2025), and international studies based on NPL/NPF, which show a negative impact on Islamic bank profitability. In a regional context, the limited scale and liquidity of the Kalimantan market have the potential to increase the negative impact of NPF on ROA, thus strengthening risk management and improving asset quality are key to the profitability of Islamic banks in the region (Fathiyah & Muflih, 2023; Humairah et al., 2023; Irawan et al., 2025). Similar results were also demonstrated by cross-country studies from the OIC, which reported a negative relationship between NPF and profitability, both ROA and ROE, across various model specifications (Dewi & Anggraeni, 2025).

These results indicate that increasing non-performing financing (NPF) in state-owned Islamic banks in Indonesia, Malaysia, and Brunei Darussalam tends to reduce their ability to generate profits. This is because NPF partially depresses ROA, reflecting a deterioration in financing quality that directly impacts profitability (Fajri et al., 2023). Theoretically, this relationship can be explained using the CAMEL model, where asset quality is a key determinant of profitability. Banks with high NPF levels must increase their allowance for losses and recognize impairment losses on financing, resulting in decreased operating income from assets and weakened ROA (Barakat et al., 2024; Hidayat, 2022; Salsabilla & Jaya, 2024). Similarly, in the case of state-owned Islamic banks in Indonesia, Malaysia and Brunei Darussalam, where in the low quartile, the ROA value of low Islamic banks tends to be more vulnerable to the increase in NPF because the bank's profit is limited, thus impacting the increase in non-performing financing which suppresses losses, while in the high quartile position, banks with high ROA will generally have high risks as well, so that stronger income and reserves so that the impact of NPF can be reduced.

Image 2
Sobel Test NPF To ROA via ROE

| Input: | | Test statistic: | | Std. Error: | p-value: |
|----------------|-----------|-----------------|------------|-------------|------------|
| a | -311.2103 | Sobel test: | 2.38297335 | 0.05067182 | 0.01717344 |
| b | -0.000388 | Aroian test: | 2.37604179 | 0.05081964 | 0.01749948 |
| s _a | 24.20842 | Goodman test: | 2.38996593 | 0.05052356 | 0.01684994 |
| s _b | 0.000160 | Reset all | Calculate | | |

Source: Processed Data (2026)

The Sobel test result was $2.38 > 1.96$, with a significance value of 0.017, indicating that ROE successfully mediated the NPL effect on ROA for state-owned Islamic banks in Indonesia, Malaysia, and Brunei Darussalam. The increase in NPF reflects the high risk of bank financing, which drives up provision costs and suppresses bank net profits. This result is consistent with the fact that NPF, both directly and through ROE, has an impact on ROA. This decrease in profit

directly impacts ROE, as ROE reflects the rate of return on capital held. (Evoney & Margaretha, 2024; Syafaat & Timuriana, 2025; Utari & Viverita, 2024). A decrease in ROE would imply low asset management efficiency, thus suppressing ROA. Thus, ROE acts as a transmission mechanism linking the influence of financing risk (NPF) with asset profitability (ROA). Empirically, recent studies have shown that NPF negatively affects bank profitability, whereas ROE positively affects financial performance. (Al Almer & Hidayah, 2023; Nguyen, 2023). This suggests that some of the effects of NPF on ROA are not only direct but also indirect, mediated by ROE. Therefore, the existence of ROE reinforces the understanding that sound financing risk management will increase bank profitability, both in terms of return on capital and asset efficiency.

The Effect of Cost to Income Ratio (CIR) on Return on Assets (ROA)

The Cost-to-Income Ratio (CIR) has a negative and significant effect on the Return on Assets (ROA) of state-owned Islamic banks in Indonesia, Malaysia, and Brunei Darussalam across the low, middle, and high quantiles. This result is consistent with research conducted in Asia, which found a negative and significant relationship between CIR and ROA in both Islamic and conventional banks, indicating that cost inefficiency directly reduces the ability of assets to generate profits. (Kurniawati et al., 2025; Widarjono, 2022). Theoretically, this relationship can be explained by operational efficiency theory, in which CIR is viewed as a key indicator of the effectiveness of cost management relative to revenue. (Alex et al., 2024; Kusuma & Budhidharma, 2025a; Rizky et al., 2025). Studies in Malaysia and the ASEAN region confirm that operational inefficiencies reflected in high CIR contribute to declining bank profitability. (Parasdy & Raharja, 2024).

