

Determinants of Islamic Banks' Financial Performance in ASEAN Countries

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Abstract

This study aims to investigate the factors influencing the financial performance of Islamic banks in selected ASEAN countries, including Indonesia, Malaysia, Thailand, and Brunei Darussalam. The financial performance of Islamic banks is assessed using ROA, with important explanatory variables including the CAR, NPF, and FDR. This study takes a quantitative approach, using secondary data from Islamic banks' annual financial reports for the period 2020 – 2024. The data are evaluated using panel data regression, and model selection is conducted using the Chow, Hausman, and Lagrange multiplier tests, which indicate that the Random Effects Model (REM) is the most appropriate estimation approach. The results show that CAR has a positive and significant effect on the financial performance of Islamic banks, whereas NPF and FDR have negative and positive coefficients, respectively, but do not show a significant effect on ROA. These results indicate that capital adequacy mainly drives the financial performance of Islamic banks in ASEAN, whereas credit risk and liquidity levels have little effect on profitability. This could be because of the risk-sharing nature inherent in Islamic banking practices.

Keywords: CAR, FDR, Islamic Bank, NPF, ROA

INTRODUCTION

According to research from the Islamic Financial Services Industry (IFSI), global Islamic financial assets are expected to exceed USD 3.38 trillion by 2023, despite macroeconomic challenges, inflation, geopolitical tensions, and banking-sector pressures. The report also highlighted that the ASEAN region, particularly Indonesia and Malaysia, was the most significant contributor among several countries, accounting for 32.14% in Malaysia and 7.46% in Indonesia.

According to the ICSD-LSEG Islamic Finance Development Report 2024, global Islamic banking assets grew consistently from 2017 to 2023, rising from USD 2.049 trillion to USD 3.569 trillion. Although the industry slowed in 2021 due to the COVID-19 pandemic, it recovered with approximately 12% growth in 2023 and is projected to reach USD 5.248 trillion by 2028. This trend highlights the resilience and worldwide popularity of Islamic banking, emphasizing its contribution to enhancing financial inclusion and supporting the stability of the global financial system.

Islamic banking in Southeast Asia has seen notable growth over the last two decades, particularly in Indonesia and Malaysia (Muttaqin, 2025). Not only that, Thailand and Brunei have independent Islamic financial institutions that implement anti-usury principles. Malaysia and Indonesia are the leading countries in Southeast Asia in developing Islamic banking, with Brunei Darussalam following. According to The Asian Banker, Malaysia has 17 operating Islamic banks and ranks among the top 100 strongest Islamic banks worldwide. In comparison, the Financial Services Authority of Indonesia lists 14 active Islamic banks. However, issues with scale, infrastructure, and public literacy continue to plague other ASEAN nations, such as Brunei, Thailand, and the Philippines. These developments are supported by government policies and regulations that promote stability and growth in the Islamic banking sector (Shelda

et al., 2025). Nevertheless, the profitability (ROA) of the Sharia Bank remains a crucial issue because it significantly impacts long-term resilience, stability of the financial system, and the country's economic contributions. (Muttaqin, 2025).

However, what are the criteria that determine the Islamic Bank's financial performance? A pattern among CAR, NPF, and FDR is revealed by findings from a pre-elimination survey conducted using secondary data. The trend comparison among these proxies is shown in Figure 1.

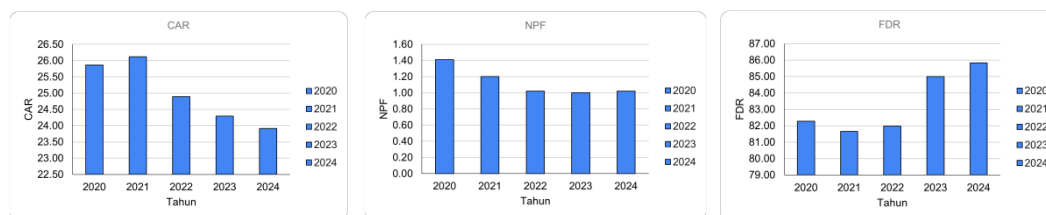


Figure 1. Development of CAR, NPF, and FDR of ASEAN Sharia Bank 2020 – 2024

Based on Figure 1, the main financial ratios of Islamic banking indicate stable performance and strong risk management capabilities. The CAR ratio has declined from around 26% to 23%, and the NPF has decreased from about 1.4% in 2020 to approximately 1.0% in 2024. On the other hand, the FDR increases from approximately 82% to 86%, indicating that the Islamic bank's intermediation function optimises the channelling of third-party funds into the productive sector.

