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THE ROLE OF PROFITABILITY AND LIQUIDITY IN MEETING THE FEASIBILITY STANDARDS OF SHARIA BANKING WITH CAPITAL ADEQUACY AS A MODERATING VARIABLE IN INDONESIA

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ABSTRACT

This study investigates the impact of profitability and liquidity on bank viability, considering capital adequacy as a moderating factor in Islamic commercial banks in Indonesia. The research sample consists of 9 Islamic commercial banks from 2018 to 2022. The dependent variable, bank survival, is assessed using Return on Assets (ROA). The independent variable, profitability, is measured by Return on Equity (ROE), with Capital Adequacy Ratio (CAR) as the moderating variable. Control variables include Net Profit Margin (NPM), Operational Efficiency (BOPO), and Loan to Deposit Ratio (LDR). Analysis is conducted using multiple linear regression with a Fixed Effects model. The findings indicate that capital adequacy functions as a pure moderator, enhancing the relationship between NPM and ROA while weakening the relationship between ROE and ROA.

keywords: *Profitability, ROA, ROE, NPM, Liquidity, LDR, Capital Adequacy, Islamic bank.*

ABSTRAK

Penelitian ini menginvestigasi dampak profitabilitas dan likuiditas terhadap standar kelayakan bank, dengan mempertimbangkan kecukupan modal sebagai variabel pemoderasi pada bank umum syariah di Indonesia. Sampel penelitian terdiri dari 9 bank umum syariah selama periode 2018-2022. Variabel dependen, kelayakan bank, diukur dengan menggunakan Return on Assets (ROA). Variabel independen, profitabilitas, diukur dengan Return on Equity (ROE), dengan variabel moderasi Capital Adequacy Ratio (CAR). Variabel kontrol meliputi Net Profit Margin (NPM), Efisiensi Operasional (BOPO), dan Loan to Deposit Ratio (LDR). Analisis dilakukan dengan menggunakan regresi linier berganda dengan model Fixed Effect. Temuan menunjukkan bahwa kecukupan modal berfungsi sebagai moderator murni, meningkatkan hubungan antara NPM dan ROA sementara memperlemah hubungan antara ROE dan ROA.

Kata Kunci: *Profitabilitas, ROA, ROE, NPM, Likuiditas, LDR, Kecukupan Modal, Bank Syariah.*
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Introduction

In carrying out its functions, the Islamic banking system not only collects funds from the public but, as a banking institution, has its own motives for achieving good profits. At the same time, it is also faced with risks (Fitri & Sriyana, 2023). This poses a unique challenge for the Islamic banking industry in Indonesia. The introduction of Islamic banking in Indonesia began with the establishment of PT Bank Muamalat in 1991, which started with an initial capital of 84 billion shares (Handayani et al., 2020). One important aspect of the Indonesian banking system is the transition from conventional banking to Islamic banking. This can be traced back to 2008 when the first legal protection law was applied to Islamic banking (Aun et al., 2019). In this regard, Islamic banking is still relatively small within the Indonesian banking industry, in terms of the number of institutions and its assets. However, Islamic banking in Indonesia has experienced rapid development (Widarjono, 2022). The rapid growth has triggered researchers' interest in examining the performance of Islamic banks in Indonesia. This topic is important to study in more depth because, in addition to serving as financial intermediaries, Islamic banks are also vulnerable to economic shocks, both domestic and international. This indicates that, specifically, the growth rate of Islamic banks has shown a positive trend. This can be seen from the statistical data of the Financial Services Authority (OJK) in 2022, which shows that the average asset growth of Islamic banks was 15.63%, higher than in 2021 at 13.87%. Meanwhile, conventional banks had a lower growth rate of 9.50% in 2022. This average growth rate can vary across banks and specific time periods.