The cost-to-income ratio is a key indicator of efficiency and is negatively related to ROA (Irawan et al., 2025; Laporšek et al., 2025). Research on Islamic banks in Indonesia also shows that high CIR reflects weak cost control, resulting in declining asset-based profits (Amalia et al., 2024; A. Anggraini et al., 2025; Malini & Putri, 2023; Rizky et al., 2025; Widarjono & Sidiq, 2022). In addition, cross-country comparative studies conclude that banks with high CIR tend to experience greater profitability pressures due to operating costs that are not commensurate with revenue growth (T. Ayinuola & Gumel, 2023; Dsouza et al., 2022; Laporšek et al., 2025; Mirovi et al., 2024; Salem et al., 2021). These results confirm that increasing operating costs relative to revenue consistently reduces the profitability of Islamic banks' assets. Operational efficiency is a fundamental factor determining a bank's financial performance. The higher the CIR, the greater the proportion of revenue absorbed by operating costs, resulting in decreased net profit and asset productivity (Kurniawati et al., 2025; Qomar et al., 2024). As the CIR increases, profit margins narrow due to higher overhead costs, putting pressure on ROA (Al-sharkas & Al-sharkas, 2022; Anh & Huong, 2024; Kusuma & Budhidharma, 2025a; Zafir & Sudarjah, 2025). In the context of state-owned Islamic banks in Indonesia, Malaysia, and Brunei Darussalam, which are characterized by relatively small market scale and limited liquidity, operating cost pressures can further exacerbate the negative impacts. CIR on ROA. Limited economies of scale make banks more vulnerable to inefficiencies, so strategies to improve operational efficiency and control costs are key to maintaining sustainable profitability for Islamic banks in the region.

Image 3
Sobel Test CIR to ROA via ROE

| Input: | | Test statistic: | Std. Error: | p-value: |
|----------------|-----------|---------------------------|-------------|------------|
| a | 55.02458 | Sobel test: -2.39186063 | 0.00892591 | 0.01676321 |
| b | -0.000388 | Aroian test: -2.38635931 | 0.00894649 | 0.01701612 |
| s _a | 3.790210 | Goodman test: -2.39740017 | 0.00890529 | 0.01651188 |
| s _b | 0.000160 | Reset all | Calculate | |

Source: Processed Data (2026)

Based on the results of the online Sobel test above, the significance value obtained is 0.016, which is smaller than 0.05, so it can be concluded that ROE significantly mediates the effect of CIR on ROA. Return on Equity (ROE) can mediate the effect of the Cost-to-Income Ratio (CIR) on Return on Assets (ROA) by transmitting operational efficiency to asset profitability. These results also found that, both directly and through ROE, the CIR variable has a negative effect on ROA. Theoretically, a high CIR indicates inefficient operations, thereby suppressing the bank's net profit. This decrease in profit directly lowers ROE, as ROE depends on the ability to generate profits from equity. (Maharanie et al., 2026; O'g'li, 2023). Furthermore, a low ROE indicates inefficient capital and profit management, which ultimately affects ROA as an indicator of asset profitability. Empirically, recent research shows that CIR has a significant negative effect on bank profitability (ROA and ROE), confirming that cost efficiency is a key determinant of financial performance. (Kusuma & Budhidharma, 2025b). Furthermore, the European Banking Report (2023–2024) shows that rising operating costs and provisions directly depress profits and ROE, thereby affecting ROA. Thus, ROE acts as a mediating variable, linking cost inefficiency (CIR) to a bank's ability to generate returns on assets (ROA).

The Effect of Capital Adequacy Ratio (CAR) on Return on Assets (ROA)

The Capital Adequacy Ratio (CAR) was positive and significant for the Return on Assets (ROA) of state-owned Islamic banks in Indonesia, Malaysia, and Brunei Darussalam across the low, middle, and high quantiles. These results are consistent with studies on Islamic commercial banks, which show that CAR influences ROE in the short term, and that changes in capital structure can affect shareholder profitability through the cost of capital and capacity mechanisms (Murtiningsih & Tohirin, 2023). Thus, capital adequacy (CAR) has been empirically proven to influence Return on Equity, suggesting that increasing capital alone is insufficient without effective financing risk management to maintain Islamic bank profitability (Murtiningsih & Tohirin, 2023; Pratomo et al., 2025).

Based on these results, increasing CAR can reduce the ROA of state-owned Islamic banks in Indonesia, Malaysia, and Brunei Darussalam, reinforcing the importance of capital structure and financing quality in determining return on equity in Islamic banks. CAR plays a key role in demonstrating the adequacy of a bank's capital to absorb risk and support asset expansion (Athayya & Yulazri, 2025; Mala & Jumono, 2025; Obeid, 2023; Oyasor, 2024; Tran, 2024). Increasing capital buffers can impact bank profitability, including ROE, as highly capitalized banks tend to hold more capital against risky assets, which can drive up returns on equity when capital is not optimally utilized. (Bitar et al., 2018; Hendrawan et al., 2023; Masdjojo, 2023; Pratomo et al., 2025).