Based on Figure 1, do CAR, NPF, and FDR affect the financial performance of ASEAN Islamic banks?. Fathihani et al. (2025), Sapitri & Irawan (2023), Putri et al. (2025), Irawan & Sapitri (2022), Imsar et al. (2023), Yuliana & Listari (2021), dan Biswas & Mondal (2023) mentions that CAR has a positive effect on the Islamic Bank's financial performance (ROA). Meanwhile, Febriani (2025), Baihaqi & Asih (2025), Syaidi et al. (2024), Alnajjar & Othman (2021), dan Jaapar et al. (2025) mentioning CAR actually has a negative effect on the financial performance (ROA) of the Sharia Bank.

Several previous studies have examined the effect of NPF on ROA. Agustina & Irsyad (2025), Syifa (2018), Hasibuan et al. (2022), Setiadi et al. (2024), and Fajriati et al. (2021) according to reports, the NPF has a negative impact on the ROA of Islamic banks. Meanwhile, other research by Qolbi et al. (2020) and Qodari (2022) found that NPF has a positive effect on the Islamic Bank's financial performance (ROA).

Next, several previous studies also discuss the effect of FDR on the ROA of IB. The research by Masalingi et al. (2025), Lestari (2021), Wahyudi & Pohan (2024), Syaidi et al. (2024), Dukalang & Nugroho (2022), and Kharazi (2022) states that FDR has a negative impact on FDR. Meanwhile, research by Hasibuan et al. (2022), Fathihani et al. (2025), Putri et al. (2025), and Ichsan et al. (2021) discovered that FDR positively impacts the ROA of Islamic banks.

While numerous studies have analyzed the financial performance of Islamic banks, the existing literature shows notable empirical inconsistencies concerning the factors that influence Return on Assets (ROA). For example, research by Fathihani et al., (2025) and Putri et al. (2025) found that CAR has a positive effect on profitability. On the contrary, the findings Febriani (2025) and Jaapar et al. (2025) actually shows a negative effect, indicating that excessive capital reserves can be an opportunity cost that suppresses profits. A similar contradiction is also found in the NPF and FDR variables, where their influence on ROA remains debated, whether it is linear, non-linear, or even insignificant in certain economic contexts.

In addition to inconsistent findings, most current literature studies remain geographically fragmented, with analyses generally focusing on a single country, such as Indonesia or Malaysia. This approach fails to capture the dynamics of Islamic banking performance at the

regional scale, where macroeconomic characteristics and levels of financial literacy vary. There is a gap in the literature evaluating how Islamic banks in countries with a Muslim-majority population (Indonesia, Malaysia, Brunei Darussalam) compare to Muslim-minority countries (Thailand) in maintaining their financial stability post-pandemic.

Therefore, this research aims to fill that gap by conducting a cross-country comparison within the ASEAN region from 2020 to 2024. The novelty of this study lies in the use of panel data across four countries with different regulatory frameworks, thereby providing a more comprehensive picture of the regional effects of capital management, risk, and intermediation on profitability. Through this approach, the study is expected to provide stronger justification for regulators and Islamic banking practitioners in ASEAN to formulate inclusive economic recovery policy strategies.

LITERATURE REVIEW

Signaling Theory

Signalling Theory is an important framework for understanding the behaviour and strategies of Islamic banks, particularly regarding transparency, risk disclosure, and financial performance. Signalling Theory explains how banks should provide information to investors to determine whether investors will invest their capital in the bank. This theory also states that banks should send signals when there is information asymmetry between the company and the users of financial reports, because the internal party (the company) understands more about the company and its prospects than external parties (the users of financial reports) (Waridh et al., 2024). The company manager will assist investors in making decisions by providing capital market information. A good financial report performance indicates that the company is performing well (Valentina & Rasyid, 2022). Therefore, the company's strong financial performance reports significantly shape the investment choices of the public and external stakeholders (Shelda et al., 2025).

Profitability

Profitability serves as a key benchmark for assessing profit levels (Subekti & Wardana, 2022). This measurement becomes very important to determine whether the company has been operating efficiently in its operational activities (Pratama & Ismunawan, 2024). The Return on Assets ratio, a profitability metric used to evaluate whether investments in the bank produce expected returns or profits, serves as an indicator of a bank's financial health (Pratama & Ismunawan, 2024). This ratio also measures how well a company can generate profit from its assets. A higher ROA indicates greater profitability and more effective asset utilization by the bank. (Subekti & Wardana, 2022). ROA measures the profit before tax as a percentage of the company's total assets. When ROA increases, profitability improves, thereby positively impacting shareholders' gains (Marusya & Magantar, 2016).

