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*Research Article*

# Post-Pandemic Profitability of Islamic Commercial Banks in Indonesia: Evidence from Financing Risk, Liquidity, Asset Quality, and Capital Adequacy

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## Abstract
This study examines the effects of Non-Performing Financing (NPF), Financing to Deposit Ratio (FDR), Productive Asset Quality (KAP), and Capital Adequacy Ratio (CAR) on the profitability of Islamic Commercial Banks in Indonesia, measured by Return on Assets (ROA), during the 2020–2023 post-pandemic period. The study addresses inconsistent findings regarding the effects of financing quality, liquidity, asset quality, and capital adequacy on profitability. The 2020–2023 period represents the post-pandemic recovery, characterized by shifts in financing demand, risk exposure, and digital transformation. A quantitative approach was employed using secondary data from the annual financial reports of 12 Islamic Commercial Banks published by the Financial Services Authority (OJK). Data were analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS) with SmartPLS 4. The results indicate that NPF, FDR, KAP, and CAR have no significant effect on ROA during the observation period. These findings suggest that Islamic bank profitability is influenced more by operational efficiency and macroeconomic conditions than by these financial ratios. This study provides updated evidence on the determinants of profitability and the resilience of Islamic banking performance in Indonesia during the post-pandemic recovery.

Keywords: NPF, FDR, KAP, CAR, ROA, Islamic Commercial Banks, Financial Performance

JEL Classification: G32, C33, E44

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## 1. Introduction
The banking sector plays a strategic role in supporting national economic growth through its intermediation function, namely collecting funds from the public and redistributing them through financing and investment activities. In Indonesia, the Islamic banking industry has experienced significant growth in recent years, supported by rising public awareness, digital transformation, and government policies that promote financial inclusion.

Islamic Commercial Banks are expected to maintain financial stability and optimize profitability to remain competitive within the national financial system. One of the main indicators of bank profitability is Return on Assets (ROA), which measures a bank's profitability relative to its total assets. A higher ROA indicates better managerial performance in managing productive assets and operational efficiency. Therefore, understanding the factors that influence ROA is essential for strengthening the sustainability and performance of Islamic banking institutions in Indonesia (Sari & Setiawan, 2022).

The financial performance of Islamic banks is strongly influenced by internal banking factors, particularly financing quality, liquidity management, asset productivity, and capital adequacy. However, unlike conventional banks, Islamic banks operate under Sharia principles that emphasize risk-sharing, asset-backed financing, and ethical business practices. These characteristics require Islamic banks not only to pursue profitability but also to maintain financial resilience and compliance with prudential banking principles. Consequently, profitability in Islamic banking reflects both operational efficiency and the institution's ability to balance risk management, financial sustainability, and Sharia compliance.

One of the major issues affecting Islamic bank profitability is Non-Performing Financing (NPF), which indicates the proportion of problematic financing relative to the bank's total financing. High NPF levels can reduce bank income because banks must allocate reserve funds to cover financing losses, thereby decreasing profitability. Several studies have found that NPF negatively affects ROA because problematic financing weakens the bank's operational performance and increases financial risk (Pratama & Haryono, 2021).

Besides financing quality, liquidity management is also an important factor affecting Islamic banks' profitability. Financing-to-Deposit Ratio (FDR) is commonly used to measure banks' ability to channel funds collected from customers into productive financing activities. A balanced FDR indicates effective liquidity management and optimal financing distribution. However, an excessively high FDR may expose banks to liquidity risk because most of the funds collected are distributed as financing. Conversely, a very low FDR indicates that the bank is less effective in utilizing its funds to generate profits. Previous studies reported mixed findings regarding the relationship between FDR and profitability. Some researchers concluded that FDR positively affects ROA because financing activities directly contribute to income generation. At the same time, other studies reported insignificant results due to differences in banks' operational conditions and market dynamics (Nurhayati & Rahmawati, 2023).

Another important aspect influencing profitability is Productive Asset Quality (KAP). Productive assets represent the allocation of bank funds into earning assets such as financing, placements, and securities. The quality of these assets reflects the bank's ability to manage investment and financing activities effectively while minimizing potential losses. Poor productive asset quality may increase operational costs and financing risks, thereby reducing profitability. Islamic banks with strong asset quality management tend to achieve higher operational efficiency and better financial performance. Research by Wibowo and Lestari (2022) emphasized that KAP significantly influences ROA because productive assets are the primary source of bank income.