Image 4
Sobel Test CAR To ROA via ROE

| | Input: | | Test statistic: | Std. Error: | p-value: |
|----------------------|-----------|------------------|------------------|-------------|------------|
| <i>a</i> | 61.76271 | Sobel test: | -2.41157746 | 0.00993704 | 0.01588368 |
| <i>b</i> | -0.000388 | Aroian test: | -2.40931706 | 0.00994636 | 0.01598241 |
| <i>s_a</i> | 2.690914 | Goodman test: | -2.41384424 | 0.0099277 | 0.01578521 |
| <i>s_b</i> | 0.000160 | Reset all | Calculate | | |

Source: Processed Data (2026)

Based on the results of the online Sobel test above, the significance value obtained is 0.016, which is smaller than 0.05, so it can be concluded that ROE significantly mediates the effect of CIR on ROA. Return on Equity (ROE) can mediate the effect of Cost-to-Income Ratio (CIR) on Return on Assets (ROA) by transmitting operational efficiency to asset profitability. This means that CIR has a direct effect or is mediated by ROE; both affect ROA. High capital increases trust and stability, but also creates opportunity costs and inefficiencies if not optimized. In this condition, the effect of CAR on ROA tends to be indirect, but rather through the bank's ability to generate returns on capital (ROE). This aligns with findings that efficiency and capital structure influence profitability through internal bank mechanisms. (Kusuma & Budhidharma, 2025b). Conversely, for high-quantile banks (those with high ROA), CAR is more effective because they can manage capital productively. High profits directly increase ROE, which in turn strengthens ROA. European banking data shows that increasing profits faster than equity increases ROE and impacts ROA. Therefore, banks with low profitability need to focus on capital efficiency (increasing ROE) because CAR is not optimal in transmitting to ROA. Meanwhile, banks with high profitability can use a more aggressive CAR to expand because they can convert capital into profit.

The Effect of Financing to Deposit Ratio (FDR) on Return on Assets (ROA)

The Financing to Deposit Ratio (FDR) has a positive and significant impact on the Return on Assets (ROA) of state-owned Islamic banks in Indonesia, Malaysia, and Brunei Darussalam across the low, middle, and high quantiles. This finding is consistent with previous empirical literature that supports a positive relationship between FDR and ROA, both in studies of Islamic banks in Indonesia and Malaysia and in international comparative research that positions FDR as an indicator of liquidity and financing effectiveness. (Basnawati, 2022).

Based on these results, an increase in the FDR can reduce the ROA of state-owned Islamic banks in Indonesia, Malaysia, and Brunei Darussalam. Increasing the financing-to-deposit ratio can improve the profitability of Islamic banks. Furthermore, the FDR serves as an indicator of the effectiveness of intermediation. The greater the proportion of funds channeled to productive financing, the more optimal the bank's ability to generate asset-based income (Endrajati, 2025; Purbaningsih & Fatimah, 2018; Susilawati et al., 2025). Theoretically, the concept of banking intermediation posits that an increase in the FDR reflects the efficient allocation of funds to productive sectors, generating profit-sharing margins and thus driving an increase in ROA. (Abdussamad et al., 2025; Kasanah et al., 2022). In Indonesia, Malaysia, and Brunei Darussalam, these results indicate that optimizing the FDR without sacrificing financing quality is a crucial strategy for increasing productive assets and maintaining the profitability of Islamic banks in a competitive regional market.

Image 5
Sobel Test FDR to ROA via ROE

| Input: | | Test statistic: | Std. Error: | p-value: |
|----------------|-----------|---------------------------|-------------|------------|
| a | 44.89639 | Sobel test: -2.40727687 | 0.00723631 | 0.01607198 |
| b | -0.000388 | Aroian test: -2.40430154 | 0.00724526 | 0.0162034 |
| s _a | 2.250711 | Goodman test: -2.41026328 | 0.00722734 | 0.01594101 |
| s _b | 0.000160 | Reset all | Calculate | |

Source: Processed Data (2026)

Based on the results of the online Sobel test above, the p-value was 0.016, which is less than 0.05. Therefore, it can be concluded that ROE significantly mediates the effect of FDR on ROA. This means that FDR, both directly and mediated by ROE, has the same effect on ROA. FDR reflects a bank's ability to channel funds into productive financing. An optimal FDR increases margin income, thereby increasing net profit. This profit is first reflected in ROE, an equity indicator, before ultimately affecting ROA, which measures asset utilization efficiency. Recent research shows that FDR positively impacts bank profitability by improving the intermediation function and financing income. (Mulyawisdawati & Inayati, 2025). Furthermore, other research found that FDR and ROE simultaneously and significantly affect financial performance, with ROE being the primary indicator of translating profit into profitability. (Almer & Hidayah, 2023). Thus, ROE acts as a significant mediator, linking the effectiveness of fund distribution (FDR) to the bank's ability to generate returns on its assets (ROA).