Financial Performance

Financial performance is an overview of a company's operations, based on its financial statements for a specific period (Sari & Giovanni, 2021). A bank's financial performance summarizes its financial condition over a specific period, covering both the collection and distribution of funds. A bank's performance can be assessed by analysing and evaluating financial statements. This performance is significant because it must be achieved by every company, regardless of its location, as it reflects the company's ability to manage and allocate resources. In Islamic banking, profitability must align with Sharia principles. Cross-country studies show that both internal (capital structure, asset quality, and liquidity) and external (regulatory frameworks, macroeconomic conditions) factors influence the performance of Islamic banks. Therefore, key financial indicators should be included in a comprehensive analysis (Joudar et al., 2023).

Thus, the financial performance of Islamic banks is typically assessed using multiple financial metrics ratios, especially CAR to depict capital adequacy, NPF to represent credit risk, and FDR to measure the effectiveness of intermediation functions and liquidity (Muawanah & Imronudin, 2021).

Capital Adequacy Ratio

In the business world, capital is an important factor for business development and risk absorption. The Capital Adequacy Ratio (CAR) is an important indicator of a bank's capital adequacy, showing whether it has enough capital to cover its risk-bearing assets (Wicaksono & Suselo, 2022). A higher CAR indicates a stronger ability for the bank to handle risks associated with each risky loan or asset. When the CAR is high, the bank can finance its operations more reliably. Under favourable conditions, this will contribute significantly to the bank's profitability (Ariyani, 2016). Within Signalling Theory, this ratio acts as a positive indicator that can boost market confidence when capital is employed productively.

Previous research by Permana (2023) found that the CAR significantly affects ROA. This aligns with research by Anugra et al. (2025), which found that banks with sufficient capital are more profitable. However, cross-country research findings indicate that the link between CAR and ROA varies. Jaapar et al. (2025) found that CAR has a significant effect on ROA, because a high CAR can decrease an Islamic bank's profitability, as capital reserves are used to protect against potential risks rather than for profitable ventures.

Non-Performing Financing

The Non-Performing Financing (NPF) ratio is used to evaluate the risk of default in a bank's financing products, representing the proportion between total financing disbursed and the segment classified as problematic financing, such as substandard, doubtful, and non-performing (loss) financing (Wicaksono & Suselo, 2022). Ariyani (2016) in their research, they state that lower NPF (Non-Performing Financing) results indicate the bank will experience higher profits. Conversely, if the NPF level is higher, the bank will incur losses due to the rate of bad-debt recovery. A high NPF indicates that the bank may not be very professional in how it manages its financing activities. (Suwarno & Muthohar, 2018).

Previous research conducted by Murtiningrum (2023) indicates that a higher NPF ratio is associated with a lower ROA. Other research conducted by Muttaqin (2025) discussing how NPF affects profitability in five Islamic Banks in ASEAN reveals that NPF has a significant positive influence on profitability. This excellent outcome demonstrates that various factors, such as aggressive risk management, effective restructuring strategies, and other income sources, can help offset potential losses from NPF.

Financing to Deposit Ratio

The Financing to Deposit Ratio, also known as the liquidity ratio, indicates a bank's ability to allocate funds to parties or customers in need of capital (Riyadi & Rafii, 2018). According to the FDR, a bank's ability to refund depositor withdrawals depends on the credit it extends to provide liquidity. Ariyani (2016) states that a higher FDR value indicates a reduced liquidity capability of the bank. Additionally, FDR is an indicator of a bank's vulnerability and liquidity (Susilowati & Tiningrum, 2019).

Previous research by Permana (2023) found that the liquidity ratio, measured by the FDR, has a significant positive impact on ROA. Research by Bouhider (2021) the effect of FDR on profitability in Malaysia was significant, as increased deposit transmission to Islamic financing positively affects Islamic banks.

HYPHOTESIS

The Effect of the Capital Adequacy Ratio on Return on Assets

The Capital Adequacy Ratio indicates the extent to which a bank's capital covers financial risks and supports lending activity. Substantial capital enables Islamic banks to expand productive financing, thereby increasing income and profitability. Conversely, excessive capital that is not optimally utilised can reduce a bank's profits. Therefore, it is expected that CAR has a positive effect on Return on Assets. The statement is in line with the research Kharazi (202), Ledhem (2022), Muawanah & Imronudin (2021), Murtiningrum (2023), and Suteja & Majidah (2020) which states that CAR has a positive effect on ROA. Previous research indicates that CAR has a positive effect on ROA.

H₁: The Capital Adequacy Ratio has a positive effect on ROA

The Effect of the Non-Performing Financing on Return on Assets

Non-Performing Financing (NPF) indicates the extent of problematic financing and reflects the effectiveness of credit risk management at Islamic banks. As the NPF level increases, the bank's profit-generating capacity decreases. Therefore, NPF is expected to negatively affect Return on Assets (ROA). This ratio measures the proportion of problematic financing that could result in losses, as funds disbursed are not returned within the specified period, preventing the expected profit-sharing income from being received. Previous research by Insani (2021), Kharazi (2022), Permana (2023), Salsabilla & Jaya (202), and Shelda et al. (2025) stated that NPF has a negative effect on ROA. This suggests that NPF positively impacts ROA.