In this case, the research will provide arguments related to its operational aspects by using various ratios of profitability and liquidity to enhance the standards of bank viability and assess the performance success of a bank. One of the measures used to determine a bank's viability standard is Return on Assets (ROA) (Mawaddah, 2015), The use of assets as a tool to assess the efficiency and effectiveness of a company in generating profit through the utilization of its assets. It is crucial for banks to make decisions actively to manage their assets amid the increasingly evolving developments (Dabiri, 2017). According to Handley-Schachler et al., (2007), a bank's financial performance is best measured by the profit generated from its activities, with higher profits generally indicating superior performance. One of the key profitability ratios used to evaluate a bank's performance is Return on Assets (ROA). In Indonesia, Bank Indonesia assesses a bank's profitability using two main indicators: ROA and the Operational Cost to Operating Income ratio (BOPO). Bank Indonesia places emphasis on ROA, which is significantly influenced by public deposits (Dendawijaya, 2009). As a result, this study uses ROA as a measure of profitability. Return on Assets is a key metric for effectively assessing a bank's profitability (Ongore & Kusa, 2013). One of the factors that affects a bank's feasibility standards is the bank's liquidity, which refers to the bank's ability to meet its maturing obligations (Purwoko & Sudiyatno, 2013). To fulfill its obligations effectively, a bank must have good resource management, particularly in relation to short-term liabilities. Short-term liabilities can include customer withdrawals and/or immediate credit demands. Typically, the Loan Deposit Ratio (LDR) is used to assess the bank's liquidity level. However, Islamic banks do not use the term "credit" but rather "financing." (Wardana & Widyarti, 2015). Thus, the term LDR is referred to as the Financing to Deposit Ratio (FDR) as an indicator of a bank's ability to repay withdrawals by depositors through the financing provided as a source of the bank's liquidity.

Capital adequacy refers to a bank's capacity to allocate funds for business development and mitigate operational loss risks. A higher capital level enables banks to pursue more profitable investment opportunities, as it gives management greater flexibility to utilize funds

effectively. Capital adequacy is typically measured using the Capital Adequacy Ratio (CAR). This ratio reflects the bank's ability to meet capital requirements to cover potential losses from its operational activities and to support business growth. CAR also indicates the extent to which risk-weighted assets, such as credit, market risk, operational risk, securities, and interbank receivables, are funded by the bank's own capital rather than external funding sources. In another argument (Amiruddin, 2022; Supriyadi, 2020), the extreme threat posed by the global financial crisis in 2018 demonstrated the resilience of Islamic finance. Throughout 2019, the performance of Indonesia's Islamic banking sector remained relatively stable. However, as 2020 began, the COVID-19 pandemic emerged and spread across various countries, particularly Indonesia. COVID-19 had a significant impact on the global economy, weakening many sectors, including Islamic banks. Nevertheless, empirical evidence from past crises suggests that Islamic banks tend to withstand such challenges. This resilience has been observed in both Islamic commercial banks (BUS) and Islamic business units (UUS). Previous studies indicate that capital adequacy can enhance bank profitability (Saputra & Budiasih, 2016; Sudarsana & Suarjaya, 2019). Specifically, it shows that the Capital Adequacy Ratio (CAR) has a positive and significant effect on Return on Assets (ROA). Adequate capital can build public trust by demonstrating that the bank is capable of managing potential risks associated with its operations. According to Bank Indonesia Regulation No. 10/15/PBI/2008, banks in Indonesia are required to maintain a minimum capital level of 8% of Risk Weighted Assets (RWA).

