

Does Bank Stability Moderate the Determinants of Capital Buffer? Evidence from Indonesian Islamic Commercial Banks

Ahmad Fauzul Hakim Hasibuan, Aulia Syuhada*, Falahuddin, Khairisma

Department of Islamic Economic, Faculty of Economics and Business, Universitas Malikussaleh, Jalan Cot Tengku Nie Reuleut, Aceh, 24355, Indonesia

ABSTRACT

Purpose: This study examines the determinants of capital buffers in Indonesian Islamic Commercial Banks (BUS) during the 2021–2024 post-pandemic recovery by analyzing the effects of profitability (ROE), financing risk (NPF), liquidity (FDR), operational efficiency (BOPO), and bank size, with bank stability as a moderating variable. **Methodology:** A quantitative panel data approach was applied to 13 Islamic Commercial Banks supervised by the Financial Services Authority (OJK). Moderated Regression Analysis (MRA) was employed to examine the effects of bank-specific factors on capital buffers and the moderating role of bank stability. **Results:** The findings show that ROE, BOPO, and bank size influence capital buffer decisions, whereas NPF and FDR do not. Bank stability strengthens the relationships between ROE, BOPO, bank size, and capital buffer but does not moderate the effects of NPF and FDR. **Conclusion:** Capital buffer decisions in Indonesian Islamic Commercial Banks are shaped not only by internal financial characteristics but also by bank stability, which enhances managers' ability to balance business expansion with financial resilience under the current regulatory framework. **Implications:** The findings support stability-oriented supervision under the Basel III framework, particularly for larger and more stable Islamic banks that tend to maintain lower excess capital buffers. **Originality:** This study extends the capital buffer literature by identifying bank stability as a quasi-moderating variable and demonstrating that the influence of bank-specific factors on capital buffer decisions depends on banks' financial stability, providing a more comprehensive explanation of capital management in Indonesian Islamic banking.

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*Corresponding Author at Department of Islamic Economic, Faculty of Economics and Business, Universitas Malikussaleh, Jalan Cot Tengku Nie Reuleut, Aceh, 24355, Indonesia
E-mail address: aulia.220440013@mhs.unimal.ac.id

INTRODUCTION

Banks play a crucial role in the financial system by mobilizing funds from surplus units and channeling them to productive sectors of the economy. Alongside this intermediation function, banks are required to manage financing activities prudently to ensure financial stability. This responsibility has become increasingly important as Indonesia's Islamic banking industry continues to expand. According to data from the Financial Services Authority (OJK, 2025) The total assets of Islamic banking increased from IDR 441.78 trillion in 2021 to IDR 664.61 trillion in 2024. This upward trend reflects the growing role of Islamic banks in Indonesia's financial intermediation and economic development.

A significant expansion in financing activities accompanies the increase in assets. Although financing growth supports economic development, it may also increase banks' exposure to risks, particularly credit, liquidity, and operational risks. A larger financing portfolio may increase the probability of non-performing financing (NPF), ultimately affecting bank performance and financial stability. Consequently, Islamic Commercial Banks (BUS) are expected not only to pursue business growth but also to maintain sufficient capital capacity to absorb potential losses arising from their financing activities (Tohis & Tubagus, 2025).

Recognizing the importance of capital resilience, the Financial Services Authority introduced OJK Regulation No. 11/POJK.03/2016 concerning the Minimum Capital Adequacy Requirement for Commercial Banks. The regulation requires banks to maintain additional capital reserves beyond the minimum Capital Adequacy Ratio (CAR), commonly referred to as capital buffers. One key component is the Capital Conservation Buffer (CCB), set at 2.5% of Risk-Weighted Assets (RWA). The purpose of this requirement is to strengthen banks' ability to absorb losses during periods of financial stress and to reduce the likelihood of disruptions to banking operations (OJK, 2016).

Even with these regulations in place, the capital position of Islamic banks in Indonesia over the past few years has shown dynamics worth examining. Based on Islamic banking statistics, the CAR ratio and capital buffer exhibit fluctuations that warrant close attention, as illustrated in **Figures 1 and 2**.

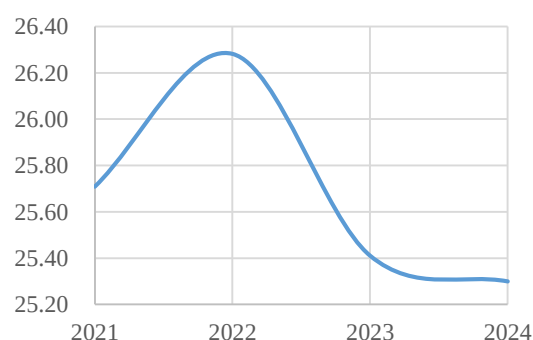


Figure 1. Trends in the capital adequacy ratio (CAR) of Islamic commercial banks

Source : (OJK, 2025)

Based on data on the Capital Adequacy Ratio (CAR) of Islamic commercial banks in Indonesia for the 2021–2025 period, the banks' capital ratios fluctuated, with a downward

trend after an initial increase. The CAR, which stood at around 25.7% in 2021, rose to approximately 26.3% in 2022, then gradually declined to 25.30% in 2024

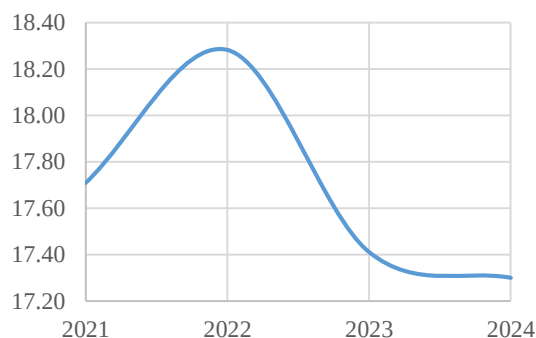


Figure 2. Trends in Capital Buffers for Islamic Commercial Banks

Source : (OJK, 2025)

Consistent with CAR fluctuations, the capital buffer share in **Figure 2** also shows a similar trend, rising from 17.71% in 2021 to 18.28% in 2022, then declining to 17.30% in 2024. Although the ratio remains well above OJK's Capital Conservation Buffer threshold of 2.5%, the post-2022 downward trend indicates pressure on banks' capital buffers. This decline occurs amid massive business expansion, suggesting that asset and financing growth can erode the capital safety cushion if not accompanied by prudent capital management.

The period from 2021 to 2024 provides an important context for examining capital buffer behavior in Indonesian Islamic banking. Following the COVID-19 pandemic, the industry entered a recovery phase characterized by rising demand for financing, asset growth, and adjustments to risk management practices. In addition, 2021 marked a major structural change with the establishment of Bank Syariah Indonesia, resulting from the merger of three state-owned Islamic banks. This consolidation was expected to improve competitiveness, efficiency, and resilience, making the period particularly relevant for understanding how Islamic banks manage their capital buffers under changing business conditions.