H₂: The Non-Performing Financing has a negative effect on ROA

The Effect of the Financing to Deposit Ratio on Return on Assets

The Financing to Deposit Ratio (FDR) measures how effectively a sharia bank allocates third-party funds to productive loans. It indicates the efficiency of its intermediation role and the level of public confidence in the bank. An extremely high FDR may lead to liquidity problems and reduce profitability. Therefore, the FDR is expected to positively affect ROA, provided the bank maintains a balance between intermediation and liquidity. Previous research by Bouhider (2021), Fachri & Mahfudz (2021), Le et al. (2022), Nugroho et al. (2021), and Shafee et al. (2021) states that FDR improves ROA. This indicates that FDR positively impacts ROA.

H₃: The Financing to Deposit Ratio has a positive effect on ROA

METHOD

This study uses quantitative methods and numerical data to analyze how the capital adequacy ratio, financing ratio, and liquidity ratio affect the profitability of Islamic banks in the ASEAN region. This analysis used ratio data with annual intervals and absolute values from ASEAN's Islamic bank financial reports. The population in this study includes all Full-Fledged Islamic Banks (BUS) operating fully in the ASEAN region, particularly in Indonesia, Malaysia, Brunei Darussalam, and Thailand. Based on data collected from reports from each country's monetary authority namely the Islamic Banking Profile Report from the Financial Services Authority (OJK) of Indonesia, the institution directory from Bank Negara Malaysia (BNM), Brunei Darussalam Central Bank (BDCB), Bank of Thailand (BoT), and the Bangko Sentral ng Pilipinas (BSP) a total of 25 banks that meet the initial criteria were identified as the research population.

The selection of the 2020 – 2024 period is based on considerations of post-COVID-19 economic conditions, which significantly affected the stability and performance of the IB industry in ASEAN. This period marks the phase of economic recovery and financial restructuring, during which many banks adjust their financing, capital, and liquidity policies.

Therefore, this period is relevant for evaluating Islamic banks' resilience and adaptability to global economic shocks.

This study employs an Explanatory Research design aimed at analyzing the relationships between variables and understanding how one variable influences another (Shelda et al., 2025). The method employed for sampling is Purposive Sampling with the following criteria: (1) IB in ASEAN region, namely Indonesia, Malaysia, Thailand, the Philippines, and Brunei Darussalam, (2) IBs that regularly publish financial reports during their research period, (3) Islamic Banks that have financial ratios not exceeding the limits considered unhealthy, for example, FDR ratios not in the 80%-110% range which is considered unhealthy, and (4) Islamic Banks that report ratios in their financial statements, especially the CAR, NPF, and FDR ratios. Based on these criteria, this study selected a total of 10 Islamic Banks from these countries as the sample, as listed in the following table:

Table 1: Research Sample

No.	Bank Name	Country
1	Bank Syariah Indonesia, Tbk	Indonesia
2	BPD Nusa Tenggara Barat Syariah	Indonesia
3	BPD Riau Kepri Syariah	Indonesia
4	Bank Jabar Banten Syariah	Indonesia
5	BCA Syariah	Indonesia
6	Bank Tabungan Pensiunan Nasional Syariah	Indonesia
7	Hong Leong Islamic Bank	Malaysia
8	Public Islamic Bank	Malaysia
9	Islamic Bank of Thailand	Thailand
10	Bank Islam Brunei Darussalam	Brunei Darussalam

Several banks were excluded from the research sample due to incomplete financial reports for the 2020 – 2024 period, rendering panel data analysis impossible. Additionally, some banks faced significant financial problems, indicated by consistently negative growth ratios, which could potentially bias the research results. There were also banks whose data were not explicit or inconsistent in reporting the CAR, NPF, FDR, and ROA ratios, thus failing to meet the criteria for inclusion in the analysis. On the other hand, some banks exhibited extreme financial ratios, such as FDRs below 80% or above 110%, indicating unhealthy liquidity conditions. Considering these factors, this study used only 10 Islamic banks from Indonesia, Malaysia, Thailand, and Brunei Darussalam that met the criteria for data completeness, ratio health, and financial report consistency. This enhances the sample's representativeness in assessing how CAR, NPF, and FDR impact ROA.