Conclusion

This study confirms that the hypothesis regarding the internal determinants of profitability of state-owned Islamic banks is generally correct, confirmed across all performance quantiles. Non-Performing Loans (NPF) had a significant negative impact on ROE and ROA, indicating that increased problem financing consistently depresses profits through higher risk provisions. Capital Adequacy Ratio (CAR) and Funding Ratio (FDR) had significant positive impacts, indicating that strong capitalization and optimization of the intermediation function increase returns on equity and assets. Meanwhile, Capital Inefficiency (CIR) exhibits a two-dimensional effect: a positive impact on ROE (productive costs boost equity returns) but a negative impact on ROA (inefficiency depresses asset returns). Furthermore, ROE negatively impacted ROA, indicating that increased leverage is not always accompanied by asset efficiency. The Sobel test confirms the new finding that ROE mediates the effects of NPF, CIR, CAR, and Funding Ratio (FDR) on ROA, making capital structure a key transmission channel for profitability.

For regulators such as the Financial Services Authority (OJK), Bank Indonesia, the Deposit Insurance Corporation (LPS), Bank Negara Malaysia (BNI), the Malaysian Deposit Insurance Corporation (PIDM), and the Brunei Darussalam Monetary Authority (AMBD), the Brunei Darussalam Deposit Protection Corporation (BDPC), these findings call for strengthening policies based on the risk-profitability linkage. First, establish an integrated early warning system encompassing NPF, CAR, CIR, and FDR, with ROE and ROA indicators, to detect early deterioration in intermediation quality. Second, encourage the establishment of optimal FDR/financing mix targets through macroprudential policies to ensure financing remains productive and does not degrade asset quality. Third, tighten oversight of operational efficiency (CIR benchmark) and cost transparency to ensure that ROE increases truly stem from real

performance, not excess leverage. Fourth, strengthen risk-based capital buffer policies so that CAR is not only nominally high but also effectively drives asset productivity. For bank management, strategic alignment is necessary across financing expansion, credit risk management, digital cost efficiency, and an optimal capital structure to ensure ROE has a significant impact on ROA. For investors and the public, ROE indicators need to be analyzed alongside asset quality and efficiency, not in isolation.

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Author Contributions Statement

FM contributed to contextualization, methodology, investigation, and data curation and writing the initial draft; FT contributed to supervision, validation, review writing and editing, contributed to formal analysis, data curation, opinion writing and editing, and all authors have read and approved the final version of the manuscript.

Conflict of Interest

In writing this paper, the authors declare no conflicts of interest related to this research. Our research was conducted independently without any commercial, financial, or personal relationships that could be perceived as influencing the results or interpretation of the findings. The authors emphasize that there are no affiliations with any organization or entity that has a direct or indirect interest in the subjects discussed in this manuscript, including sponsors. All research activities were conducted regularly and objectively in accordance with academic standards, and all authors are accountable for the results of this article.

AI Usage Statement

The authors acknowledge that, in this study, we used artificial intelligence (AI) tools with limited support functions, such as language editing, grammar checking, and improving the manuscript's clarity and readability. AI technology was not used to generate research ideas, conduct data analysis, interpret results, or draw scientific conclusions. All intellectual contributions, including conceptualization, methodology, analysis, and interpretation of findings, were made solely by the authors. The authors are solely responsible for the originality, accuracy, and integrity of the content presented in this manuscript. The use of AI conforms to ethical standards for academic publication, and AI tools are not listed as authors or contributors to this work.

Bibliography

- Abdulai, S. K., & Umar, S. (2024). The Impact of Capital Adequacy and Bank Size on Profitability of Ghanaian Banks. *MPRA Paper*, 2(12).
- Abdussamad, Fitriah, A., & Akmal, Ri. (2025). The Influence Of Liquidity, Solvency, and Financing Distribution On The Profitability Of Islamic Commercial Banks In Indonesia (Period 2022-2024). *Jurnal Akuntansi dan Keuangan (JAK)*, 30(2).
- Abrevaya, J., & Dahl, C. M. (2022). The Effects of Birth Inputs on Birthweight. *Journal of Business & Economic Statistics*, 26(4), 379–397.