Capital buffer decisions are closely related to a bank's internal condition. Profitability, measured by Return on Equity (ROE), reflects the bank's capacity to generate earnings that can be retained to strengthen capital. Financing risk, represented by Non-Performing Financing (NPF), indicates asset quality and the potential pressure arising from problematic financing (Jiang et al., 2020). Liquidity, measured by the Financing-to-Deposit Ratio (FDR), may influence the amount of capital held to absorb potential funding shocks. Operational efficiency, proxied by BOPO, and bank size may also affect capital management by influencing operational performance, market access, and risk diversification. Together, these factors represent key internal determinants of capital buffer policies (Sutrisno & Widarjono, 2024).

Despite extensive research on capital buffers, empirical findings remain inconclusive. Previous studies have reported mixed evidence regarding the effects of profitability, financing risk, liquidity, efficiency, and bank size on capital buffer levels. While some studies found significant relationships, others reported weak or insignificant results (Almanaseer, 2023). These inconsistencies suggest that the influence of internal bank characteristics may depend on specific banking conditions. However, most existing studies focus primarily on direct

relationships and offer limited explanation for why the effects of these factors differ across banks.

One possible explanation lies in differences in bank stability. Banks with stronger stability generally possess greater risk-bearing capacity, more effective risk management, and higher flexibility in adjusting capital policies. In contrast, less stable banks may be more sensitive to changes in profitability, financing risk, liquidity conditions, and operational performance (Mawardi et al., 2024). As a result, the impact of internal bank characteristics on capital buffer decisions may vary across institutions.

Although bank stability has received considerable attention in the banking literature, its role in shaping the relationship between internal bank characteristics and capital buffers remains underexplored, particularly in Islamic banking. Existing studies implicitly assume that the effects of profitability, financing risk, liquidity, efficiency, and bank size on capital buffers are similar across banks. Such an assumption may overlook important differences in financial resilience. Empirical evidence examining whether bank stability conditions these relationships remains limited, especially in the context of Indonesian Islamic Commercial Banks during the post-pandemic period, characterized by financing expansion, regulatory adjustments, and changing risk profiles (Pires et al., 2021).

To address this gap, this study examines bank stability as a moderator of the relationship between internal bank characteristics and capital buffers. Rather than treating the determinants of capital buffers as operating uniformly across banks, this study investigates whether their effects vary by bank stability. This perspective extends the conventional direct-effect approach and provides a more nuanced explanation of capital buffer behavior. In addition, by focusing on Indonesian Islamic Commercial Banks during the 2021–2024 period, the study offers updated evidence from an industry undergoing post-pandemic recovery, rapid expansion of financing, and structural transformation.

Accordingly, this study investigates the effects of ROE, NPF, FDR, BOPO, and bank size on capital buffers. It examines whether bank stability moderates these relationships in Indonesian Islamic Commercial Banks during the 2021–2024 period.

Theoretical Foundations: Pecking Order and Too Big to Fail Theories

This study integrates the Pecking Order Theory and the Too Big to Fail (TBTF) Theory to examine the determinants of capital buffer decisions in Indonesian Islamic commercial banks (BUS). According to Pecking Order Theory, firms prioritize internal financing over external funding due to lower information asymmetry and financing costs. In banking, retained earnings serve as the primary engine for capital accumulation. This mechanism is particularly vital for Islamic banks, which operate under Sharia profit-and-loss sharing principles and face stricter liquidity constraints alongside unique governance requirements (Al-Azzam et al., 2026). On the other hand, institutional scale is best explained by the TBTF Theory. Large banks often benefit from stronger market confidence, broader funding access, and implicit expectations of regulatory protection (Hasannasab et al., 2025). Consequently, managers of larger institutions may maintain lower capital buffers, whereas smaller banks

accumulate higher buffers to compensate for limited funding flexibility and greater shock vulnerability (Ly & Pham, 2025).

Bank-Specific Determinants of Capital Buffer

Under the Pecking Order framework, internal financial characteristics directly influence the rate of internal capital accumulation. High profitability (ROE) enhances retained earnings, allowing banks to build stronger capital reserves and financial flexibility (Hackmann & Momtaz, 2026). Conversely, deteriorating financing quality (NPF) increases loan loss provisions, eroding operating earnings and limiting internal capital growth (Saeed & Donkoh, 2026). Similarly, liquidity pressure (FDR) forces banks to prioritize short-term liquidity management over long-term capital retention (Akram & Hushmat, 2026), while operational inefficiency (BOPO) reduces profit margins and constrains excess capital accumulation (Lestari et al., 2026). Combined with Bank Size, these internal factors dynamically shape management's ability to maintain capital above regulatory minimums.

Capital Buffer

In this study, the capital buffer serves as the dependent variable, representing a strategic managerial decision to maintain capital above regulatory requirements to absorb unexpected losses and sustain financial intermediation during economic stress (Rendón et al., 2024). Although extensive international literature demonstrates that bank-specific factors shape capital positions, empirical results remain inconsistent across different contexts and empirical settings (Naouar et al., 2024). These mixed findings suggest that capital buffer formation is non-linear and relies on contextual conditions that alter managerial decision-making.

The Moderating Role of Bank Stability

To address this gap, this study introduces Bank Stability (measured by the Z-Score) as a moderating variable. Bank stability reflects an institution's overall resilience in managing profitability, risk exposure, and capital adequacy simultaneously (Ghassan & Guendouz, 2019). Managers at financially stable banks enjoy greater strategic discretion, allowing internally generated earnings to translate more effectively into capital reserves while providing a stronger cushion against financing shocks (NPF) or operational inefficiencies (Haddou & Boughrara, 2025; Iqbal et al., 2026). By examining bank stability as a moderator, this study offers a more comprehensive explanation of how internal financial dynamics and institutional scale translate into capital buffer strategies in Islamic banking.

Hypothesis Development

To understand the driving factors behind capital accumulation in Islamic commercial banks, this study constructs a theoretical framework based on the Pecking Order Theory and the Too Big to Fail Theory. The following sub-sections present the theoretical arguments and logic underlying the direct effects of internal financial variables namely profitability, risk profile, liquidity management, operational efficiency, and firm scale on capital buffers, as well as the contextual influence of overall bank stability as a moderating variable.

Return on Equity (ROE) and Capital Buffer

According to Pecking Order Theory, internally generated earnings are the primary source of financing because they minimize information asymmetry and financing costs. For Islamic commercial banks, higher profitability expands retained earnings, thereby accelerating internal capital accumulation and supporting sustainable Sharia-compliant financing. Consequently, more profitable banks are expected to maintain larger capital buffers.

H1: Return on Equity (ROE) has a positive effect on capital buffer.

Non-Performing Financing (NPF) and Capital Buffer

NPF reflects the quality of financing portfolios and serves as a major indicator of credit risk. Under Pecking Order Theory, elevated financing risk requires banks to allocate higher provisioning for potential losses, directly reducing net earnings. Lower retained earnings subsequently impair a bank's capacity to strengthen its capital position internally.

H2: Non-Performing Financing (NPF) has a negative effect on capital buffer.

Financing-to-Deposit Ratio (FDR) and Capital Buffer

FDR measures the effectiveness of liquidity management in Islamic banks. High FDR levels indicate heavy utilization of deposit funds for financing activities, which increases liquidity pressure if funding capacity is inadequate. This pressure constrains financial flexibility, limiting the ability to retain earnings for capital accumulation.