This study uses EViews 13 for analysis, employing a panel-data regression that integrates both time-series and cross-sectional data. A panel data regression analysis is utilised to investigate the link between ASEAN Islamic banks' profitability and the independent variables. Panel data regression methods comprise three approaches: CEM, FEM, and REM. Several tests must be performed to establish the optimal model for this research. The first is the Chow test, which compares CEM and FEM as panel-data estimation methods. Second, in panel data estimation, the Hausman test differentiates between FEM and REM, whereas the Lagrange Multiplier test differentiates between CEM and REM.

This study selects the REM as the most suitable model based on the results of panel-data model testing. The selection of REM is based on the characteristics of the research data, including 10 Islamic banks across four ASEAN countries (Indonesia, Malaysia, Thailand, and Brunei Darussalam) with diverse regulatory frameworks, asset sizes, internal bank policies, and market conditions. Therefore, the REM approach is considered the most appropriate for capturing random variation across banks and countries, providing precise estimates of how CAR, NPF, and FDR influence ROA from 2020 to 2024.

RESULTS

Selection of Panel Data Regression Model

Panel data are used to estimate the regression model, and various tests, such as the Chow, Hausman, and Lagrange Multiplier (LM) tests, are conducted to determine the most suitable model for the data.

Table 2: Panel Regression Model Selection

No	Test	Result	Criteria	Model
1	Chow	0,0000	Prob. < 0,05	FEM
2	Hausman	0,5568	Prob. > 0,05	REM
3	LM	0,0000	Prob. < 0,05	REM

The Chow test results, shown in Table 2, indicate that the Prob value supports this conclusion. FEM is preferred over CEM because a p-value below 0.05 leads to the rejection of H_0 and acceptance of H_1 . The Hausman test's p-value of 0,5568 which exceeds 0,05, supports accepting H_0 and rejecting H_1 , indicating that the REM is a suitable regression model for this study. To verify this, the Lagrange Multiplier (LM) test was conducted after choosing REM based on the Hausman test. The LM test produced a Prob. value of 0,0000, less than 0.05, again leading to the rejection of H_0 and acceptance of H_1 , indicating that the REM model is more suitable than CEM.

Hypothesis Testing

In this study, the classical assumption tests were not conducted because the selected panel regression model is REM. The REM model is estimated using Generalized Least Squares (GLS), which technically corrects for heteroscedasticity and autocorrelation in the data. Additionally, the REM approach assumes that the variation between individuals is random and uncorrelated with the independent variables, so the analysis can directly focus on hypothesis testing as follows:

Table 3: Partial Test Results (T-Test)

Variable	Coefficient	Std. Error	t-Statistic	Probability
C	-4,104014	2,878287	-1,425853	0,1607
CAR	0,117153	0,032562	3,597787	0,0008
NPF	-0,045376	0,265496	-0,170912	0,8650
FDR	0,039928	0,032645	1,223093	0,2275

Table 3 indicates that the CAR variable significantly positively influences ROA, with a p-value of 0,0008 (below 0.05) and a positive coefficient. Conversely, the NPF variable has a p-value of 0,8650, exceeding the 0.05 threshold, and features a negative coefficient, implying a negative but statistically insignificant effect on ROA. The FDR variable shows a p-value of 0,8650, which is above 0.05, with a positive coefficient, suggesting a positive yet non-significant impact on ROA. Therefore, only the CAR variable demonstrates a meaningful effect on Islamic bank profitability in this analysis. In contrast, neither NPF nor FDR significantly affects ROA. The panel regression model equation is provided below:

$$ROA = 4.104 + 0.117CAR - 0.045NPF + 0.039FDR$$

Table 4: Results of the Simultaneous Test (F Test)

F-statistic	5,676465
Prob (F-Statistic)	0,002152

According to the simultaneous test (F-test) in Table 4, the F-statistic is 5,676465, with a p-value of 0,002152. Because the p-value is below 0.05, the independent variables significantly influence ROA.

Table 5: Coefficient of Determination

R-squared	0,270182
Adjusted R-squared	0,222585

According to Table 5, the adjusted R-squared is 0,222585, or 22,2%. This means that the contribution of these three variables to the Islamic bank's profitability remains limited, while external factors account for the remaining 77,8% of the variance. These findings suggest that while internal financial parameters significantly affect profitability, other variables also exert substantial influence, and these must be considered when evaluating the economic performance of Islamic banks.

To ensure that the estimated results are not dependent on a single proxy of financial performance, this study further conducts a robustness test by employing an alternative dependent variable, namely Return on Equity (ROE). This approach aims to examine the consistency and stability of relationships among the independent variables, specifically IB's performance as measured by shareholders' returns. Therefore, the robustness analysis is expected to strengthen the validity of empirical findings previously obtained using ROA.