- <https://doi.org/10.1198/073500107000000269>
- Ahmad, I., Sajada, Yameen, M., & Khan, E. (2025). Non-Performing Assets And Capital Adequacy In Banks : Insights From The Literature. *International Journal of Advanced Research (IJAR)*, 13(11), 199–210. <https://doi.org/10.21474/IJAR01/22104>
- Al-sharkas, A. A., & Al-sharkas, T. A. (2022). The Impact On Bank Profitability : Testing For Capital Adequacy Ratio, Cost-Income Ratio And Non-Performing Loans In Emerging Markets. *Journal of Governance and Regulation*, 11(1), 231–243. <https://doi.org/10.22495/jgrv11i1siart4>
- Al Almer, A., & Hidayah, N. (2023). The Effect of FDR, ROE, ROA, and NPF on Profitability in Indonesian Sharia Commercial Banks. *Proceedings International Economics and Business Conference*, 1(1 SE-Articles), 9–17. <https://doi.org/10.35912/iecon.v1i1.124>
- Alex, I., Rebecca, N., & University Research Repository Extension, M. (2024). *Relationship Between Operating Efficiency And Return On Assets: A Case Study Of Uganda*. 3, 70–80.
- Alkindi, M., & Utami, W. (2025). in *Southeast Asian Islamic banks " A comparative study of Islamic conformity , profitability , and green performance in Southeast Asian Islamic banks*. [https://doi.org/10.21511/bbs.20\(1\).2025.15](https://doi.org/10.21511/bbs.20(1).2025.15)
- Amoa, K., Joseph, G., Coleman, A., & Emi, O. (2025). Financial sustainability and credit risk : evidence from listed banks in Ghana. *SN Business & Economics*, 5(7), 1–24. <https://doi.org/10.1007/s43546-025-00861-4>
- Asmare, E., & Begashaw, A. (2018). Review on Parametric and Nonparametric Methods of Efficiency Analysis. *Crimson Publishers*, 2(3), 1–7. <https://doi.org/10.31031/OABB.2018.02.000534>
- AAziz, L., Siregar, H., Achsani, N., & Irawan, T. (2025). The Role of Capital Adequacy Ratio in Enhancing Regional Development Banks' Stability: An Empirical Study from 2012-2022. *Eduvest - Journal of Universal Studies*, 5, 6120–6130. <https://doi.org/10.59188/eduvest.v5i6.51304>
- Barakat, H. A., Elwahab, S. A., Yassin, N. M., Mohamed, S., Ibrahim, M., Ismail, M. H., Waled, N., & Eldin, S. (2024). *Asset Quality And Banks Performance : A Panel Data Analysis Of Commercial Banks*. 14(3), 111–121. <https://doi.org/10.22495/rgcv14i3p11>
- Basnawati, S. R. (2022). Analisis Faktor-Faktor Yang Mempengaruhi Profitabilitas Pada Bank Umum Syariah Di Indonesia. *Jurnal Economina*, 1(2 SE-Articles), 219–227. <https://doi.org/10.55681/economina.v1i2.52>
- Bitar, M., Pukthuanthong, K., & Walker, T. (2018). The effect of capital ratios on the risk, efficiency and profitability of banks: Evidence from OECD countries. *Journal of International Financial Markets Institutions and Money*, Forthcoming. <https://doi.org/10.1016/j.intfin.2017.12.002>
- Cheng, C., Spiegelman, D., & Li, F. (2023). Is the Product Method More Efficient Than the Difference Method for Assessing Mediation? *American Journal of Epidemiology*, 192(1), 84–92. <https://doi.org/10.1093/aje/kwac144>
- Chernozhukov, V., Galvao, A. F., He, X., & Xiao, Z. (2019). Quantile regression. *Journal of Econometrics*, 213(1), 1–3. <https://doi.org/https://doi.org/10.1016/j.jeconom.2019.04.002>
- Chowdhury, M. A. M., & Haron, R. (2022). The efficiency of Islamic Banks in the Southeast Asia (SEA) Region. *Future Business Journal*, 7, 1–16. <https://doi.org/10.1186/s43093-021-00062-z>
- Çollaku, B., & Aliu, M. (2021). Impact of Non-Performing Loans on Bank's Profitability: Empirical Evidence from Commercial Banks in Kosovo. *Journal of Accounting, Finance and Auditing Studies*, 7, 226–242. <https://doi.org/10.32602/jafas.2021.027>

