

THE INFLUENCE OF NPF AND CAR RATIOS ON THE PROFITABILITY MEASURE OF RETURN ON ASSETS IN ISLAMIC BANKS

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Abstract

This research is driven by the significance of financing risk management and capital adequacy in sustaining stability and enhancing the profitability of Islamic banks in Indonesia. This study seeks to examine the impact of Non-Performing Financing (NPF) and Capital Adequacy Ratio (CAR) on the profitability of Islamic banks, as shown by Return on Assets (ROA), within the 2021–2024 timeframe. The research employed panel regression analysis utilizing a Fixed Effect Model (FEM) technique. The findings indicate that individually, NPF and CAR do not significantly influence ROA; nevertheless, collectively, they exert a significant impact, demonstrating the model's strong capacity to elucidate variations in profitability. The findings suggest that finance risk and capital sufficiency are not direct predictors of profitability; rather, they contribute to a larger performance framework driven by operational efficiency and managerial strategy. This study concludes that enhancing risk and capital management must be harmonized with the optimization of other internal elements to augment the profitability of Islamic banks in Indonesia.

Keywords: Non-Performing Financing (NPF), Capital Adequacy Ratio (CAR), Profitability, Return on Assets (ROA), Islamic Bank

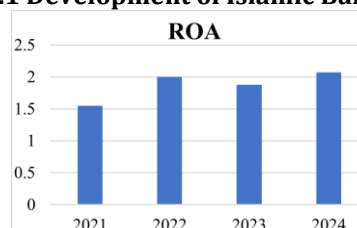
INTRODUCTION

Islamic banks are financial institutions that operate based on Islamic sharia principles, rejecting the interest system (riba) and avoiding investments in sectors considered haram (forbidden), such as alcohol, gambling, and business activities involving usury. The existence of Islamic banks in Indonesia plays a strategic role in supporting financial inclusion, sustainable economic growth, and providing alternatives for people seeking transactions in accordance with sharia principles. As public awareness of sharia-based financial services increases, this sector presents significant opportunities for growth, particularly through innovation in products and services that comply with sharia principles (Yuniar, 2023).

The advancement of Islamic banking in Indonesia is exhibiting a favorable trajectory, especially with the consolidation of many state-owned Islamic banks into Bank Syariah Indonesia (BSI) in 2021. The merger was executed to enhance the standing of Islamic banks in the national market, augment operational efficiency, and optimize asset and resource synergies. This policy underscores the essential role of Islamic banks in the national economy, facilitating productive financing and offering financial options for those aiming to eschew usury practices (Kurnialis et al., 2022).

The financial performance of Islamic banks is typically assessed using profitability metrics, notably Return on Assets (ROA), which indicates the bank's capacity to earn profits from its assets. ROA data for Islamic commercial banks from 2021 to 2024 indicates volatility with a generally constant growth trajectory.

Figure 1.1 Development of Islamic Banking ROA



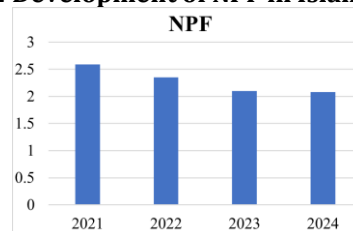
Source: OJK (processed data), 2025

Islamic Commercial Bank ROA data for the 2021–2024 period shows a fluctuating but overall increasing profitability pattern. ROA was recorded at 1.55% in 2021, increased significantly to 2.00% in 2022, then decreased to 1.88% in 2023, before rising again to 2.07% in 2024. This movement pattern

indicates that banks' ability to utilize assets to generate profits continues to improve, although it is still influenced by operational dynamics and the quality of the financing portfolio. This condition indicates that Islamic banks' profitability remains relatively stable and maintained despite facing economic challenges, including the impact of the pandemic and regulatory changes (Rahmawati et al., 2021).

This consistent profitability is intrinsically linked to other supporting criteria, such as the Capital Adequacy Ratio (CAR) and Non-Performing Financing (NPF). The Capital Adequacy Ratio (CAR) is a metric that reflects a bank's capital sufficiency to mitigate potential losses, whereas the Non-Performing Financing (NPF) ratio quantifies the proportion of financing that is not performing. Both ratios are crucial metrics for evaluating a bank's financial stability and its capacity to sustain profitability (Moorcy et al., 2020).