In addition to financing quality and productive assets, capital strength also plays a crucial role in determining Islamic bank performance. The Capital Adequacy Ratio (CAR) is an indicator used to assess a bank's ability to maintain sufficient capital to cover operational risks and unexpected losses. A higher CAR indicates that the bank has stronger financial resilience and greater capacity to support financing expansion. Adequate capital enables banks to absorb risks more effectively and maintain operational stability during uncertain economic conditions. However, excessively high capital ratios may indicate inefficient utilization of bank resources. Previous empirical studies have yielded mixed results regarding the influence of CAR on profitability. Some studies found a positive relationship between CAR and ROA, while others reported insignificant effects due to differences in management strategies and market conditions (Saputra & Kurniawan, 2021).

The dynamics of Islamic banking profitability in Indonesia have become increasingly important following changes in economic conditions during the 2020–2023 period. This period marks a critical post-pandemic recovery phase characterized by gradual economic reopening, changes in customer financing behavior, accelerated digital transformation, and tighter prudential regulations aimed at maintaining financial system stability. Although Islamic banks demonstrated resilience during the pandemic due to their risk-sharing principles and relatively prudent financing structures, the recovery period has introduced new challenges, including deteriorating financing quality, liquidity pressure, and the sustainability of profitability. Data published by the Financial Services Authority indicated fluctuations in profitability indicators among Islamic Commercial Banks during this period, reflecting differences in financial management strategies, risk exposure, and operational adaptability (Financial Services Authority, 2023).

These conditions raise an important question: do traditional financial indicators such as NPF, FDR, KAP, and CAR continue to explain profitability in the post-pandemic environment? The implementation of stricter prudential regulations, combined with changing economic conditions and evolving customer behavior, may alter the relationship between financial performance indicators and profitability. Therefore, evaluating these financial ratios during the recovery period is essential for understanding the resilience and sustainability of Islamic banking institutions in Indonesia.

Several previous studies have investigated the determinants of Islamic bank profitability; however, the findings remain inconsistent. Research by Pratama and Haryono (2021) concluded that NPF negatively affects ROA, while Nurhayati and Rahmawati (2023) found that FDR has no significant influence on profitability. Meanwhile, Wibowo and Lestari (2022) identified KAP as a significant determinant of profitability, whereas Saputra and Kurniawan (2021) reported inconsistent results regarding the impact of CAR on ROA. These contradictory findings indicate a research gap in the relationship between financial performance indicators and profitability in Islamic Commercial Banks. Furthermore, most previous studies were conducted before the post-pandemic recovery phase, focused on limited observation periods, or examined only selected financial indicators, thereby providing limited evidence regarding Islamic banking resilience during periods of economic transition.

The novelty of this study lies not merely in examining the combined effects of NPF, FDR, KAP, and CAR on profitability, but in evaluating these relationships within the context of post-pandemic Islamic banking resilience in Indonesia. This study integrates perspectives of risk-sharing principles, prudential regulation, financial stability, and profitability performance to provide a more comprehensive understanding of how Islamic Commercial Banks maintain profitability amid economic recovery and structural transformation. Therefore, this research is expected to enrich the empirical literature on Islamic banking profitability and provide relevant insights for policymakers, banking practitioners, and future researchers.

## 2. Literature Review and Hypothesis

### Literature Review

### Return on Assets (ROA)

Return on Assets (ROA) is one of the main indicators used to measure a bank's ability to generate profit from its total assets. ROA reflects management effectiveness in utilizing company assets to obtain earnings and demonstrates the overall financial performance of banking institutions (Jacoub et al., 2020). In Islamic banking, ROA is essential because it indicates the efficiency of asset management in producing income while maintaining compliance with Sharia principles. According to Kasmir (2016), a higher ROA indicates better profitability performance because the company is more effective in utilizing its assets to generate net income. Furthermore, Riyadi (2017) explained that ROA is closely related to operational efficiency and management capability in controlling costs and maximizing returns from productive assets. Research conducted by Shenurti et al. (2022) also found that profitability, as measured by ROA, reflects the success of Islamic banks in managing funds collected from society into productive financing activities. Therefore, ROA becomes an important benchmark for evaluating the financial sustainability and competitiveness of Islamic banking institutions.