- Connect, F. S. I. (2019). *The capital buffers in Basel III – Executive Summary*. 1–2.
- Daulay, M. A., Satriana, D., & Ardiansyah, M. (2025). Determinants of Return on Equity in Sharia Bank in Indonesia. *Al-Bank: Journal of Islamic Banking and Finance*, 5(2 SE-Articles), 135–150. <https://doi.org/10.31958/ab.v5i2.15812>
- Endrajati, N. P., & Anggraeni, A. (2025). Profitability Determinants of Islamic Banks in Indonesia: The Role of Foreign Ownership. *Jurnal Ekonomi*, 30(2 SE-Articles), 335–357. <https://doi.org/10.24912/je.v30i2.3136>
- Evoney, G., & Margaretha, F. (2024). The Effect of Credit Risk Management on the Financial Performance of Banks Listed on the IDX. *Jurnal Ilmiah Manajemen Kesatuan*, 12, 933–938. <https://doi.org/10.37641/jimkes.v12i4.2658>
- Fajri, M. Z. N., Rofiqo, A., Rizqon, A. L., & R. H. (2023). The Impact of MSMEs Financing in Islamic Bank on Unemployment in Indonesia. *Jurnal Ekonomi Syariah Teori Dan Terapan*, 10(5), 443–454. <https://doi.org/10.20473/vol10iss20235pp443-454>
- Fathiyah, S. N., & Muflih, M. (2023). Determinants of Islamic Banking Profitability: A Comparative Analysis of Indonesia and Malaysia. *Jurnal Ekonomi Syariah Teori Dan Terapan*, 10(4 SE-Articles), 391–402. <https://doi.org/10.20473/vol10iss20234pp391-402>
- Firdaus, V. S., & Budianto, E. W. H. (2024). Pengaruh Penerimaan Dana ZISWAF, NPF Gross, dan Pendapatan Mudharabah terhadap ROE Dengan Firm Size sebagai Variabel Moderasi pada Perbankan Syariah di Indonesia Periode 2018 Q1-2023 Q3. *Istithmar*, 8(2 SE-Articles), 102–127. <https://doi.org/10.30762/istithmar.v8i2.1511>
- Hamza, A., Ermayani, & Suryani, A. I. (2025). The Effect of Non-Performing Financing (NPF) on Return on Assets (ROA) at Bank Muamalat in Indonesia. *Jurnal Development*, 13(2 SE-Management), 440–447. <https://doi.org/10.53978/jd.v13i2.704>
- Handayani, D., Rosyidah, N., & Rani, R. (2024). Pengaruh Npf, Fdr, Car, Bopo Terhadap Roe Bank Syariah. *Izdihar: Jurnal Ekonomi Syariah*, 4(01 SE-Articles), 48–56. <https://doi.org/10.32764/izdihar.v4i01.3820>
- Hendrawan, M. H., Defung, F., & Wardhani, W. (2023). Un / desired impact of capital buffers : Evidence from Indonesian bank profitability and risk-taking Un / desired impact of capital buffers : Evidence from Indonesian bank profitability and. *Cogent Economics & Finance*, 11(2). <https://doi.org/10.1080/23322039.2023.2245217>
- Hessou, H., & Lai, V. S. O. N. (2017). Basel III Capital Buffer Requirements and Credit Union Prudential Regulation: Canadian Evidence. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2815731>
- Husen, S. D., Fuji Hakiki, M., & Ibrahim, A. W. (2025). Analysis Of Profitability Determinants In Islamic Banks In Indonesia And Malaysia. *Ad-Deenar: Jurnal Ekonomi Dan Bisnis Islam*, 9(01 SE-Articles), 101–116. <https://doi.org/10.30868/ad.v9i01.7820>
- Irawan, P., Damayanti, E., Putri Pratama, R., Denita Siagian, L., & Hanggraeni, D. (2025). Operational Risk and Bank Profitability: Analyzing BOPO and Efficiency Ratios in Indonesian Commercial Banks. *Jurnal Pendidikan Indonesia*, 6(1 SE-Articles), 338–346. <https://doi.org/10.59141/japendi.v6i1.6775>
- Ilza, M. Y. H. N., & Putri, A. Z. (2024). Comparative Effects Of Profitability And Risk Management On Financial Stability In A Dual Banking System : Does Yield Matter ? *Jurnal Ilmu Ekonomi Terapan*, 9(2), 201–220. <https://doi.org/10.20473/jiet.v9i2.58254>
- Kithandi, C. (2025). *Theory Of Financial Intermediation: A Millenial Perspective Of Theory And Practice*. 12, 1–12. <https://doi.org/10.5281/zenodo.14677499>
- Kusuma, V., & Budhidharma, V. (2025b). Exploring Proxies of Bank Profitability in Indonesia from 2012 to 2023. *Jurnal Ilmiah Multidisiplin Indonesia (JIM-ID)*, 4(04), 140–152. <https://doi.org/10.58471/esaprom.v4i04>
-