ROBUSTNESS TEST

In this study, robustness testing was conducted by replacing the dependent variable from ROA to ROE to test the consistency of the findings and ensure that the results are not dependent on a single performance proxy. Using ROE as an alternative indicator allows performance analysis from the perspective of Return on Equity, providing an additional view of the roles of capital structure and the efficiency of equity utilisation in determining profitability. This approach also serves as a means of verification to minimise potential model bias and strengthen the validity of the results, while offering a more comprehensive picture of company performance in a broader context, including governance and sustainability aspects that are increasingly relevant in financial literature.

Table 6. Robustness Test

Variable	Coefficient	Std. Error	t-Statistic	Probability
C	7,546240	35,22088	0,214255	0,8313
CAR	-0,383670	0,251046	-1,528288	0,1333
NPF	-10,67306	1,863249	-5,728202	0,0000
FDR	0,278362	0,447340	0,622261	0,5368

The robustness test results using ROE indicate that the three variables generally have consistent directional effects on the main model based on ROA, although some ratios differ in significance. In the ROA model, CAR has a significant positive effect, whereas in the ROE model, it has a negative and insignificant effect. This difference suggests that increasing capital strengthens bank stability, but does not always lead to higher returns to shareholders. When profits do not grow in proportion to equity, ROE tends to decline. The NPF variable continues to show a negative influence in both models, with greater significance in the ROE model, indicating that problematic financing has a greater impact on reducing equity returns than on asset efficiency. Meanwhile, FDR shows a positive but insignificant effect in both tests, suggesting that the intermediation function has not yet consistently influenced performance. Overall, these differences confirm that the relationship among Islamic banks' performance determinants is sensitive to the chosen profitability proxy; therefore, employing ROE as an alternative dependent variable enhances the validity and completeness of the analysis.

DISCUSSION

The Effect of the Capital Adequacy Ratio on Return on Assets

According to the test results, the CAR variable has a positive and substantial influence on ROA, which supports H1. These findings suggest that a sharia bank with a higher CAR is better positioned to generate profit (ROA). In the context of Signaling Theory, this relationship underscores that the Capital Adequacy Ratio serves as a fundamental signal of a bank's financial strength and resilience to external stakeholders, particularly investors and depositors (Valentina & Rasyid, 2022; Waridh et al., 2024). A high CAR indicates that an Islamic bank

possesses a robust capital structure capable of absorbing potential risks and financing losses while providing ample room for productive business expansion (Ariyani, 2016). This strong capital position sends a "positive signal" to the market, reducing information asymmetry between the bank's management and its customers (Shelda et al., 2025). When depositors and investors perceive a high CAR, their trust in the bank's stability increases, which can lead to a more stable base of Third-Party Funds and lower risk premiums (Baldwin et al., 2019).

Furthermore, a high CAR implies the bank's ability to maintain operational sustainability without being constrained by regulatory capital floors. As noted by Nugrohowati et al. (2022) adequate capital serves as a risk buffer and a resource for expanding financing activities, ultimately improving managerial efficiency. This enhanced market trust and operational flexibility drive higher profitability (ROA), as the bank can attract more high-quality financing opportunities and manage its liquidity more efficiently (Fathihani et al., 2025). In Islamic banking, this "signal" of strength is also tied to the principle of *amanah* (trustworthiness). A high CAR reflects the institution's commitment to implementing prudential banking principles aligned with Shariah values, thereby strengthening the bank's reputation and customer loyalty (Belkhaoui et al., 2020). This study's empirical findings show that CAR is not merely a regulatory obligation; it serves as a strategic instrument that enhances stakeholder confidence and improves the financial performance of Islamic banks in the ASEAN region.

From the perspective of Signalling Theory, the findings of this study indicate that a high CAR level can signal to investors, depositors, and regulators the bank's fundamental strength and its capacity to absorb potential losses. A strong capital ratio demonstrates that the bank has adequate risk buffers, thereby enhancing market perceptions of the institution's stability and financial health. In Islamic banking, a high CAR not only serves as a risk-mitigation instrument for financing risks but also reflects the institution's commitment to implementing prudential banking principles aligned with Shariah values such as trustworthiness, caution, and fair risk management (Baldwin et al., 2019). Thus, a high CAR can strengthen the Islamic bank's reputation, increase stakeholder confidence, and ultimately drive higher customer loyalty and access to larger sources of funds.

The findings of this study are consistent with the results of several research studies efforts, Belkhaoui et al. (2020) in their research on 30 IB in GCC countries, they found that efficiency and strong capital are important factors contributing to increased profitability. High capital allows Islamic banks to bear financing risks better and enhances their flexibility in channelling funds to productive sectors that offer high returns. Meanwhile, another study by Nugrohowati et al. (2022) using panel data from 10 countries with the world's largest Islamic financial sectors from 2016 to 2021, the study revealed that CAR has a positive and significant impact on the profitability of Islamic financial institutions. The research explains that adequate capital serves as a risk buffer and a resource for expanding financing activities and improving managerial efficiency, ultimately increasing ROA. Another study by Sobana et al. (2025) explored the profitability of Islamic banks in Indonesia and Malaysia, discovering that CAR has a positive and significant impact on profitability. Adequate capital enhances a bank's resilience to risks and provides opportunities for revenue expansion.