As a financial intermediary institution, a bank has the function of collecting funds and distributing them to the public. Liquidity, as a source of income from financing, is closely related to profitability, as liquidity indicates the extent to which working capital required for bank operations is available. The increase in the role of bank assets in generating profit must take into account the interests of third parties as sources of the bank's funds (Fitri, 2016). Therefore, banks are required to maintain adequate minimum capital to safeguard third-party interests. This serves as the basis for determining the role of capital adequacy as a moderating factor. This study aims to investigate the impact of profitability and liquidity on the sustainability standards of Islamic banks in Indonesia, with the capital adequacy ratio as a moderating factor. This research is significant because the fundamental concept of Islamic banking revolves around a financing system based on profit-sharing contracts. This argument is explored through empirical research to determine whether this system can be strengthened (Azmat et al., 2015; Widarjono, 2022). This study examines the impact of profitability and liquidity on the sustainability of Islamic banks in Indonesia, using capital adequacy as a moderating factor. Key profitability ratios considered include ROE, NPM, and BOPO, while liquidity is assessed using the LDR ratio. ROA is used as a measure of bank sustainability, and CAR serves as the moderating variable. Thus, this research explores to what extent each profitability and liquidity ratio influences the sustainability standards of Islamic banks.

Literature Review

Probability of Compliance with Banking Standards

Profitability is an important factor influencing the operational standards of Islamic banks. Furthermore, capital adequacy serves as the primary moderating variable in this study, capable of impacting the relationship between profitability and the established standards of Islamic banking. This relationship is explored in detail in the following literature review.

Profitability is a metric used to evaluate a bank's ability to generate profit (Lase et al., 2022). To attract investors, banks need to maintain consistent profitability (Muliawati &

Khoiruddin, 2014). In the banking sector, Return on Assets (ROA) is commonly used to evaluate financial performance, and this study focuses on ROA as the primary standard. Furthermore, financial performance can be influenced by credit risk, which negatively impacts profitability. The Non-Performing Financing (NPF) ratio, used in this study, measures the extent to which problematic loans can be repaid (Amijaya & Alaika, 2023). A high NPF (Non-Performing Financing) ratio has a negative impact on ROA (Return on Assets) (Abusharbeh, 2016). Similarly, the ratio of Operating Expenses to Operating Income (BOPO) has a significantly negative effect on ROA (Sitompul & Nasution, 2019).

Based on previous research and logical reasoning, it can be concluded that there is a relationship between profitability and liquidity on banking feasibility standards. The researcher formulates the hypothesis as follows:

H1: Profitability (measured by ROE, NPM, and BOPO) has a positive effect on banking feasibility standards (measured by ROA).

Liquidity in Relation to Banking Eligibility Standards

Liquidity is an important instrument for banks, allowing them to convert liabilities into assets quickly and repay debts promptly, both in the short and long term (Hermuningsih et al., 2023). In addition, while banks protect their customers from liquidity problems, they also face liquidity risk, especially when many customers withdraw their funds at the same time (Nadratuzzaman Hosen et al., 2021). The use of signaling theory can further explain the relationship between liquidity and bank profitability, with capital adequacy acting as a moderating factor (Meliza et al., 2024). In general, signaling theory serves as a basic concept in explaining how liquidity risk affects profitability. In the banking sector, an increase in liquidity risk can signal potential problems for the bank, potentially leading to a decrease in revenue and profitability (Zafrizal et al., 2021).

Pangemanan et al., (2017), explains that bank performance is often judged by profit growth, with higher profits indicating better performance. Meanwhile, research by Muarif et al., (2021) and Muliawati & Khoiruddin (2014) showed that liquidity has a significant positive effect on the return on assets (ROA) of Islamic commercial banks. However, they also noted that high liquidity may lead to a decrease in the bank's assets as it meets short-term liabilities, which may ultimately hurt the bank's financial performance and result in losses. Furthermore, another study found that the average liquidity position is more favorable among Islamic banks compared to commercial banks in the UAE. Research by Tabash & Hassan (2017), concluded that liquidity, along with capital adequacy, is an important factor in determining the profitability of Islamic banks. In addition, the literature shows that financing-to-deposit ratios (FDR) and non-performing financing (NPF) negatively affect the profitability of Islamic banks. Effective asset quality management, especially by reducing NPF, is crucial to improving profitability (Purbaningsih & Fatimah, 2018).