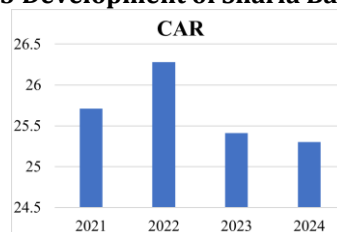
Figure 1.2 Development of NPF in Islamic Banking



Source: OJK (processed data), 2025

Based on data from Islamic Commercial Banks' Non-Performing Loan (NPF) for the 2021–2024 period, a consistent downward trend is observed. The NPF was recorded at 2.59% in 2021, then decreased to 2.35% in 2022, 2.10% in 2023, and then slightly decreased again to 2.08% in 2024. This trend indicates an improvement in the quality of the bank's financing portfolio, meaning the percentage of non-performing financing is decreasing. The continued decline in NPF reflects the bank's effectiveness in managing credit risk and improving asset quality, thus supporting stable profitability and stakeholder confidence in the performance of Islamic banks (Lestari & Masruchin, 2023).

Figure 1.3 Development of Sharia Banking CAR



Source: OJK (processed data), 2025

Data from the Capital Adequacy Ratio (CAR) of Islamic Commercial Banks for the 2021–2024 period indicates that this ratio maintains consistently over 25%, signifying a robust capacity to mitigate loss risk. The Capital Adequacy Ratio (CAR) rose from 25.71% in 2021 to 26.28% in 2022, signifying an enhancement of capital relative to risk-weighted assets. In 2023 and 2024, the Capital Adequacy Ratio (CAR) had a minor decline to 25.41% and 25.3%, respectively, however it sustained a secure level, far exceeding the legal requirement (often 8–12% for Islamic banks). This data indicates robust capital stability and effective risk management among Islamic banks during this period.

The stable CAR and declining NPF indicate the maintained financial health of Islamic banks and provide an appropriate backdrop for analyzing post-merger performance and profitability. Therefore, the 2021–2024 research period was chosen because it encompasses the strategic moment following the merger of Bank Syariah Indonesia (BSI) and changes in the operational dynamics of Islamic banking, including public response to Sharia-based financial services. The research focused on three Islamic commercial banks: BSI, BCA Syariah, and Bank Muamalat Indonesia, as they represent different operational characteristics and business scales, thus providing a more comprehensive picture of the condition and development of the Islamic banking sector in Indonesia (Yanti, 2021).

Despite relatively stable financial conditions, there remains a research gap regarding comprehensive analysis linking CAR and NPF to ROA, particularly in the context of rapid change and the impact of the COVID-19 pandemic. Previous studies tended to separate risk and profitability analyses without integrating them holistically. (Ajizah & Widarjono, 2023) Therefore, this study aims to analyze the

influence of NPF and CAR on the profitability (ROA) of Islamic banks, with the hope of providing practical contributions to risk management, performance improvement strategies, and management decision-making in Islamic banks in the future (Ananta et al., 2024).

METHODOLOGY

This research carries a quantitative study with associative approach method of the influence of Non-Performing Financing (NPF) and Capital Adequacy Ratio (CAR) toward Return on Assets (ROA). Data The research data being used was secondary data in the form of Islamic bank's annual financial statements from 2021–2024, that can be downloaded and printed out through each Islamic bank website. The data was analyzed using eViews software by descriptive statistics, classical assumption tests and Multiple Linear Regression to measure the influence of NPF and CAR on ROA. The study was further enhanced using t-test, F-test and statistical (R^2) to assess the significance and explanatory of the model on the dependent variable (Sugiyono, 2021).

The research population comprised Islamic commercial banks registered with the Financial Services Authority (OJK) throughout the 2021-2024 timeframe. The employed sampling method was purposive sampling, determined by the subsequent criteria:

1. Availability of complete data, banks that provide consistent financial reports for the period 2021–2024.
2. Representing variations in business scale, the sample reflects differences in size and operational characteristics in the Islamic banking industry.
3. Operational stability and analytical relevance, the bank has a fairly stable performance so that the CAR, NPF, and ROA ratios can be analyzed validly.