**Non-Performing Financing (NPF)**

Non-Performing Financing (NPF) represents problematic financing experienced by Islamic banks due to customers' inability to fulfill their financing obligations. NPF is commonly used as an indicator of financing risk and asset quality in Islamic banking (Santosa et al., 2020). According to Oktrima (2017), an increasing NPF ratio indicates worsening financial quality, which may reduce bank profitability and financial stability. Alfianda and Widianto explained that NPF reflects the proportion of non-performing financing relative to total financing distributed by the bank, with a lower NPF indicating healthier banking performance. Riyadi (2017) emphasized that high NPF levels can increase reserve costs for impairment losses, thereby reducing bank earnings. In Islamic banking, financing quality is highly important because problematic financing can disrupt liquidity and reduce public confidence in the institution. Therefore, maintaining low NPF levels is necessary to support stable profitability and sustainable banking performance.

**Financing to Deposit Ratio (FDR)**

The Financing to Deposit Ratio (FDR) is a liquidity ratio that measures Islamic banks' ability to deploy financing with funds collected from third parties. Hasanah and Riyadi (2021) stated that FDR reflects the effectiveness of banks in channeling public funds into productive financing activities. A higher FDR generally indicates a more optimal financing distribution, although excessively high ratios may increase liquidity risk (Santosa et al., 2020; Stalia et al., 2024). According to Riyadi (2017), FDR also demonstrates the bank's capability to balance liquidity needs with financing activities to achieve profitability targets. Islamic banks are expected to maintain an ideal FDR level to optimize income generation while preserving liquidity stability. Furthermore, Yahya (2011) explained that the financing distribution process in Islamic banks must remain prudent, as aggressive financing expansion without adequate risk management may exacerbate financing problems and negatively affect profitability.

**Capital Adequacy Ratio (CAR)**

Capital Adequacy Ratio (CAR) is a ratio used to measure the adequacy of bank capital in covering risks arising from operational activities and financing distribution. According to Wiyawan et al. (2024), CAR reflects a bank's ability to absorb potential losses from risky productive assets. Higher CAR values indicate stronger capital conditions and better bank resilience in the face of financial risks. Hasan and Reswanty (2021) explained that adequate capital can increase public confidence and support the operational stability of Islamic banks. In addition, Bank Indonesia regulations require banks to maintain minimum CAR levels to ensure sound banking operations. Riyadi (2017) also emphasized that sufficient capital enables banks to expand their financing activities and improve profitability. Therefore, CAR becomes an important indicator in evaluating the financial strength and sustainability of Islamic banking institutions.

**Productive Asset Quality (KAP)**

Productive Asset Quality (KAP) refers to the quality of productive assets owned by banks that generate income. Productive assets include financing, placements, securities, and other earning assets managed by banks (Azizah et al., 2026). According to Maulla and colleagues (2023), KAP is used to assess the health of banks by evaluating the quality of productive asset management. Better productive asset quality indicates lower risk exposure and greater opportunities for banks to earn profits. Kurniasari (2017) stated that high-quality productive assets contribute positively to profitability by generating stable income and minimizing financing risk. In Islamic banking, productive asset management must also comply with Sharia principles to ensure ethical and sustainable business practices. Consequently, effective KAP management is essential for improving bank performance and maintaining financial stability.

**Hypothesis**

**The Effect of CAR on ROA**

The Capital Adequacy Ratio (CAR) reflects a bank's ability to maintain sufficient capital to cover

risks arising from its operational and financing activities. Banks with higher CAR levels tend to have stronger financial stability and greater opportunities to expand productive financing activities, thereby increasing profitability measured by Return on Assets (ROA). According to Riyadi and Rafii (2018), adequate capital allows banks to absorb operational risks and improve public confidence in banking performance. Previous studies conducted by Pratami (2021) and Setyarini (2020) found that CAR has a positive and significant effect on ROA, indicating that higher capital adequacy contributes to better profitability performance in Islamic banks. Therefore, the hypothesis proposed in this study is:
**H1: Capital Adequacy Ratio (CAR) has a positive effect on Return on Assets (ROA).**

**The Effect of NPF on ROA**
Non-Performing Financing (NPF) indicates the level of problematic financing experienced by Islamic banks. A higher NPF ratio reflects worsening financing quality and increases the risk of financial losses, thereby reducing bank profitability. According to Yusuf (2017), increased problematic financing forces banks to allocate larger reserves for impairment losses, thereby reducing their income-generating capacity. Research conducted by Ernawati (2022) and Sri Mulyani (2021) demonstrated that NPF negatively affects profitability by decreasing banking income and operational efficiency due to increased financing risk. Consequently, Islamic banks with lower NPF ratios are expected to achieve higher profitability performance. Therefore, the hypothesis proposed is:
**H2: Non-Performing Financing (NPF) negatively affects Return on Assets (ROA).**