H2: Liquidity (measured by Loan to Deposit Ratio, LDR) affects the bank's survival standard (measured by ROA).

Capital Adequacy Moderates the Relationship of Probability to Banking Appropriate Standards

Capital adequacy, often measured by the Capital Adequacy Ratio (CAR), is critical to maintaining stable banking standards. According to Amalia (2023), Inadequate capital can impair a bank's ability to function properly. Adequate capital is critical to a company's

performance, as emphasized by Muliawati & Khoiruddin (2014); Purbaningsih & Fatimah (2018), found that while liquidity affects banking performance, CAR has no significant impact on financial performance, even when mediated by non-performing financing (NPF). This suggests that short-term financing is more beneficial than long-term, a view supported by Commercial Lending Theory, which argues that short-term lending is more beneficial due to its impact on bank performance through reduced defaults (Kogin, 2018). In a moderation study by Jayanti & Sartika (2021), it was found that credit risk (as measured by CAR) did not moderate the relationship between lending levels and profitability. This suggests that higher levels of capital adequacy may actually correlate with lower profitability for banks. The literature suggests that profitability, liquidity, and capital adequacy are key factors in assessing the viability of Islamic banks. Further research can explore the interaction of these factors in the Indonesian Islamic banking sector in more detail.

H5: Capital Adequacy Moderates the Relationship between Profitability and Banking Adequacy Standards

Capital Adequacy Moderates the Relationship between Liquidity and Banking Appropriate Standards

Capital adequacy is the capital reserves held by the bank to support the risk of financial losses incurred by risky assets. If the bank has a strong capital base, the bank can make changes in the amount of fees with a low risk profile (Febriekasari & Sudarsi, 2023). A well-capitalized and well-liquidated bank is better able to withstand economic pressures and financial risks, thus meeting the eligibility standards expected by regulators. An imbalance between capital adequacy and liquidity may result in financial instability. For example, a bank with low capital but high liquidity may be vulnerable to insolvency risk in the long run. Conversely, a bank with high capital but low liquidity may have difficulty meeting short-term obligations (Rose & Hudgins, 2012).

Dewi & Dewi (2022) in his estimation found that capital adequacy is able to affect liquidity and banking standards. In line with Sari (2022), which revealed the same thing, capital adequacy is able to affect liquidity and banking standards.

H4: Capital adequacy is able to moderate the relationship between liquidity and banking standards.

Data and Research Methods

Descriptive Analysis

Table 1: List of BUS and UUS in Indonesia

No	Bank Name
1	PT. Bank Maybank Syariah Indonesia
2	PT. Bank Muamalat Indonesia
3	PT. Bank CMB Niaga Tbk
4	PT. Bank Tabungan Negara Tbk
5	PT. Bank Panin Dubai Syariah
6	PT. Bank Aceh Syariah
7	PT. Bank Riau Kepri Syariah
8	PT. Bank Permata Tbk
9	PT. Bank BTPN Syariah Tbk

This study uses quantitative panel data analysis, utilizing descriptive statistics of secondary data to provide an overview or description in the form of average values (mean), as well as minimum and maximum values. The population of this study is Islamic Commercial Banks (BUS) and Islamic Business Units (UUS) registered with the Financial Services Authority (OJK) and the Indonesia Stock Exchange (IDX), which can be accessed through www.ojk.go.id and www.idx.co.id during the period 2018-2022. The sample selection in this study used the purposive sampling method, which can be explained through the criteria on table 1.