H3: Financing-to-Deposit Ratio (FDR) has a negative effect on capital buffer.

Operating Expenses to Operating Income (BOPO) and Capital Buffer

BOPO represents operational efficiency. Higher BOPO values signify operational inefficiency, which depresses overall profitability. Reduced profitability diminishes the volume of internally generated funds available to build capital reserves.

H4: Operating Expenses to Operating Income (BOPO) has a negative effect on capital buffer.

Bank Size and Capital Buffer

The Too Big to Fail Theory suggests that large banks enjoy superior market confidence, broader access to funding, and implicit regulatory backstops due to their systemic importance. These advantages diminish the incentive for managers to hold substantial excess capital, leading larger banks to operate with lower capital buffers.

H5: Bank size has a negative effect on capital buffer.

Moderating Hypotheses

Bank stability plays a pivotal role in shaping how internal financial performance translates into capital buffer decisions. Financially stable banks generally possess superior loss-absorbing capacity, more sophisticated risk management systems, and greater flexibility in managing liquidity and funding. Under stable conditions, management is better positioned to optimize capital accumulation without being severely constrained by short-term financial pressure or operational shocks. Consequently, bank stability serves as a crucial contextual variable that either reinforces or mitigates the impacts of profitability, credit risk, liquidity, operational efficiency, and bank size on capital buffers, as proposed in the following hypotheses:

H6: Bank stability strengthens the positive effect of Return on Equity (ROE) on capital buffer.

H7: Bank stability weakens the negative effect of Non-Performing Financing (NPF) on capital buffer.

H8: Bank stability weakens the negative effect of Financing-to-Deposit Ratio (FDR) on capital buffer.

H9: Bank stability weakens the negative effect of Operating Expenses to Operating Income (BOPO) on capital buffer.

H10: Bank stability strengthens the negative effect of bank size on capital buffer.

The research framework (**Figure 3**) in this study illustrates that there are five independent variables (X), one dependent variable (Y), and one moderating variable (Z).

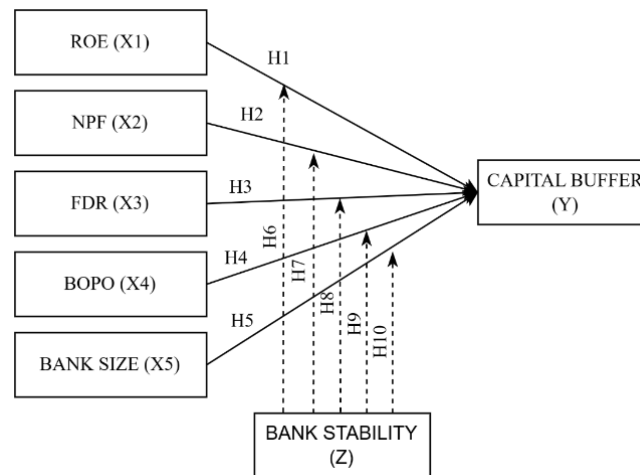


Figure 3. Research Framework

METHODOLOGY

This study adopts a quantitative research approach and employs panel data analysis. Panel data combine cross-sectional and time-series observations, allowing analysis to capture differences across banks and changes over time. This approach is particularly suitable for examining the determinants of capital buffers because it provides more observations and enables a more comprehensive analysis of relationships among variables. Compared with pure cross-sectional or time-series methods, panel data analysis also offers greater estimation efficiency and helps reduce potential econometric problems, such as omitted variable bias and multicollinearity. The population of this study consists of all Islamic Commercial Banks (Bank Umum Syariah/BUS) officially registered with the Financial Services Authority (OJK) during the observation period. Purposive sampling was employed to select banks that met the predetermined criteria.

The study uses secondary data obtained from annual reports and quarterly financial reports published on the official websites of each Islamic Commercial Bank. Additional data were collected from the Islamic Banking Statistics (Statistik Perbankan Syariah/SPS) published periodically by the Financial Services Authority (OJK) through its official website (www.ojk.go.id). The sample was selected using a purposive sampling technique to ensure that only Islamic Commercial Banks meeting the predetermined research criteria, particularly

the availability and completeness of financial data throughout the observation period, were included in the analysis. The sample selection process is presented in **Table 1**.

Table 1. Sample Selection Criteria

Criteria	Total
Sharia Commercial Banks are officially registered with the OJK	14
Banks that have not published complete annual financial statements for the 2021–2025 period.	(1)
Banks with incomplete data for all research variables.	(0)
Total	13

Source: Author (2026)

The sample selection process based on the purposive sampling criteria is presented in Table X. Out of 14 Sharia Commercial Banks officially registered with the Financial Services Authority (OJK), one bank “PT Bank Nano Syariah” was excluded because it did not publish complete financial statements throughout the 2021–2025 period. Consequently, 13 banks met all the inclusion criteria. Using quarterly financial data across the 4-year study period (16 quarters per bank), the final dataset comprises 208 observations (13 Bank × 16 quarter = 208).

Operational Definition of Variables

To ensure clarity and measurement precision, the operational definitions, formulas, units of measurement, and theoretical references for all research variables comprising the dependent, independent, and moderating variables are summarized in **Table 2**.

Table 2. Operational Definition of Variables

Variabel	Definition	Formula	Unit	Reference
Capital buffer (Y)	The additional capital reserves held by a bank in excess of the minimum capital level required by the regulator.	Capital Buffer = CAR – 8 %	Ratio	(Sutrisno & Widarjono, 2024)
Return On Equity (ROE) (X1)	ROE indicates the extent to which management can optimize shareholders' equity to generate profits.	$ROE = \frac{Net\ income}{Total\ Equity} \times 100\%$	Ratio	(Azzabi & Lahrichi, 2023)
Non-Performing Financing (NPF) (X2)	The Non-Performing Financing ratio is a metric used to assess the proportion of non-performing loans relative to the total loans extended by Islamic banks.	$NPF = \frac{Non\ Performing\ Loans}{Total\ Financing} \times 100\%$	Ratio	(Endrajati, 2025)
Financing to Deposit Ratio (FDR) (X3)	The Financing-to-Deposit Ratio (FDR) is an indicator of the extent to which third-party funds collected by a bank are channeled back out as loans.	$FDR = \frac{Total\ Financing}{Third\ Party\ Funds} \times 100\%$	Ratio	(Endrajati, 2025)
The Operating Expense-to-Operating Revenue Ratio (BOPO) measures a bank's	The Operating Expense-to-Operating Revenue Ratio (BOPO) measures a bank's	$BOPO = \frac{Operating\ Expenses}{Operating\ Income} \times 100\%$	Ratio	(Endrajati, 2025)

Variabel	Definition	Formula	Unit	Reference
Operating Revenue Ratio (BOPO) (X4)	operational efficiency in managing its business activities, indicating the proportion of operating expenses incurred relative to the operating revenue generated during a specific period.			
Bank Size (X5)	Bank size is an indicator that reflects a bank's operational scale and economic capacity; total assets typically measure it.	$BANK\ SIZE = \ln (Total\ Asset)$	Log	(Bolívar et al., 2023)
Bank Stability (Z)	The Z-Score indicates how far a bank's financial condition is from failure, taking into account profitability, profit volatility, and capital adequacy.	$Z - Score = \frac{ROA + CAR}{\sigma(ROA)}$	Ratio	(Alfiyan et al., 2023)

Source: Author (2026)

The data were analyzed through several sequential stages. First, descriptive statistical analysis was conducted to describe the characteristics of the research variables. Next, the appropriate panel data regression model was determined using the Chow Test, Hausman Test, and Lagrange Multiplier (LM) Test to select among the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). After selecting the most suitable model, classical assumption tests, including heteroscedasticity, autocorrelation tests and Cross-Sectional Dependence were performed to ensure that the regression model satisfied the required assumptions.