Based on the predetermined criteria, there are 3 Islamic banks that meet the criteria to be used as samples, namely Bank Syariah Indonesia (BSI), Bank Muamalat Indonesia (BMI), and BCA Syariah.

RESULT AND DISCUSSION

RESULT

Model Selection Test

1. Chow Test

Table 1.1 Chow Test

<i>Cross Section Fixed Effects Test</i>		
Statistics	Prob	Decision
32.879524	0.0000	<i>Fixed Effect</i>

Source: processed data (2025)

The Chow test was used to compare the CEM and FEM models. The test findings indicated a probability value (p-value) of 0.0000. Since this p-value is less than the 5% significance level ($\alpha = 0.05$), the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_1) is accepted. Consequently, the most suitable model for this investigation is the Fixed Effect Model (FEM).

2. Hausman test

Table 1.2 Hausman Test

<i>Random Effects Cross Section Test</i>		
Chi-Sq. Stat	Prob	Decision
101.404593	0.0000	<i>Fixed Effect</i>

Source: processed data (2025)

The Hausman test was conducted to select between FEM and REM. The test results yielded a Chi-square value of 101.404593 and a p-value of 0.0000. Because the p-value is smaller than the 5% significance level ($\alpha = 0.05$), H_0 is rejected and H_1 is accepted. Thus, the more appropriate model to use is the Fixed Effect Model (FEM).

Classical Assumption Test

1. Normality Test

Table 1.3 Normality Test Results

<i>Standardized Residuals</i>	
Probability	0.883826

Source: processed data (2025)

The normality test findings indicate a probability value of 0.883826. According to these results, the probability value of 0.883826 exceeds 0.05, indicating that the data distribution utilized in this regression model is normally distributed.

2. Heteroscedasticity Test

Table 1.4 Heteroscedasticity Test Results

Variable	t-Statistic	Probability
C	0.149099	0.8857
NPF	0.810078	0.4446
CAR	0.429441	0.6805

Source: processed data (2025)

The heteroscedasticity test findings indicate that the probability values for the NPF and CAR variables exceed 0.05, leading to the conclusion that there are no indications of heteroscedasticity in the regression model.

3. Multicollinearity Test

Table 1.5 Multicollinearity Test Results

Variable	NPF	CAR
NPF	1,000,000	0.356989
CAR	0.356989	1,000,000

Source: processed data (2025)

The test findings indicate that the correlation value among the independent variables is less than 0.85, confirming that these variables are devoid of multicollinearity in this regression model.

Regression Analysis

Table 1.6 Regression Test Results

Variables	Coefficient
C	0.019257
X1	-0.054577
X2	-0.022578

Source: processed data (2025)

Based on the multiple linear regression analysis shown in the table, the following regression equation results were obtained:

$$\dots (1) Y_{it} = \beta_i + \beta_1 X_{1it} + \beta_2 X_{2it} + e$$

$$ROA = 0.019257 - 0.054577 \text{ NPF} - 0.022578 \text{ CAR} + 0,05 \dots (2)$$

1. The constant coefficient value (β) is 0.019257. This means that if the profitability variable (Y) is not affected by the NPF (X1) and CAR (X2) variables, its value remains at 0.019257.
2. The NPF (X1) regression coefficient value is -0.054577. This means that if the value of the NPF (X1) variable increases by 1 unit, it will reduce the profitability (Y) variable by 0.054577.
3. The CAR coefficient value (X2) is -0.022578. This means that if the CAR variable value (X2) increases by 1 unit, it will reduce the profitability variable (Y) by 0.022578.

Regression Model Feasibility Test

1. t-test

Table 1.7 t-Test Results

Variables	Probability
C	0.0168
X1	0.6804
X2	0.3381

Source: processed data (2025)

The results obtained from the t-test, as presented in the table above, are as follows:

- a. In the NPF variable (X1), the probability value is 0.6804, so the probability value of 0.6804 > 0.05. Therefore, based on these results, the NPF variable partially does not have a significant effect on profitability.
- b. The CAR variable (X2) obtained a probability value of 0.3381, so the probability value of 0.3381 > 0.05. Therefore, based on these results, the CAR variable partially does not have a significant effect on profitability.