Variables and Data Analysis

In this study, the dependent variable used is bankable standard by calculating the ratio (ROA), the independent variable is profitability by calculating the ratio (ROE, NPM, BOPO) and liquidity (LDR) as independent variables, as well as capital adequacy (CAR) as a moderating variable. This can be explained through the operational definition of variables and their measurements as follows:

Table 2: Operational Definition of Variables

No	Variables	Definition	Indicator
1	The appropriate standard for banks is return on assets (ROA).	A ratio that measures the effectiveness of a company's management in managing its assets.	$ROA = \frac{Profit\ after\ tax}{Total\ assets} \times 100\%$
2	Return on Equity (ROE)	shows the ability of own capital to generate profits. ROE is calculated using net income after deducting interest expenses and taxes. For capital used in the calculation of ROE is own capital used for bank activities.	$ROE = \frac{Net\ profit}{Total\ assets} \times 100\%$
3	Net Profit Margin (NPM)	This ratio is used to measure the profit margin on sales. It is calculated by comparing net profit after tax with net sales.	$NPM = \frac{Profit\ after\ tax}{Net\ sales} \times 100\%$
4	Operational Expenses/ Operational Revenue" (BOPO)	A bank's ability to optimize operational costs by taking into account the expenses incurred to generate operational revenue	$BOPO = \frac{Operational\ costs}{Operating\ income} \times 100\%$
6	Liquidity Loan to Deposit Ratio (LDR)	Liquidity analysis is conducted to evaluate a bank's capability in managing liquidity risk and to assess its ability to maintain an optimal level of liquidity.	$LDR = \frac{Total\ credit}{Total\ deposits} \times 100\%$
7	Capital Adequacy Ratio (CAR).	This indicates the bank's ability to provide funds for business development and absorb potential loss risks arising from its operations.	$CAR = \frac{Bank\ capital}{ATMR} \times 100\%$

It can be explained that this literature review is complemented by a data analysis technique using panel data, which combines time series and cross-sectional data (Maryanti et al., 2022). Before conducting the test, an estimation model can be selected, including the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM), which are evaluated using the Hausman Test and the Breusch-Pagan Lagrange Multiplier Test (BPLM) (Yastika et al., 2020). Before proceeding to the next stage, classical assumption tests, such as multicollinearity and heteroscedasticity tests, can be conducted with the aid of the EViews 12 application. This can be explained using the following mathematical equation:

$$ROA_{it}=\beta_1 ROE_{it}+\beta_2 CAR_{it}+\beta_3 ROE_{it} * CAR_{it}+\beta_5 \sum Kontrol_{it}+e_{it} \quad (1)$$

In this study, ROA is the dependent variable, ROE is the independent variable, and CAR is the moderating variable. Then the control variables are NPM, BOPO, and LDR. Meanwhile, α and β are constants, i and t are cross section and time series, and e is part of the standard error term.

Findings and Discussion

Furthermore, in this study, researchers conducted tests to determine the best estimation model through testing: the Chow test, the Lagrange multiplier (LM) test, and the Hausman test. The test results are as follows:

Table 3: Model Selection Test Results

Test	Prob.	Best Model
Chow Test	0.0000	Fixed Effect Model
Hausman Test	0.0066	Fixed Effect Model
LM Test	0.0000	Random Effect Model

Based on Table 3, it can be concluded that the Fixed Effect Model (FEM) is the best estimation model. By using FEM, this study has accommodated the BLUE problem because FEM has used Generalized Least Square (GLS). Furthermore, to determine the correlation between independent variables, this study conducted a correlation test and multicollinearity test.

Table 4: Correlation and Multicollinearity Test Results

	Y (ROA)	X1 (ROE)	X2 (NPM)	X3 (BOPO)	X4 (LDR)	Z (CAR)
Y (ROA)	1	0.77471337	-0.0328758	-08221422	0.32304863	0.74292484
X1 (ROE)	0.77471337	1	-0.1929050	-0.8428186	0.26945749	0.48322065
X2 (NPM)	-0.0328758	-0.1929050	1	0.14603202	0.44503750	0.09474188
X3 (BOPO)	-0.8221422	-0.8428186	0.14603202	1	-0.3354144	-0.5791937
X4 (LDR)	0.32304863	0.26945749	0.44503750	-0.3354144	1	0.11738820
Z (MOD)	0.74292484	0.48322065	0.09474188	-0.5791937	0.11738820	1

The test results above show that there is no multicollinearity because the value of this test in each variable does not show more than 1 or 100 percent.