The hypotheses were subsequently tested using Moderated Regression Analysis (MRA) to examine the moderating role of bank stability in the relationship between bank-specific characteristics and capital buffer. The regression model is specified as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 Z + \beta_7 (X_1 \times Z) + \beta_8 (X_2 \times Z) + \beta_9 (X_3 \times Z) + \beta_{10} (X_4 \times Z) + \beta_{11} (X_5 \times Z) + \varepsilon \quad (1)$$

Note :

Y: Capital buffer

a: constant

β_1 – β_{11} : regression coefficients

X1 = ROE

X2 = NPF

X3 = FDR

X4 = BOPO

X5 = Bank Size

Z = Bank Stability

ε = Error term (a combination of individual effects and random error)

The significance of each coefficient was evaluated using the t-test at the 5% significance level, while the coefficient of determination (R^2) was used to assess the model's

explanatory power. Finally, robustness tests were conducted by re-estimating the model using annual data instead of quarterly data and replacing ROE with ROA as an alternative profitability proxy to examine the consistency of the empirical findings.

RESULT AND DISCUSSION

Descriptive Statistic

The summary of descriptive statistics, detailing the mean, standard deviation, minimum, and maximum values for all research variables based on 208 observations, is presented in **Table 3**.

Table 3. Descriptive statistics result

Variabel	N	Minimum	Maksimum	Mean	Std. Deviation
Capital Buffer	208	7.06	498.43	39.70	77.29
ROE	208	-47.1	28.48	7.48	9.29
NPF	208	0.00	4.940	1.11	1.28
FDR	208	0.00	175.97	80.92	23.74
BOPO	208	2.99	6.21	4.48	0.34
Bank Size	208	13.98	19.83	16.63	1.21
Stabilitas Bank	208	5.47	752.41	104.30	153.60

Source : E-views 12 (2026)

Based on the descriptive statistics of 208 observations, the Capital Buffer has a mean value of 39.70 with relatively high variation, as indicated by its standard deviation of 77.29. The exceptionally high maximum value (498.43) reflects the unusually high Capital Adequacy Ratio (CAR) reported by Bank Aladin Syariah during 2021–2022 following significant capital injections. ROE has an average of 7.48, while NPF and FDR average 1.11 and 80.92, respectively. The BOPO values presented in this study represent the natural logarithm (Ln) of the original ratio, resulting in a range of 2.99-6.21. Meanwhile, Bank Size shows relatively low variation, whereas Bank Stability exhibits considerable dispersion across the observed Islamic commercial banks.

Model Selection Test

Chow Test

The results of the Chow test used to evaluate whether the Common Effect Model or Fixed Effect Model is better suited for this study are presented in **Table 4**.

Table 4. Chow Test result

Effect Test	Statisitic	d.f.	Prob.
Cross-Section F	25.06	12.19	0.00
Cross-section Chi-Square	198.04	12	0.00

Source: E-views 12 (2026)

Based on the Chow test results, the probability value (Prob.) was 0.00, which is < 0.05 . Thus, further panel data regression analysis was conducted using the Fixed Effects Model (FEM) approach because it can capture differences in characteristics between banks more accurately.

Hausman Test

To select between the Fixed Effect Model (FEM) and the Random Effect Model (REM), a Hausman test was conducted, with the results summarized in **Table 5**.

Table 5. Hausman test result

Test Summary	Chi-Sq Statistic	Chi-Sq. d.f.	Prob.
Cross-Section F	73.21	6	0.00

Source: E-views 12 (2026)

Based on the Hausman test results, a Chi-Square Statistic value of 73.21 was obtained with a probability of $0.0000 < 0.05$. Thus, further analysis was conducted using FEM because it more accurately captured the differences in characteristics between Islamic Commercial Banks. The Lagrange Multiplier (LM) test was not performed because it is used only to compare the Common Effect Model (CEM) and the Random Effect Model (REM). Since the Chow test favored FEM over CEM and the Hausman test favored FEM over REM, the model selection process was deemed complete, with FEM as the final model.

Classical assumption tests.

Heteroscedasticity Test

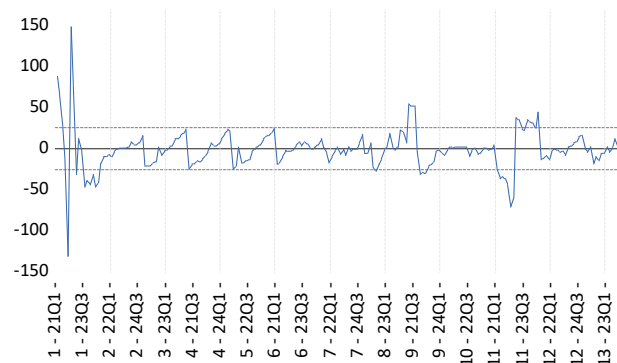
Table 6 presents the results of the heteroscedasticity test used to ensure that the error variance remains constant across observations.

Table 6. Heteroscedasticity Test Result

Test Statistic	Value	Probability
F-statistic	25.36	0.00
Obs*R-squared	89.61	0.00
Scaled explained SS	691.18	0.00

Source: E-views 12 (2026)

The heteroscedasticity test was conducted using the Breusch-Pagan-Godfrey test. The results show that the probability value of Obs*R-squared is 0.0000, which is lower than the significance level of 0.05. Therefore, the null hypothesis of homoscedasticity is rejected, indicating heteroscedasticity in the regression model.



Source: E-views 12 (2026)

Figure 4. Residual Graph

Based on **Figure 4**, the residuals are distributed around the zero line and do not exhibit a clear systematic pattern, suggesting that their variance is relatively stable across observations. However, the Breusch Pagan Godfrey test yielded a p-value of 0.0000, indicating heteroscedasticity in the model. Although the visual inspection does not reveal severe heteroscedasticity, the statistical test indicates heteroscedasticity. Therefore, robustness tests were subsequently conducted to ensure the stability and reliability of the empirical findings.

Autocorrelation Test

To ensure that the residuals are free from serial correlation over time, an autocorrelation test was conducted, with the results presented in **Table 7**.