- Lingadjaya, R. I. T., Atahau, A. D. R., Ugut, G. S. S., & Suk, K. S. (2024). Faktor Penentu Profitabilitas Bank Tercatat Di Indonesia : Pendekatan Dengan Regresi Kuantil. *Jurnal Proaksi*, 11(1), 1–20. <https://doi.org/10.32534/jpk.v11i1.5246>
- Lukman, I., & Rahma, M. (2021). Pengaruh CAR Dan NPF Terhadap Roe Bank Umum Syariah (BUS): (Studi kasus pada Bank Umum Syariah di Indonesia periode 2015-2019). *Maro: Jurnal Ekonomi Syariah Dan Bisnis*, 4(2 SE-Articles), 36–44. <https://doi.org/10.31949/maro.v4i2.1283>
- Maharanie, K., Waliyah, D., & Leon, F. (2026). The Effect of Bank-Specific Factors on the Profitability of Conventional Banks Listed on the Indonesia Stock Exchange. *Dialektika : Jurnal Ekonomi Dan Ilmu Sosial*, 11, 148–161. <https://doi.org/10.36636/dialektika.v11i1.8542>
- Mala, C. M. F., & Jumono, S. (2025). Credit Risk Management via Capital Adequacy : Insights on Stability from Indonesia Regional Banks. *Jurnal Ilmiah Manajemen Kesatuan (JIMKES)*, 13(4), 2293–2304. <https://doi.org/10.37641/jimkes.v13i4.3175>
- Mardoyan, A., & Saegsyhan, H. (2025). Research Article Basel Iii Capital Reforms And Bank Stability In A Changing Manuscript Info Abstract Issn :(O) 2320-5407 , Issn (P) 3107-4928 Introduction : - Literature Review : -. *International Journal Of Advanced Research (IJAR)*, 13(12), 336–343. <https://doi.org/10.21474/IJAR01/22359>
- Masdjojo, G. N. (2023). banking sector " The relationship between profitability and capital buffer in the Indonesian banking sector. [https://doi.org/10.21511/bbs.18\(2\).2023.02](https://doi.org/10.21511/bbs.18(2).2023.02)
- Molla, M. I., Mustary, M., Rahaman, M. K. Bin, Biswas, N., & Das, S. R. (2025). Does revenue diversification lead to greater stability and profitability of banks? Empirical evidence from Bangladesh. *LBS Journal of Management & Research*, 23(2), 169–185. <https://doi.org/10.1108/LBSJMR-07-2024-0074>
- Mulyawisdawati, R., & Inayati, A. (2025). The Impact of Financial Ratio Indicators on Profitability in Sharia Banks in Indonesia Period 2019-2023. *Ekonomika Sharia Jurnal Pemikiran Dan Pengembangan Ekonomi Syariah*, 11, 133. <https://doi.org/10.36908/esha.v11i1.1572>
- Munteanu, I., & Ilie, C. A. M. (2022). The Use of ROA and ROE in Study of a Bank's Profitability. *Ovidius University Annals. Economic Sciences Series*, 21, 1078–1083. <https://doi.org/10.61801/OUAESS.2021.2.145>
- Nabillah, L., & Tristanto, T. A. (2025). Pengaruh Return on Assets, Return on Equity, dan Net Profit Margin Terhadap Pertumbuhan Laba pada Subsektor Bank Swasta Konvensional yang Terdaftar di Bursa Efek Indonesia (BEI) Periode 2020-2024. *AKSIOMA : Jurnal Sains Ekonomi Dan Edukasi*, 2(10 SE-Articles), 2405–2416. <https://doi.org/10.62335/aksioma.v2i10.1877>
- Ngo, H. K., & Trinh, H. T. T. (2025). The impact of financial risks on bank performance : evidence from Bayesian analysis in Vietnam ' s commercial banks. *Discover Sustainability*, 4(5). <https://doi.org/10.1007/s43621-025-01246-1>
- Obeid, R. (2023). Determinants of Capital Adequacy Ratio in the Banking Sector: Evidence from the Arab Region. *International Journal of Business and Management*, 18, 63. <https://doi.org/10.5539/ijbm.v18n5p63>
- Pangeran. (2025). Pengaruh Likuiditas, Permodalan, Kualitas Kredit, dan Pertumbuhan Kredit Terhadap Kinerja Bank dengan Efisiensi BOPO sebagai Variabel Mediasi (Studi pada Bank yang Terdaftar di BEI Tahun 2014–2024). *Journal of Capital Markets and Banking*, 13(4 SE-Articles), 94–118. <https://doi.org/10.63607/jcmb.v13i4.42>
- Parasdy, Y., & Raharja, S. (2024). Relationship Between Credit Risk Management And Bank-Specific Factors on Financial Performance Of ASEAN-5 Banks. *Indonesian Interdisciplinary*