These results are also consistent with the empirical patterns observed in the research data, in which banks with high CAR levels, such as Bank Syariah Indonesia (BSI) and BTPN Syariah, demonstrate stable profitability growth over the 2020 – 2024 period. This condition indicates that optimal capital adequacy is not only a regulatory compliance instrument but also a trust-based capital that builds public trust. In Islamic finance, this reflects the implementation of the principle of *amanah*, under which banks are responsible for safeguarding and managing public funds with care and transparency, in the public interest. A high CAR not only reflects the strength of capital but also indicates Islamic banks' commitment to prudential principles and governance aligned with Sharia values. Therefore, this research confirms that CAR is a

fundamental factor that positively and significantly influences the profitability of IBs in both regional and global empirical contexts.

The Effect of Non-Performing Financing on Return on Assets

According to the test results, the NPF variable exhibits a negative but insignificant impact on ROA, supporting H2. The results indicate that, despite the ongoing negative relationship, a higher problematic financing ratio considerably lowers the profitability of Islamic banks in the ASEAN region. This indicates that as the NPF increases in value, profitability decreases because some of the funds disbursed do not return as expected in terms of timing or value. However, since its influence is not significant, this suggests that some banks have mitigation measures to address financing risks without affecting their profitability. Additionally, with effective risk management practices in place, the negative impact of NPF on profits can be minimized (Rohmawati & Dahruji, 2024). This indicates that although an increase in NPF tends to reduce profitability, its effect is not statistically significant in this study. In other words, the insignificant NPF results during the research period suggest that the bank's intermediation function is operating normally, and economic improvements in the real sector are associated with a decrease in NPF and an increase in ROA, especially after Covid-19 hit.

In the context of Signalling Theory, the NPF ratio serves as a risk-management signal for a bank. When the NPF ratio is low, it signals to the market that the bank has a strong ability to manage financing and maintain asset quality. Conversely, a high NPF becomes a negative signal because it indicates an increased risk of borrower default. However, in Islamic banking, the presence of profit-sharing principles makes financing risk more distributed between the bank and the customer, so fluctuations in NPF do not immediately have a significant impact on profitability. Therefore, although the relationship between NPF and ROA is negative, this study's results show that effective Islamic financing management can mitigate this negative effect to the point of statistical insignificance.

Banks with a high NPF ratio are often viewed as being less cautious in their lending practices management, which can erode customer and investor trust in the bank's ability to maintain long-term profitability (Rahmawati & Pratiwi, 2025). However, the insignificance of the effect of NPF on ROA is consistent with the data in this study, which shows that the NPF ratio in ASEAN Islamic banks during the research period remained relatively stable and low, below 3% (except for the Islamic Bank of Thailand, around 4%-5%), so its impact on profits was not too significant. This suggests that even while NPF negatively impacts profitability, the sharia-based financing system, which emphasises principles of justice and prudence, can maintain financial performance stability (Zulvia et al., 2024). In addition, the implementation of restructuring policies and the increase in loan loss reserves during the post-pandemic period have helped maintain profitability despite financing challenges. In such conditions, negative signals from NPF are insufficient to undermine market confidence in IB's profitability.

From a financial performance perspective, the stability of the NPL ratio indicates the bank management's ability to maintain asset quality, so the negative signals are not strong enough to depress the market. This result aligns with cross-country findings by Belkhaoui et al. (2020), who studied Islamic banks in GCC countries and found that increased NPF reduces their efficiency and profitability. Meanwhile, research by Nasution et al. (2024) revealed that NPF affects sharia banks by reducing income from disbursed money, hence cutting earnings and affecting their profitability. This research aligns with Anugra et al. (2025), which explains that a characteristic of financing in Islamic banking is that contract structures, such as murabahah, which are relatively vulnerable to default, demand stronger risk management to mitigate increases in NPF. Since Islamic banks cannot diversify through speculative instruments, the effectiveness of credit assessment and financing monitoring is an important factor in mitigating the detrimental impact of NPF on financial performance and stability.

Therefore, we can infer that NPF negatively affects ROA, although this effect is not statistically significant. Although problematic financing can reduce profits, effective risk management, the implementation of profit-sharing principles, and cautious financing policies can mitigate these negative impacts. From a Sharia banking perspective, maintaining a low NPF ratio helps uphold the principles of trustworthiness and *maslahah*, thereby supporting sustainable profitability and the stability of the Islamic financial system.