Table 7. Autocorrelation Test Results

Test Statistic	Probability
Durbin-Watson stat	0.762995

Source: E-views 12 (2026)

Based on the Durbin-Watson test, the obtained Durbin-Watson statistic was 0.762995. Since this value is substantially below 2, it indicates positive autocorrelation in the residuals. Therefore, the assumption of no autocorrelation is not fully satisfied, suggesting that the residuals are correlated across observation periods. This condition may affect the efficiency of the estimated coefficients and the validity of statistical inference.

Cross-Sectional Dependence Test

To test whether cross-sectional dependence exists among the sampled banks in the panel dataset, a cross-sectional dependence test was conducted, with the results summarized in **Table 8**.

Table 8. Cross-Sectional Dependence Result

Residual Cross-Section Dependence Test

Null Hypothesis: No cross-section dependence (correlation) in residuals

Equation : Untitled

Periods included : 16

Cross-sections included : 13

Total panel observations : 208

Cross-section effects Removed during estimation

Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	287.59	78	0.00
Pesaran scaled LM	16.78		0.00
Bias-corrected scaled LM	16.35		0.00
Pesaran CD	7.75		0.00

Source: E-views 12 (2026)

The residual cross-sectional dependence test indicates the presence of significant cross-sectional dependence, as all probability values are below the 5% significance level ($p < 0.05$). This suggests that the residuals across Islamic Commercial Banks are correlated,

reflecting the influence of common macroeconomic and regulatory factors within the Indonesian Islamic banking industry. Therefore, to ensure the reliability and consistency of the empirical findings, robustness tests were subsequently conducted using alternative model specifications.

Moderated regression Analysis

To evaluate the direct effects of the independent variables and the moderating role of bank stability on capital buffers, a Moderated Regression Analysis (MRA) was conducted, with the empirical results presented in **Table 9**.

Table 9. Moderated Regression Analysis Result

Dependent Variable: Y				
Method: Panel Least Squares				
Date: 05/24/26 Time: 19:00				
Sample: 2021Q1 2024Q4				
Periods included: 16				
Cross-sections included: 13				
Total panel (balanced) observations: 208				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	889.81	148.16	6.01	0.00
X1	-1.86	0.41	-4.59	0.00
X2	-4.81	2.99	-1.60	0.11
X3	0.15	0.13	1.10	0.27
X4	-0.81	0.12	-6.98	0.00
X5	-48.29	8.63	-5.59	0.00
Z	2.45	0.61	3.97	0.01
ZX1	0.03	0.01	3.41	0.00
ZX2	-0.00	0.01	-0.24	0.81
ZX3	-0.00	0.01	-0.59	0.55
ZX4	0.01	0.01	10.48	0.00
ZX5	-0.20	0.03	-6.59	0.00
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.96	Mean dependent var	39.70	
Adjusted R-squared	0.95	S.D. dependent var	77.29	
S.E. of regression	16.86	Akaike info criterion	8.59	
Sum squared resid	52289.24	Schwarz criterion	8.98	
Log likelihood	-869.95	Hannan-Quinn criter	8.75	
F-statistic	181.21	Durbin-Watson stat	0.76	
Prob(F-statistic)	0.00			

Source: E-views 12 (2026)

Based on the estimation results, the following Moderated Regression Analysis (MRA) model was obtained:

$$\text{Capital Buffer} = 889.81 - 1.86 - 4.81 + 0.15 - 0.81 - 48.29 + 2.45 + 0.03 - 0.00 - 0.00 + 0.01 - 0.20 + \varepsilon \quad (2)$$

The constant value of 889.81 indicates that when all independent variables and the moderating variable are zero, the Capital Buffer is estimated at 889.81 units. Regarding the direct effects of internal financial indicators, Return on Equity (ROE) exhibits a negative

coefficient of -1.86, meaning that a one-unit increase in profitability, holding other variables constant, reduces the Capital Buffer by 1.86 units, suggesting that more profitable Islamic banks tend to hold lower excess capital reserves. Similarly, Non-Performing Financing (NPF) has a coefficient of -4.81, implying that a one-unit increase in credit risk decreases the Capital Buffer by 4.81 units as higher financing losses erode capital buffers. Operational efficiency, represented by BOPO, also shows a negative coefficient of -0.81, demonstrating that operational inefficiency weakens a bank's ability to accumulate capital. Institutional scale (Bank Size) yields a substantial negative coefficient of -48.29, confirming that larger banks maintain significantly lower capital buffers. In contrast, the Financing-to-Deposit Ratio (FDR) shows a positive coefficient of 0.15, indicating that expanded financing activities are associated with a slight increase in capital accumulation. Regarding the moderating variable, Bank Stability (Z) displays a positive coefficient of 2.45, signifying that inherently stable banks maintain stronger capital positions.

The interaction terms evaluate the moderating influence of bank stability across all financial drivers. The interaction coefficient between ROE and Bank Stability ($ROE \times Z$) is positive at 0.03, indicating that financial stability strengthens the relationship between profitability and capital buffer, enabling profitable banks to retain capital more effectively. Similarly, the interaction between BOPO and Bank Stability ($BOPO \times Z$) is positive at 0.01, suggesting that the impact of operational efficiency on capital buffers is more pronounced in highly stable institutions. Conversely, the interaction coefficient between Bank Size and Bank Stability ($SIZE \times Z$) is -0.20, demonstrating that bank stability strengthens the negative relationship between scale and excess capital, meaning larger institutions among stable banks hold even lower capital buffers. Finally, the interaction terms for financing risk ($NPF \times Z = -0.00$) and liquidity ($FDR \times Z = -0.00$) both display negative coefficients, indicating a marginal weakening effect of bank stability on these relationships, although both interaction effects are statistically insignificant.

Hypothesis Test

Hypothesis testing was performed by examining the estimated regression coefficients and their significance levels from the regression model. The statistical significance of each relationship was evaluated using a 5% significance level ($\alpha = 0.05$). Hypotheses with probability values below 0.05 were considered supported, while those with probability values above the threshold were regarded as not supported. The detailed results of the direct and moderating effect hypotheses are presented below:

The hypothesis testing results are summarized as follows. Return on Equity (X1) has a coefficient of -1.86 and a p-value of 0.00 ($p < 0.01$), indicating a statistically significant negative effect on the dependent variable; thus, H1 is rejected as a positive relationship was hypothesized. Non-Performing Financing (X2) yields a p-value of 0.11, exceeding the 0.05 significance threshold and indicating no statistically significant effect; therefore, H2 is rejected. Similarly, the Financing-to-Deposit Ratio (X3) has a p-value of 0.27, demonstrating an insignificant effect on the dependent variable, leading to the rejection of H3. Conversely, Operating Expenses to Operating Income (X4) exhibits a coefficient of -0.81 ($p < 0.01$),

confirming a statistically significant negative effect and supporting H4. Bank Size (X5) displays a coefficient of -48.29 ($p < 0.01$), showing a statistically significant negative impact, which leads to the acceptance of H5.