**The Effect of FDR on ROA**
The Financing to Deposit Ratio (FDR) reflects the effectiveness of Islamic banks in channeling third-party funds into financing activities. Higher financing distribution generally increases banks' opportunities to generate profits from financing returns. According to Hasanah and Riyadi (2021), optimal financing distribution contributes positively to bank profitability if liquidity conditions remain under control. Previous studies by Benjamin (2018) and Ariessa and Pravasanti (2018) found that FDR positively affects ROA because effective financing distribution enhances income-generating capacity. However, excessively high FDR levels may increase liquidity risk. Therefore, maintaining balanced financing distribution is important for Islamic banking profitability. The hypothesis proposed is:
**H3: Financing to Deposit Ratio (FDR) has a positive effect on Return on Assets (ROA).**

**The Effect of KAP on ROA**
Productive Asset Quality (KAP) reflects the quality of the productive assets banks manage to generate income. Better productive asset quality indicates lower financing risk and greater income opportunities, which contribute positively to profitability. According to Kurniasari (2017), high-quality productive assets support banking stability and improve earnings performance. Research conducted by Komarudin (2018) and Susila (2020) showed that KAP positively affects profitability because healthy, productive assets enhance operational efficiency and reduce potential losses. Therefore, banks with better productive asset quality are expected to generate higher profitability. The hypothesis proposed is:
**H4: Productive Asset Quality (KAP) has a positive effect on Return on Assets (ROA).**

## 3. Data and Method

**Research Design**
This study applies a quantitative research approach to examine the effect of Non-Performing Financing (NPF), Financing to Deposit Ratio (FDR), Kualitas Aktiva Produktif (KAP), and Capital Adequacy Ratio (CAR) on Return on Assets (ROA) in Islamic commercial banks in Indonesia. Quantitative research is used because the study aims to analyze relationships among variables using statistical methods and numerical data from financial reports. According to Sugiyono (2017), quantitative research is a positivist research method that examines populations or samples and analyzes data statistically to test predetermined hypotheses.

**Population and Sample**

The population in this study consists of all Islamic Commercial Banks registered with the Indonesian Financial Services Authority (Otoritas Jasa Keuangan/OJK) during the 2020–2023 period. The sampling technique used in this study is purposive sampling, which selects samples based on specific criteria relevant to the research objectives. According to Sugiyono (2017), purposive sampling is a nonprobability sampling technique in which samples are selected based on criteria established by the researcher.

The sample criteria applied in this study are as follows: (1) Islamic Commercial Banks registered with OJK during 2020–2023, (2) banks that consistently publish annual financial reports during the observation period, and (3) banks that provide complete financial data related to the research variables. Based on these criteria, 12 Islamic Commercial Banks were selected as the research sample.

**Data Source and Data Collection Technique**

This study uses secondary data from annual financial reports published by Islamic Commercial Banks on the official website of the Financial Services Authority (OJK) and on the respective bank websites. Secondary data are considered appropriate because they provide reliable, documented financial information relevant to the variables examined in this study.

The data collection method used is a documentation study. According to Sugiyono (2017), documentation study is a technique of collecting data through written records, reports, archives, and other official documents related to the research topic. In this study, the researcher collected financial statement data related to ROA, NPF, FDR, KAP, and CAR from the 2020–2023 annual reports of Islamic Commercial Banks.

**Data Analysis Method**

The data analysis method used in this study is Structural Equation Modeling–Partial Least Squares (SEM-PLS) with SmartPLS 4.0. SEM-PLS is considered suitable because it can analyze relationships between variables simultaneously and can process data without requiring strict normality assumptions. According to Wong (2019), SEM-PLS is widely used in financial and business research because it is effective for analyzing complex models and for handling relatively small sample sizes. The analysis process includes both outer and inner model testing. Outer model testing evaluates the validity and reliability of the measurement indicators using convergent validity, discriminant validity, composite reliability, and Average Variance Extracted (AVE). Inner model testing is conducted to evaluate the relationships among latent variables using R-Square, F-Square, path coefficients, t-statistics, and p-values obtained via bootstrapping.