- Journal of Sharia Economics (IJSE)*, 7(3 SE-Articles).
<https://doi.org/10.31538/ijse.v7i3.4938>
- Pham, N. H., Hoang, T. M., Thi, N., & Pham, H. (2022). The impact of capital structure on bank profitability : evidence from Vietnam The impact of capital structure on bank profitability : evidence from Vietnam. *Cogent Business & Management*, 9(1).
<https://doi.org/10.1080/23311975.2022.2096263>
- Powell, D. (2022). Quantile regression with nonadditive fixed effects. *Empirical Economics*, 63(5), 2675–2691. <https://doi.org/10.1007/s00181-022-02216-6>
- Rahmawati, Z., & Pratiwi, R. S. (2025). The Role of CAR as a Mediating Variable in the Impact between NPF and FDR on ROA of Islamic Banks. *Jurnal Manajemen Bisnis Dan Kewirausahaan (Jamanika)*, 05(02). <https://doi.org/10.22219/jamanika.v5i2.41556>
- Rehman, S., Wani, I., Khanam, M., & Ali, Y. S. (2021). A Brief Review of Growth and Development in Islamic Banking. 12(3), 15–25. <https://doi.org/10.9790/5933-1203041525>
- Rita, S. D., & Sugiarti, D. (2025). Islamic performance index and profitability with the moderating role of intellectual capital in Indonesian Islamic banks. *Economics, Finance, and Business Review*, 2(1 SE-Articles), 43–54. <https://doi.org/10.20885/efbr.vol2.iss1.art5>
- Safenida, W., & Vestari, M. (2023). Pengaruh Leverage, Profitabilitas, Arus Kas Operasi, Intellectual Capital, Dan Risiko Bisnis Terhadap Financial Distress. *Jurnal Ilmiah Edunomika*, 7(2 SE-Articles). <https://doi.org/10.29040/jie.v7i2.10185>
- Sany, M. A. I., & Lata, R. S. (2025). The Impact of Revenue Diversification on Bank Performance and Risk: Evidence from Bangladesh. *International Journal of Financial, Accounting, and Management*, 7(1 SE-Articles), 125–139.
<https://doi.org/10.35912/ijfam.v7i1.2843>
- Sari, K., & Fauzan, F. (2025). The impact of financial ratios on bank profitability: evidence from idx (2021-2023). *Law and Economics*, 19(2 SE-Articles), 95–105.
<https://doi.org/10.35335/laweco.v19i2.145>
- Setiawan, J. A., & Budiwitjaksono, G. S. (2024). The Influence Of LDR , ROE , NIM , And BOPO On Changes In Banking Company Profits (Empirical Study On Banking Sector Companies Listed On The Indonesia Stock Exchange (IDX) 2018-2022). *Jurnal Ekonomi*, 13(02), 2018–2022. <https://doi.org/10.54209/ekonomi.v13i02>
- Suryawan, T. (2024). The Influence of Return On Assets (ROA), Return On Equity (ROE), and Non-Performing Loans (NPL) on Profit Growth in Banking Companies from 2021 to 2023. *Daengku: Journal of Humanities and Social Sciences Innovation*, 4(3 SE-Articles), 508–515. <https://doi.org/10.35877/454RI.daengku2586>
- Susanto, F., Adib, N., & Prastiwi, A. (2024). The Impact Of Revenue Diversification On Bank Profitability And Stability: Evidence From Indonesia Banking Industry. *Jurnal Reviu Akuntansi Dan Keuangan*, 14. <https://doi.org/10.22219/jrak.v14i4.36770>
- Widarjono, A., & Sidiq, S. (2022). JEBIS : Jurnal Ekonomi dan Bisnis Islam The Sectoral Financing Diversification And The Profitability. 8(2), 201–219.
<https://doi.org/10.20473/jebis.v8i2.36316>
- Yubileus, F., Azazi, A., & Mustika, U. N. (2025). Profitabilitas sebagai Mediator Pengaruh Risiko , Modal , Tata Kelola , dan Efisiensi terhadap Pertumbuhan Laba Bank. 1(3), 121–136.
- Zafir, A. Al, & Sudarjah, G. M. (2025). Economics , Finance , and Business Review Credit risk , COVID , and bank profitability in Indonesian conventional banks. 2(2), 78–87.
<https://doi.org/10.20885/efbr.vol2.iss2.art2>