Regarding the moderating hypotheses, the interaction term $Z \times X1$ has a coefficient of 0.03 ($p < 0.01$), indicating that bank stability (Z) significantly and positively moderates the relationship between $X1$ and the dependent variable, thereby supporting H6. In contrast, the interaction term $Z \times X2$ shows a coefficient of -0.00 and a p-value of 0.81, showing no significant moderating effect and resulting in the rejection of H7. The interaction $Z \times X3$ also yields a non-significant p-value of 0.55 with a coefficient of -0.00, meaning bank stability does not moderate the effect of $X3$, leading to the rejection of H8. For operational efficiency, the interaction $Z \times X4$ produces a positive coefficient of 0.01 ($p < 0.01$), indicating that Z significantly strengthens the relationship between $X4$ and the dependent variable; hence, H9 is accepted. Finally, the interaction term $Z \times X5$ has a coefficient of -0.20 ($p < 0.01$), demonstrating a statistically significant negative moderating effect where Z weakens the relationship between $X5$ and the dependent variable, supporting H10.

The regression model is statistically significant, as indicated by an F-statistic of 181.2104 with a Prob(F-statistic) of 0.0000. This result indicates that ROE, NPF, FDR, BOPO, Bank Size, Bank Stability, and their interaction terms jointly have a significant effect on Capital Buffer, confirming that the model is appropriate for hypothesis testing. Furthermore, the regression results show an R-squared value of 0.957719 and an Adjusted R-squared value of 0.952434, indicating that approximately 95.77% of the variation in Capital Buffer is explained by the independent variables, the moderating variable, and their interaction terms included in the model. The remaining 4.23% is explained by other factors outside the model.

Robustness Test

To verify the stability and consistency of the empirical findings, robustness tests were conducted by re-estimating the model using annual data instead of quarterly data and replacing ROE with ROA as an alternative profitability proxy, with the results presented in Table 10.

Table 10. Robusnest Test Result

Variable	Original		X1 (ROA)		Data (Year)	
	Coefficient	prob	Coefficient	prob	Coefficient	prob
C	889.81	0.00	929.74	0.00	168.71	0.23
X1	-1.86	0.00	-9.09	0.00	0.56	0.08
X2	-4.81	0.11	-5.95	0.05	-4.78	0.14
X3	0.15	0.27	0.06	0.68	-0.20	0.16
X4	-0.81	0.00	-0.91	0.00	0.16	0.19
X5	-48.29	0.00	-49.03	0.00	-8.86	0.29
Z	2.45	0.00	2.58	0.00	-0.56	0.02
ZX1	0.03	0.00	0.07	0.07	-0.01	0.49
ZX2	-0.00	0.81	-0.01	0.60	0.00	0.66
ZX3	-0.00	0.55	-0.00	0.40	0.00	0.25
ZX4	0.01	0.00	0.01	0.00	0.00	0.00
ZX5	-0.20	0.00	-0.21	0.00	-0.00	0.34
R-squared		0.95		0.95		0.99
F-statistic		0.00		0.00		0.00
Durbin-Watson		0.762		0.67		2.61

Source: E-views 12 (2026)

Based on the robustness test results presented above, the main model was re-estimated using two alternative specifications: (1) replacing the profitability measure from Return on Equity (ROE) to Return on Assets (ROA), and (2) converting the dataset from quarterly observations to annual observations for the 2021–2024 period. The results indicate that several variables significant in the main model became statistically insignificant under the alternative specification, suggesting that their effects are sensitive to the measurement of profitability and the frequency of data. Nevertheless, Bank Stability (Z) and the interaction term between BOPO and Bank Stability (ZX4) remained statistically significant, indicating that the influence of bank stability on Capital Buffer is relatively consistent across different model specifications. Therefore, although some coefficients vary under alternative estimations, the robustness test confirms that the main conclusion of this study regarding the important role of bank stability in explaining Capital Buffer behavior in Indonesian Islamic Commercial Banks remains valid and robust

The Effect of Return on Equity (ROE) on Capital Buffer

The regression results indicate that ROE has a coefficient of -1.8625 with a probability value of 0.0000 , indicating a significant negative effect on the Capital Buffer of Islamic Commercial Banks (BUS) in Indonesia; therefore, H1 is rejected. The negative relationship suggests that during the 2021–2024 period, more profitable Islamic banks tended to allocate retained earnings toward financing expansion, digital transformation, and business development rather than accumulating excess capital reserves. This finding differs from the prediction of Pecking Order Theory, which argues that higher profitability should strengthen capital through retained earnings. Instead, it indicates that managerial decisions regarding capital allocation were influenced by strategic growth objectives alongside regulatory capital requirements. The result is consistent with Hendrawan et al. (2023), but differs from studies reporting a positive relationship between profitability and capital buffer formation, suggesting that the profitability–capital buffer relationship depends on institutional and regulatory conditions.

The Effect of Non-Performing Financing (NPF) on Capital Buffers

The regression results show that NPF has a coefficient of -4.8083 with a probability value of 0.1104 , indicating that financing risk does not significantly affect the Capital Buffer; therefore, H2 is rejected. Although the relationship is negative, the insignificant result suggests that financing quality was not the primary determinant of capital buffer decisions among Indonesian Islamic Commercial Banks during the observation period. This condition may be explained by strengthened prudential supervision, financing restructuring policies, and effective risk management practices implemented by the Financial Services Authority (OJK), which reduced the impact of financing risk on capital management. Consequently, banks maintained capital buffers primarily to satisfy strategic and regulatory objectives rather than responding to short-term fluctuations in NPF. This finding is consistent with Tanjung et al. (2023) and Hisan & Septiarini (2020), who likewise reported that NPF does not significantly influence capital buffer levels.

The Effect of Financing to Deposit Ratio (FDR) on Capital Buffer

The estimation results reveal that FDR has a coefficient of 0.1486 with a probability value of 0.2705, indicating that liquidity does not significantly influence the Capital Buffer; therefore, H3 is rejected. This finding suggests that Indonesian Islamic Commercial Banks maintained relatively stable liquidity positions during the 2021–2024 period, enabling financing expansion without requiring adjustments to excess capital reserves. Although liquidity risk is theoretically expected to influence capital management decisions, compliance with OJK liquidity regulations and prudent internal liquidity policies appears to have reduced its importance in determining capital buffer levels. As a result, capital buffer decisions were driven more by long-term strategic considerations than by short-term liquidity fluctuations. This finding is consistent with (2023), who also reported that FDR does not have a significant effect on capital buffer formation.

The Effect of Operating Expenses on Operating Income (BOPO) on Capital Buffer

The regression results indicate that BOPO has a coefficient of -0.8105 with a probability value of 0.0000, indicating a significant negative effect on the Capital Buffer; therefore, H4 is accepted. The negative relationship suggests that higher operating costs reduce the ability of Indonesian Islamic Commercial Banks to accumulate excess capital because a larger proportion of operating income is absorbed by operational expenses. During the observation period, several Islamic banks were undergoing digital transformation and expanding banking services, which increased operational expenditures and consequently limited internally generated funds available for capital accumulation. This finding is broadly consistent with Pecking Order Theory, as lower operating efficiency reduces retained earnings that could otherwise strengthen capital reserves. The result also supports the findings of Sutrisno and Widarjono. (2024) and Hisan & Septiarini (2020), who reported that operational inefficiency negatively affects capital buffer formation.