Table 5: Heteroscedasticity Test Results (Park Test)

Variable	Coefficient	Coefficient	Std. Error	t-Statistic
X1 (ROE)	-0.074130	0.037842	-1.958966	0.592
X2 (NPM)	-0154972	0.0218606	-0.708912	0.4837
X3 (BOPO)	0.018499	0.031876	0.580346	05659
X4 (LDR)	0.003277	0.010080	0.325109	0.7473
Z (MOD)	-0.010195	0.017469	-0583626	0.5637
C (ROA)	-0.324933	3.067500	-0.105928	0.9163

From the data above, the p-value for the Park test method on each variable is higher than 0.05, indicating that the data in this study are free from heteroscedasticity.

Tabel 6: Panel Data Regression Result

Variable	(1) ROA	(2) ROA	(3) ROA	(4) ROA
ROE	0.204982***	0.182901***	0.176354***	-0.033913
NPM	0.190867	0.171435	0.142700	1.190537**
CAR			-0.010929	0.020325
ROE*CAR				0.008328***
NPM*CAR				-0.064347***
BOPO		-0.027735	-0.032457	-0.009042
LDR		0.002948	0.002029	-0.003696
Constant	-0.031756	2.261199	3.072621	1.294152
R-Square	0.968572	0.967328	0.966592	0.980539

Notes: *,**,*** denotes Level of significance at 10%, 5%, 1% level.

From the table above, it can be explained that model (1) shows the results of testing the effect of ROE and NPM on ROA without involving control variables. The results show that ROE has a significant effect on ROA, with a coefficient of 0.204 at a significance level of 1 percent. In addition, NPM has no impact on ROA. The R-squared value is 0.968, or 96 percent. Further regression analysis in model (2), which includes control variables, shows that ROE continues to have a significant positive effect on ROA, with a coefficient of 0.182 at the 1 percent significance level. NPM remains unaffected by ROA, and the R-squared value is 0.967, or 96 percent. In model (3), this study adds the capital adequacy variable (CAR) into the research model. The results show that CAR does not affect ROA. In addition, ROE has a significant positive impact on ROA, with a significance level of 1 percent. The control variables, BOPO and LDR, consistently show no effect on ROA. The R-squared value for this model is 0.966, or 96 percent.

In model (4), this study adds the MOD variable, namely the interaction between the ROE variable and CAR as moderation. The results showed that CAR does not affect ROA. In addition, ROE itself does not affect ROA, but the interaction between ROE and CAR (ROE*CAR) has a positive effect on ROA with a coefficient of 0.008 at the 1 percent significance level. Furthermore, NPM has a positive effect on ROA with a coefficient of 1.190 at the 5 percent significance level, while the interaction between NPM and CAR (NPM*CAR) has a negative

effect on ROA with a coefficient of -0.064 at the 1 percent significance level. The control variables BOPO and LDR have no effect on ROA. The R square value in this model is 0.980, or 98 percent. Based on testing the four models, these results indicate that the role of capital adequacy is pure moderation. Thus, CAR can moderate the relationship between ROE and NPM with ROA. In particular, CAR strengthens the relationship between NPM and ROA but weakens the relationship between ROE and ROA.

Effect of Profitability and Liquidity on Bank Eligibility Standards

The test results in models (1) and (3) are in accordance with research by Amiruddin (2022). This shows that the average ratios of ROA, ROE, and NPM are significantly different between the value-added approach and the income approach. In addition, ROE and NPM can individually influence ROA, with ROE having a more consistent and stronger influence. These results suggest that high bank liquidity cannot be a measure of a bank's success in conducting financing activities. In other words, liquidity is not a determining factor in increasing bank profitability. This is presumably caused by cost efficiency and non-performing financing. This is supported by the finding that BOPO and NPF have a significant negative effect on bank profitability.