## 4. Results

**Inner Model**

Both endogenous and exogenous latent variables form the structural model. The exogenous latent variables consist of CAR, NPF, FDR, and KAP. The acceptance or rejection of the research hypothesis is based on the P-value: H0 is rejected, and H1 is accepted if the p-value is less than the significance level. However, if the p-value is greater than the significance level, H0 is accepted, and H1 is rejected. The internal model data processed by the researcher using SmartPLS 4.0 are shown in Figure 1.

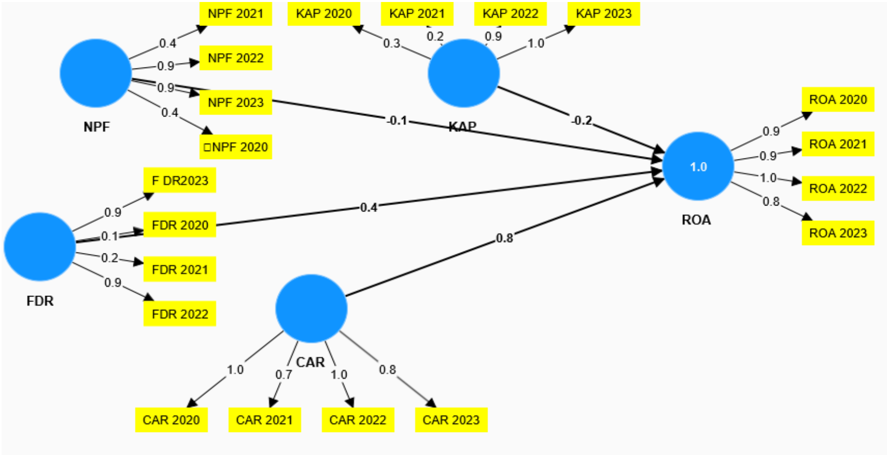


**Figure 1. Inner Model**

This stage is conducted to test the validity and reliability of each indicator construct. A construct is declared valid and reliable if the outer loading value is >0.7.

**R-Square (R2)**
The following R2 values are based on output from smartPLS 4.

**Table 1. R-Square Value Results**

| | R-SQUARE | ADJUST R-SQUARE |
|---|---|---|
| ROA | 0.9 | 0.9 |

Source: Data Processing (2025)

According to Table 1 above, the R-Square value is 0.9, indicating that CAR, FDR, KAP, and NPF account for 90% of the variation in performance, with the remaining 10% attributable to other factors. Therefore, the R-square values for the performance variables are moderate. F-Square (F2). The following F2 values are based on the output from smartPLS 4.

**Table 2. F-Square Results**

| F-square | |
|---|---|
| CAR -> ROA | 0.0 |
| FDR -> ROA | 3.8 |
| KAP -> ROA | 1.4 |
| NPF -> ROA | 0.7 |

Source: Data Processing (2025)

An F-square value below 0.02 is considered small or no effect, a value between 0.02 and 0.15 is considered medium, and a value above 0.35 is considered large or significant. Based on Table 6, an F-square value of 0.0 indicates that the Capital Adequacy Ratio (CAR) variable has a small effect on Return on Assets (ROA). The Financing to Deposit Ratio (FDR) to Return on Assets (ROA) value of 3.8 indicates a significant effect. The Productive Asset Quality (KAP) to Return on Assets (ROA) value of 1.4 indicates a significant effect, and the Non-Performing Financing (NPF) to Return on Assets (ROA) value of 0.7 indicates a significant effect.

**Hypothesis Testing**
Bootstrapping results in SmartPLS 4.0 can be used to test hypotheses. The two-tailed t-value was> 1.96, and the p-value was < 0.05, which is the 5% significance level. Because the study has independent and dependent variables, it has direct effects. The direct effects test, conducted using SmartPLS 4.0's bootstrapping technique, comprised four hypotheses. The results of the direct path coefficient test using bootstrapping are shown in Table 3 below:

**Table 3. Path Coefficient Results**

| Variables | Original Sample | Sample Mean (M) | Standard Deviation (Stadev) | T Statistics | P Value |
|---|---|---|---|---|---|
| CAR -> ROA | 0.8 | 0.6 | 0.7 | 1.2 | 0.2 |
| FDR -> ROA | 0.4 | 0.3 | 0.6 | 0.6 | 0.5 |
| KAP -> ROA | -0.2 | 0.1 | 0.5 | 0.4 | 0.7 |
| NPF -> ROA | -0.0 | -0.1 | 0.5 | 0.1 | 0.9 |