The Effect of Bank Size on Capital Buffers

The regression results show that Bank Size has a coefficient of -48.2916 with a probability value of 0.0000, indicating a significant negative effect on the Capital Buffer; therefore, H5 is accepted. This finding implies that larger Islamic Commercial Banks in Indonesia tend to maintain lower excess capital buffers than smaller banks. Following industry consolidation and the expansion of large Islamic banks, larger institutions generally enjoy greater diversification, stronger market confidence, and easier access to external funding, reducing the need to hold additional capital reserves. This evidence supports the Too Big to Fail Theory, which argues that large banks tend to maintain lower capital buffers because they are perceived as systemically important and financially resilient. The finding is consistent with Azhari and Erdkhadifa. (2025) and Cakhyaneu and Apriyani (2022), who likewise documented a negative relationship between bank size and capital buffer.

The Moderating Effect of Bank Stability on the Relationship between ROE and Capital Buffer

The interaction between ROE and Bank Stability has a coefficient of 0.0341 with a probability value of 0.0008, indicating that Bank Stability significantly strengthens the relationship between profitability and Capital Buffer; therefore, H6 is accepted. This finding

suggests that financially stable Islamic Commercial Banks are better able to convert internally generated earnings into stronger capital reserves because stable institutions generally possess more effective capital planning, stronger governance, and greater flexibility in allocating retained earnings. From the perspective of Pecking Order Theory, financially stable banks rely more effectively on internal funding sources, enabling profitability to contribute more substantially to capital buffer accumulation. Consequently, bank stability enhances the role of profitability in supporting prudent capital management within Indonesian Islamic banking.

The Moderating Effect of Bank Stability on the Relationship between NPF and Capital Buffer

The interaction term between NPF and Bank Stability produces a coefficient of -0.0029 with a probability value of 0.8086 , indicating that Bank Stability does not significantly moderate the relationship between financing risk and Capital Buffer; therefore, H7 is rejected. This result suggests that regardless of the level of financial stability, financing risk does not substantially influence capital buffer decisions among Indonesian Islamic Commercial Banks. One possible explanation is that financing risk management is largely determined by prudential regulations, provisioning requirements, and supervisory policies established by the Financial Services Authority (OJK), thereby limiting the additional role of bank stability in shaping capital management decisions. Consequently, regulatory compliance appears to be more influential than financial stability in determining how banks respond to changes in financing risk.

The Moderating Effect of Bank Stability on the Relationship between FDR and Capital Buffer

The interaction between FDR and Bank Stability has a coefficient of -0.0009 with a probability value of 0.5536 , indicating that Bank Stability does not significantly moderate the relationship between liquidity and Capital Buffer; therefore, H8 is rejected. This finding indicates that the effect of liquidity on capital buffer decisions remains relatively similar across Islamic Commercial Banks regardless of their stability level. A plausible explanation is that liquidity management is conducted under strict regulatory requirements and internal risk management policies, enabling banks to maintain adequate liquidity without depending on their financial stability conditions. As a result, bank stability does not materially alter the relationship between liquidity management and capital buffer formation in the Indonesian Islamic banking industry.

The Moderating Effect of Bank Stability on the Relationship between BOPO and Capital Buffer

The interaction term between BOPO and Bank Stability has a coefficient of 0.0128 with a probability value of 0.0000 , indicating that Bank Stability significantly strengthens the relationship between operational efficiency and Capital Buffer; therefore, H9 is accepted. This finding suggests that financially stable Islamic Commercial Banks are better able to translate improvements in operational efficiency into stronger capital positions because they possess more effective governance, stronger financial resilience, and better long-term capital planning. Consequently, operational efficiency contributes more substantially to capital buffer accumulation when banks operate under stable financial conditions, highlighting the important role of bank stability in enhancing the effectiveness of internal capital management.

The Moderating Effect of Bank Stability on the Relationship between Bank Size and Capital Buffer

The interaction between Bank Size and Bank Stability has a coefficient of -0.2022 with a probability value of 0.0000 , indicating that Bank Stability significantly strengthens the negative relationship between Bank Size and Capital Buffer; therefore, H10 is accepted. This finding implies that larger and more financially stable Islamic Commercial Banks tend to maintain lower excess capital buffers because they benefit from broader access to funding, greater business diversification, and stronger market confidence. From the perspective of the Too Big to Fail Theory, financial stability reinforces the perception that large banks face lower insolvency risk, thereby reducing the incentive to accumulate additional capital reserves beyond regulatory requirements. This finding demonstrates that bank stability influences managerial capital decisions by enabling large Islamic banks to optimize capital allocation while maintaining financial resilience.

CONCLUSION AND RECOMMENDATION

This study examines the determinants of capital buffer decisions in Indonesian Islamic Commercial Banks (BUS) during the 2021–2024 period by analyzing the roles of profitability (ROE), financing risk (NPF), liquidity (FDR), operational efficiency (BOPO), and bank size, with Bank Stability serving as a moderating variable. The findings indicate that profitability, operational efficiency, and bank size influence capital buffer decisions, whereas financing risk and liquidity do not. Moreover, Bank Stability strengthens the relationships between profitability, operational efficiency, bank size, and capital buffer, suggesting that financially stable banks possess greater capacity to allocate internally generated funds, improve capital planning, and maintain financial resilience. These findings are particularly relevant in the Indonesian Islamic banking industry, which has experienced substantial structural transformation following the merger of Bank Syariah Indonesia (BSI), the implementation of Basel III capital standards, and strengthened prudential supervision by the Financial Services Authority (OJK). The study also extends the capital buffer literature by demonstrating that Bank Stability functions as a quasi-moderating variable, thereby enriching the application of the Pecking Order Theory and Too Big to Fail Theory in explaining capital management decisions within Islamic banking.

This study has several limitations. The analysis employs a static panel Fixed Effect Model (FEM), which does not explicitly capture the dynamic adjustment of capital buffers over time or fully address potential endogeneity among the explanatory variables. In addition, the study is limited to Indonesian Islamic Commercial Banks over the 2021–2024 period and focuses primarily on bank-specific factors. Therefore, future research is encouraged to employ dynamic panel estimation techniques, such as the Generalized Method of Moments (GMM), extend the observation period, incorporate relevant macroeconomic variables, and conduct comparative analyses across different banking systems. Such approaches are expected to provide a more comprehensive understanding of capital buffer management under diverse institutional, regulatory, and economic conditions.