2. f test

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Table 1.8 Results of the f Test

<i>Cross-Section Fixed (Dummy Variables)</i>	
F-Statistic	30.81154
Probability (F-Statistic)	0.000155

Source: processed data (2025)

Based on the results of the f-test, it is known that the f-statistic value is 30.81154 and the F-prob. value is 0.000155. If the prob. value is >0.05 , then the NPF and CAR variables simultaneously have a significant effect on profitability.

3. Coefficient of Determination

Table 1.9 Results of the Determination Coefficient Test

<i>Cross-Section Fixed (Dummy Variables)</i>	
Adjusted R-Square	0.915545

Source: processed data (2025)

The modified R-squared value is 0.915545. This graphic demonstrates that 91% of the variability in the dependent variable (profitability) is accounted for by variations in the independent variables (NPF and CAR) within the model. The residual 9% is attributed to factors or variables external to the regression model.

DISCUSSION

The study's results demonstrate that the Non-Performing Financing (NPF) ratio does not considerably influence Return on Assets (ROA), hence rendering the first hypothesis (H1), which posits that NPF significantly affects profitability, untenable. An increase in non-performing finance (NPF) is anticipated to diminish profitability due to heightened provisioning expenses and decreased income. Nevertheless, empirical findings indicate that the fluctuations in NPF throughout the 2021–2024 timeframe were insufficient to statistically influence ROA. This phenomenon can be elucidated by the capacity of Islamic banks to uphold asset quality by financing restructuring, enhancing risk management, and diversifying portfolios, so rendering the adverse effects of non-performing financing on profits more bearable. This discovery aligns with existing research. (Raharjo et al., 2020), (Moorcy et al., 2020), And (Safitri et al., 2020) who reported that NPF has a negative impact in theory but is not significant in practice, both in the short and long term.

Furthermore, the Capital Adequacy Ratio (CAR) also had no significant effect on ROA, so the second hypothesis (H2), which stated that CAR has a significant effect on profitability, was also rejected. Although a high CAR reflects a bank's ability to bear risk and support financing expansion, strong capital is not always optimally utilized to generate profits. In the 2021–2024 research period, Islamic banks were in a post-merger consolidation and economic recovery phase, so capital adequacy served more as a risk buffer than as an expansion tool capable of increasing ROA. This finding aligns with research (Hasanah & Riyadi, 2021), as well as (Fitriani, 2020), which concludes that CAR is not always directly related to profitability, especially if the bank operates with a stability and prudential orientation.

Although neither variable has a significant partial effect, simultaneous test results indicate that NPF and CAR together significantly influence ROA. This finding confirms that Islamic bank profitability cannot be explained by a single variable alone, but is influenced by a combination of financing quality and capital adequacy. The interaction of these two variables indicates that changes in risk structure and capital adequacy simultaneously explain variations in ROA. This aligns with the view that asset stability and capital strength are the primary foundations for maintaining bank financial performance, particularly in the post-merger and post-pandemic economic climate. Research (Kismawadi et al., 2021) also supports this finding, where NPF and CAR are not significant partially, but have a significant effect when analyzed simultaneously.

Overall, the results of this study indicate that financing risk and capital adequacy factors did not directly determine the profitability of Islamic banks during the study period, but they still played a significant role in influencing financial performance when considered in conjunction with each other. This condition reflects that Islamic bank profitability is more determined by a combination of various aspects, such as operational efficiency, the ability to generate non-financing income, the level of digitalization, and post-merger managerial strategies, which together form a more complex performance structure than is influenced by a single financial indicator alone. This finding opens up opportunities for further research to

include additional variables such as BOPO, FDR, fee-based income, or the quality of real-sector financing to provide a more comprehensive picture of the determinants of Islamic bank profitability in Indonesia.

CONCLUSION

The results show that partial NPF and CAR have no significant effect on ROA, but simultaneously both have a significant effect. This indicates that financing risk and capital adequacy do not determine profitability separately, but play a role when analyzed together as part of a bank's risk structure and capital stability. The high Adjusted R-Square value indicates that the combination of these variables can explain a significant portion of the variation in profitability. Therefore, Islamic banks need to maintain asset quality and capital strength while optimizing other internal factors, such as operational efficiency and managerial strategy, to achieve more stable and sustainable profitability.

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