Source: Data Processing (2025)

Based on the results presented in Table 3, the hypothesis testing indicates that none of the independent variables has a significant effect on Return on Assets (ROA). The Capital Adequacy Ratio (CAR) shows a positive but insignificant effect on ROA, as indicated by a path coefficient of 0.8, a t-statistic below 1.96, and a p-value greater than 0.05; therefore, H01 is accepted, and Ha1 is rejected, meaning that CAR does not affect ROA. The Financing to Deposit Ratio (FDR) also shows a positive but insignificant effect on ROA, with a path coefficient of 0.4, a t-statistic below 1.96, and a p-value above 0.05, indicating that H02 is accepted and Ha2 is rejected. Furthermore, Kualitas Aktiva Produktif (KAP) has a negative and insignificant effect on ROA, as reflected by a path coefficient of -0.2, a t-statistic below 1.96 and a p-value greater than 0.05; therefore, H03 is accepted, and Ha3 is rejected. Likewise, Non-Performing Financing (NPF) demonstrates a negative but insignificant effect on ROA, with a path coefficient close to zero, a t-statistic below 1.96, and a p-value above 0.05, indicating that H04 is accepted and Ha4 is rejected, meaning that NPF does not affect ROA.

## 5. Discussion

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

The results of this study indicate that Capital Adequacy Ratio (CAR) does not have a significant effect on Return on Assets (ROA) in Islamic Commercial Banks during the 2020–2023 period. Although the path coefficient is positive, the p-value exceeds 0.05, indicating that CAR is not a significant determinant of profitability. This finding suggests that capital adequacy was not the primary factor driving profit generation during the post-pandemic recovery.

Adequate capital remains important for maintaining financial stability and compliance with prudential regulations. However, during the recovery period, Islamic banks tended to maintain higher capital reserves to absorb potential risks and strengthen resilience rather than directly increase profitability. As a result, variations in CAR among banks were insufficient to explain ROA differences significantly.

This finding differs from the studies of Setyarini (2020) and Pratami (2021), which reported a positive effect of CAR on profitability. Hasan and Reswanty (2021) also argued that stronger capital adequacy contributes to profitability through operational expansion and effective risk management. However, in the context of post-pandemic recovery, profitability may have been influenced more strongly by operational efficiency, digital transformation, and macroeconomic conditions than by capital adequacy alone.

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

The results show that Non-Performing Financing (NPF) does not significantly affect ROA. Although the coefficient is negative, indicating an inverse relationship, the effect is statistically insignificant. Therefore, changes in financing quality did not significantly influence profitability among Islamic Commercial Banks during the observation period.

The implementation of financing restructuring policies may explain the insignificant relationship, as well as the improved risk management systems and regulatory support during the post-pandemic recovery period. These measures enabled Islamic banks to mitigate the adverse effects of problematic financing and maintain profitability despite fluctuations in NPF levels.

This finding is inconsistent with the studies conducted by Ernawati (2022) and Sri Mulyani (2021), which found that NPF negatively affects profitability. Yusuf (2017) also explained that increasing problematic financing reduces income because banks must allocate additional reserves for potential losses. Nevertheless, the present findings suggest that the resilience of Islamic banks and regulatory support mechanisms during 2020–2023 may have weakened the direct impact of NPF on profitability.

**The Effect of Financing to Deposit Ratio (FDR) on Return on Assets (ROA)**
The findings indicate that Financing to Deposit Ratio (FDR) does not have a significant effect on ROA. Although financing distribution is a core activity of Islamic banking, the results suggest that differences in financing levels did not significantly influence profitability during the post-pandemic recovery phase. One possible explanation is that Islamic banks adopted more cautious financing strategies to balance profitability objectives with liquidity preservation and risk management requirements. Consequently, increases in financing activities did not automatically translate into higher profits, as banks prioritized stability and financing quality over aggressive expansion.

This result differs from the findings of Ariessa and Pravasanti (2018) and Benjamin (2018), who reported that FDR positively affects profitability. Hasanah and Riyadi (2021) also suggested that effective financing distribution enhances income generation. However, the post-pandemic environment created unique challenges in which financing growth alone was insufficient to significantly improve profitability, as banks also faced pressures related to operational costs, risk management, and market uncertainty.