Impact of profitability and liquidity on bank eligibility standards, with capital adequacy as a moderating variable

The results of model 4 show that capital adequacy (CAR) is not effective in increasing bank eligibility standards (ROA) as a moderating variable. Ideally, Yastika et al. (2020) provide an argument that high capital adequacy can encourage banks to increase their liquidity so as to increase bank eligibility standards. In addition, because with greater capital, bank management has greater flexibility in allocating funds into profitable investment activities. This finding, as revealed by Budianto & Dewi (2022); Dendawijaya (2009) is supported by other studies such as Sopingi & Sudarwanto (2020) and Agustina (2021). This shows that CAR has a positive effect on profitability. However, the results reveal that the impact of bank profitability is only apparent when interacting with capital adequacy. Other results actually show that capital adequacy can consistently improve bank eligibility standards directly. In addition, it can be explained that CAR does not directly affect ROA but plays an important role in moderating the relationship between ROE and NPM to ROA. When capital adequacy (CAR) is high, it will strengthen the relationship between NPM and ROA but weaken the relationship between ROE and ROA.

This is reinforced by the results of NPM profitability testing, which is proven to be moderated by CAR capital adequacy and proven to have a negative effect on ROA. Other results show that the control variables BOPO and LDR prove to have no effect on ROA. From these results, it can be clearly said that the role of capital adequacy is pure moderation. Therefore, CAR is able to moderate the relationship between ROE and NPM with ROA. This result strongly supports Hypothesis H3, which states that capital adequacy moderates the effect of profitability on bank eligibility standards.

Conclusions

In this case, the research concludes that, firstly, the researcher aims to examine the impact of banking profitability and liquidity, with capital adequacy as a moderating variable, on Indonesian Islamic commercial banks. The results of the study show that Return on Equity (ROE) has a positive and significant effect on Return on Assets (ROA) across all models. This

indicates that the higher the equity (own capital) used by banks to finance their operations, the higher the profitability level (ROA). On the other hand, Net Profit Margin (NPM) shows inconsistent effects. In models (1), (2), and (3), NPM does not have a significant effect on ROA. However, in model (4), NPM has a positive and significant effect on ROA. This suggests that operational profitability (NPM) can enhance company profitability (ROA), but its impact depends on the specific conditions outlined in model (4).

Next, in the third section, the role of CAR as a moderating variable is examined. CAR, which represents the bank's capital adequacy, does not show a direct effect on ROA in models (2), (3), and (4). However, in model (4), CAR moderates the relationship between ROE and NPM on ROA. The interaction between ROE and CAR (ROECAR) has a positive and significant effect on ROA, indicating that a higher level of capital adequacy (CAR) strengthens the relationship between ROE and ROA. Conversely, the interaction between NPM and CAR (NPMCAR) has a negative and significant effect on ROA, suggesting that a higher level of capital adequacy (CAR) weakens the relationship between NPM and ROA.

Further, the practical implication of this finding is that banking management should focus on improving profitability and liquidity to meet higher standards in line with Islamic principles. Moreover, future research should identify other significant factors that may affect the health of Islamic banks in Indonesia. This study has certain limitations, such as the sample data, moderating variables, and uncontrolled external factors, such as regulatory changes and global market conditions. Future studies could benefit from using different methodologies and considering a broader range of Islamic banks as research subjects.

Policy recommendations for banks to enhance profitability and maintain liquidity should involve strategic priorities focused on sustainable profitability and stable liquidity management. This approach aligns with Sharia principles, which emphasize financial stability and ethical practices to uphold high operational standards across the industry. Furthermore, banks should focus on maintaining an adequate capital level as a critical factor in strengthening institutional resilience and reinforcing capital reserves.

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