The Effect of Financing to Deposit Ratio on Return on Assets

According to this research, the Financing to Deposit Ratio (FDR) variable has a positive yet insignificant impact on ROA, thereby supporting H3. This positive relationship indicates that the greater the third-party funds allocated for financing, the greater the bank's potential profit. However, its insignificant influence suggests that high fund disbursement does not necessarily result in optimal profitability. Although the research findings indicate that FDR does not have a significant effect on ROA, this indicator remains important in explaining Islamic banks' financial performance with respect to liquidity and financing effectiveness. In this context, liquidity intermediation also has a positive impact on profitability only when managed within optimal limits (Le et al., 2022). Furthermore, the minor results imply that the level of financing from Islamic banks to the community is still not completely matched by the returns generated from those activities.

The imbalance indicates that the increase in financing has not fully matched the increase in the profit-financing ratio, as the returns from the additional financing are not yet optimal. Additionally, based on the data used, the bank's financial ratios are within a healthy range (80%-110%), indicating relatively small variation. This condition renders the variability across banks insufficient to produce a statistically significant effect on profitability. In other words, despite the strong association between FDR and ROA, the high stability of Islamic banks' performance and the homogeneity of financial ratios across banks may explain why FDR's influence on ROA is not statistically significant.

According to Signaling Theory, a mild FDR is perceived by the community and investors as an indication that the bank is effectively performing its intermediation duties. Conversely, an excessively high FDR can be a negative signal, indicating potential liquidity pressure that could reduce operational efficiency. The post-pandemic state of Islamic banks in ASEAN indicates that increased funding has not fully translated into higher profitability, as most financing remains focused on the consumer sector or on post-crisis restructuring. This makes the positive signal from FDR insufficient to drive an increase in ROA. Therefore, the effectiveness of financing intermediation, as reflected in FDR, requires a balance between financing growth and the quality of the bank's managed portfolio.

The research results are in line with Le et al. (2022) which explains that the positive effect of FDR on profitability occurs only when liquidity is managed at an optimal level and, within the framework of Signaling Theory, FDR signals intermediation efficiency. However, when the FDR is too high and risk management is ineffective, the signal turns negative, increasing liquidity exposure. This finding is further reinforced by Bouhider (2021) indicates that FDR positively affects ROA only in Malaysian Islamic banks that maintain stable productivity financing. Therefore, this study emphasizes that liquidity performance signals are positively received by the market only when accompanied by third-party fund management efficiency.

Other studies by M. Lestari & Mandaraira (2025), Jazila et al. (2021), and Syahrir et al. (2023) also show that FDR has a positive but insignificant effect on ROA in Islamic banks. These studies confirm that although a rise often follows an increase in FDR in ROA, the relationship is not statistically significant. This indicates that FDR is not the primary predictor of Islamic bank profitability; therefore, attention should be given to other variables, such as

operational efficiency and financing quality, to enhance the bank's financial performance effectively.

Overall, this study's findings support Signaling Theory within the context of Islamic banking in ASEAN. Financial ratios such as CAR, NPF, and FDR serve as signals to the market and regulators for assessing banks' stability and efficiency. However, the effectiveness of these signals depends on how each bank manages resources and risks internally, as well as on the financial system's maturity in each country. By integrating cross-country research findings, this study confirms that the profitability of IB in ASEAN is influenced not only by internal conditions but also by regional contexts and coordinated Islamic financial policy strategies across countries.

CONCLUSION

This study aims to assess the influence of CAR, NPF, and FDR on ROA, a key indicator of financial performance for ASEAN's Islamic banks, for the period 2020 – 2024. According to the best-fitting model (REM), CAR has a positive and substantial impact on ROA. In contrast, NPF has a negative but non-significant effect, whereas FDR has a positive but non-significant effect. Islamic banks' financial performance in the ASEAN region is influenced by both internal and external variables, including capital adequacy, financing risk, and liquidity, as well as macroeconomic conditions, cross-country regulations, and managerial efficiency (Adjusted $R^2 = 22.2\%$). These findings reinforce the relevance of Signaling Theory, financial ratios are used to analyze the strength, efficiency, and trustworthiness of Islamic banks by investors, regulators, and the general public. High capital adequacy provides a positive signal of resilience and profitability, while controlled levels of problematic financing reflect effective risk management. Theoretically, this research contributes to the understanding of the factors affecting the financial performance of cross-border Islamic banking in ASEAN. Practically, these findings emphasize the importance of optimizing capital management and efficient financing intermediation to maintain a balance between profitability and Shariah-based prudence. Therefore, policy synergy and the integration of the Islamic financial system across ASEAN countries need to be strengthened to promote sustainable, resilient, and globally competitive growth in Islamic banking.

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