**The Effect of Productive Asset Quality (KAP) on Return on Assets (ROA)**
The results reveal that Productive Asset Quality (KAP) does not significantly affect ROA. Although productive assets represent an important source of income for Islamic banks, the statistical evidence indicates that differences in KAP among banks did not significantly explain profitability during the 2020–2023 period.

A possible explanation is that most Islamic Commercial Banks maintained relatively stable productive asset quality due to stricter supervision and prudent asset management practices. As a result, variations in KAP were limited and did not substantially influence profitability. Furthermore, profitability during the recovery period may have been affected more by operational efficiency, digital banking initiatives, market competition, and macroeconomic factors than by productive asset quality alone.

This finding differs from those of Komarudin (2018) and Susila (2020), who found that KAP positively influences profitability. Kurniasari (2017) also argued that high-quality productive assets contribute to stable income generation and better banking performance. However, the findings of this study indicate that, during the post-pandemic recovery period, productive asset quality was not a significant determinant of profitability among Islamic Commercial Banks.

Overall, the findings suggest that CAR, NPF, FDR, and KAP were not significant determinants of profitability in Islamic Commercial Banks during the 2020–2023 period. This result indicates that broader operational and macroeconomic factors more strongly influenced profitability than individual financial ratios. The findings also highlight the resilience of Islamic banks in maintaining profitability despite fluctuations in capital adequacy, financing quality, liquidity conditions, and productive asset quality during the post-pandemic recovery period.

## 6. Conclusion
This study aimed to examine the effects of Non-Performing Financing (NPF), Financing to Deposit Ratio (FDR), Productive Asset Quality (KAP), and Capital Adequacy Ratio (CAR) on the profitability of Islamic Commercial Banks in Indonesia, measured by Return on Assets (ROA), during the 2020–2023 period. The empirical results indicate that CAR, NPF, FDR, and KAP do not have a statistically significant effect on ROA. These findings suggest that variations in capital

adequacy, financing quality, liquidity, and productive asset quality were insufficient to explain differences in profitability among Islamic Commercial Banks during the post-pandemic recovery period.

The absence of significant relationships may reflect the unique characteristics of the 2020–2023 period, during which Islamic banks operated under heightened prudential regulations, financing restructuring policies, economic recovery programs, and increasing digital transformation. These structural changes may have reduced the direct influence of traditional financial ratios on profitability. The findings also indicate that profitability may have been more strongly affected by factors not included in this study, such as operational efficiency, cost management, bank size, digital banking adoption, market competition, and broader macroeconomic conditions.
This study contributes to the Islamic banking literature by providing evidence that conventional financial performance indicators may not fully explain profitability during periods of economic transition and recovery. The findings highlight the importance of considering broader institutional and environmental factors when assessing the determinants of Islamic banking performance.

Although CAR, NPF, FDR, and KAP did not show a statistically significant effect on profitability, these indicators remain important components of prudent banking management and financial stability. Therefore, Islamic banks should continue to maintain adequate capital levels, monitor financing quality, manage liquidity carefully, and preserve the quality of productive assets as part of sound risk management practices and regulatory compliance.

The findings do not imply that these financial ratios are unimportant; rather, they suggest that improvements in these indicators alone may not necessarily lead to higher profitability during the post-pandemic recovery period. Bank management should therefore complement prudential financial management with strategies to improve operational efficiency, digital innovation, service quality, and business diversification, thereby strengthening long-term profitability and competitiveness.

## Recommendation

Islamic Commercial Banks should prioritize maintaining sound financing quality, adequate liquidity, capital resilience, and productive asset quality as part of prudent banking practices rather than as direct drivers of profitability. Management is encouraged to establish measurable targets, such as maintaining NPF below the regulatory threshold, optimizing liquidity ratios, and strengthening risk-monitoring systems. Future studies should employ panel data regression models, extend the observation period, and incorporate additional variables, including BOPO, bank size, inflation, GDP growth, digital banking adoption, and Sharia governance. Comparative analyses between Islamic and conventional banks are also recommended to provide broader insights into the determinants of profitability and banking resilience.

## Limitations and avenues for future research

This study is limited to Islamic Commercial Banks in Indonesia during the 2020–2023 period. It only examines the effects of NPF, FDR, KAP, and CAR on profitability using the SEM-PLS method. The use of secondary financial data may also limit broader interpretations of banking performance. Future research is recommended to include additional variables, longer observation periods, comparative banking sectors, and alternative analytical methods to obtain more comprehensive findings.

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