REFERENCES

- Akram, H., & Hushmat, A. (2026). Bank liquidity creation, loan concentration and liquidity risk: a comparative analysis of dual banking system. *Journal of Islamic Accounting and Business Research*. 17(1). 179–201. <https://doi.org/10.1108/JIABR-07-2023-0228>
- Al-Azzam, M., Ebrahim, M. S., Smaoui, H., & Temimi, A. (2026). Voluntary capital buffers and risk-taking in dual banking systems. *Economic Modelling*. 161. 107613. <https://doi.org/10.1016/j.econmod.2026.107613>
- Alfiyan, M., Wahyudi, R., Ali, M. B., & Riduwan. (2023). Financial stability in Indonesian Islamic banking using Z-Score: Before and during Covid-19. *Al-Uqud: Journal of Islamic Economics*. 7(1). <https://doi.org/10.26740/aluqud.v7n1.p17-32>
- Almanaseer, S. (2023). The Relationship Between Financial Integration and Financial Stability: an Application of Panel Smooth Transition Model. *International Journal of Professional Business Review*. 8(5). 1–22. <https://doi.org/10.26668/businessreview/2023.v8i5.1935>
- Azhari, Z. N. A., & Erdkhadifa, R. (2025). Factors Affecting Capital Buffer In Indonesia Islamic Banking By Panel Regression Approach. *Jurnal Masharif Al-Syariah: Jurnal Ekonomi Dan Perbankan Syariah*. 10(4). 3092–3103. <https://doi.org/10.30651/jms.v10i4.27564>
- Azzabi, A., & Lahrichi, Y. (2023). Bank Performance Determinants: State of the Art and Future Research Avenues. *New Challenges in Accounting and Finance*. 9(3). 26–41. <https://doi.org/10.32038/NCAF.2023.09.03>
- Bolívar, F., Duran, M. A., & Lozano-Vivas, A. (2023). Bank business models, size, and profitability. *Finance Research Letters*. 53. 103605. <https://doi.org/10.1016/j.frl.2022.103605>
- Cakhyaneu, A., & Apriyani, R. (2022). Capital Buffers Determination of Islamic Banks in Indonesia Determinan Capital Buffer s Bank Umum Syariah di Indonesia perbankan. *Jurnal Ekonomi Syariah Teori Dan Terapan*. 9(5). 760–771. <https://doi.org/10.20473/vol9iss20225pp760-771>
- Endrajati, N. P. (2025). Profitability Determinants of Islamic Banks in Indonesia : The Role of Foreign Ownership. *Jurnal Ekonomi*. 30(2). 335–357. <https://doi.org/10.24912/je.v30i2.3136>
- Ghassan, H. B., & Guendouz, A. A. (2019). Panel modeling of z-score: evidence from Islamic and conventional Saudi banks. *International Journal of Islamic and Middle Eastern Finance and Management*. 12(3). 448–468. <https://doi.org/10.1108/IMEFM-04-2018-0122>
- Hackmann, J. P., & Momtaz, P. P. (2026). Toxic trade-offs: How peer-adjusted abnormal chemical emissions impact return on equity. *Journal of Business Research*. 216. 116371. <https://doi.org/10.1016/j.jbusres.2026.116371>
- Haddou, S., & Boughrara, A. (2025). How diversification shapes full-fledged Islamic bank Stability? A causal inference approach. *International Review of Economics & Finance*. 102. 104367. <https://doi.org/10.1016/j.iref.2025.104367>
- Hasannasab, M., Margaritis, D., & Psillaki, M. (2025). Are big banks too-big-to-fail? An investigation into the size premium and scale economies for European banks. *International Review of Financial Analysis*. 107. 104577. <https://doi.org/10.1016/j.irfa.2025.104577>
- Hendrawan, M. H., Defung, F., & Wardhani, W. (2023). Un / desired impact of capital buffers : Evidence from Indonesian bank profitability and risk-taking Un / desired impact of capital buffers : Evidence from Indonesian bank profitability and. *Cogent Economics & Finance*. 11(2). 1-29. <https://doi.org/10.1080/23322039.2023.2245217>

- Hisan, U. F. C., & Septiarini, D. F. (2020). Pengaruh Faktor Fundamental Dan Variabel Makroekonomi Terhadap Capital Buffer Bank Syariah. *Jurnal Ekonomi Syariah Teori Dan Terapan*. 7(2). 356-371. <https://doi.org/10.20473/vol7iss20202pp356-371>
- Iqbal, M., Hakim, L., & Aziz, M. A. (2026). Determinants of Islamic bank stability in Asia. *Journal of Islamic Accounting and Business Research*. 17(1). 162–178. <https://doi.org/10.1108/JIABR-07-2022-0174>
- Jiang, H., Zhang, J., & Sun, C. (2020). How does capital buffer affect bank risk-taking? New evidence from China using quantile regression. 60. <https://doi.org/10.1016/j.chieco.2019.04.008>
- Lestari, D., Jun, A., & Ma, S. (2026). How do competition and regulation impact bank efficiency in emerging economies? A Comparative Analysis for conventional and Islamic Banks. *International Review of Economics & Finance*. 109. 105455. <https://doi.org/10.1016/j.iref.2026.105455>
- Ly, K. C., & Pham, H. (2025). The effect of bank regulation and supervision on capital buffer and insolvency risk: Does too-big-to-fail matter? *Finance Research Letters*. 86. 108863. <https://doi.org/10.1016/j.frl.2025.108863>
- Mawardi, I., Al Mustofa, M. U., Widiastuti, T., Fanani, S., Bakri, M. H., Hanafi, Z., & Robani, A. (2024). Comparative stability analysis of Indonesian banks: Markov Switching-Dynamic Regression for Islamic and conventional sectors. *PLoS ONE*. 19(4). <https://doi.org/10.1371/journal.pone.0301398>
- Naouar, A., Boulanouar, Z., & Grassa, R. (2024). Islamic banks and capital buffer behavior: A view from the Gulf cooperation council markets. *Pacific-Basin Finance Journal*. 83. 102257. <https://doi.org/10.1016/j.pacfin.2024.102257>
- Otoritas Jasa Keuangan. (2016). Peraturan OJK No. 11/POJK.03/2016 tentang Penerapan Capital Buffer. Lembaga Negara Republik Indonesia
- Otoritas Jasa Keuangan. (2025). Statistik Perbankan Syariah. Lembaga Negara Republik Indonesia
- Pires, C., Basílio, M., & Borralho, C. (2021). Determinants of Portuguese banks' profitability: An update. *Tourism and Management Studies*. 17(3). 63–70. <https://doi.org/10.18089/tms.2021.170305>
- Rendón, J. F., Cortés, L. M., & Perote, J. (2024). Basel III countercyclical bank capital buffer estimation and its relation to monetary policy. *Journal of Economics and Business*. 130. 106173. <https://doi.org/10.1016/j.jeconbus.2024.106173>
- Saeed, M. M., & Donkoh, E. (2026). Credit risk management, bank-specific factors, and financial performance of banks: Insights from an emerging economy. *Social Sciences & Humanities Open*. 13. 102523. <https://doi.org/10.1016/j.ssaho.2026.102523>
- Sutrisno, S., & Widarjono, A. (2024). Determinants of capital buffer in Islamic banks : the lesson from Indonesia. *Cogent Business & Management*. 11(1). 1-15. <https://doi.org/10.1080/23311975.2024.2331707>
- Tanjung, R. A., Imsar, & Harahap, R. D. (2023). Analysis Of Factors Influencing The Capital Buffer In Sharia Commercial Banks In Indonesia. *Islamic Banking: Jurnal Pemikiran Dan Pengembangan Perbankan Syariah*. 9(1). 65–88. <https://doi.org/10.36908/isbank.v9i1.913>
- Tohis, R. A., & Tubagus, S. (2025). Economic Capital and Risk Management in Islamic Finance. *Law and Financial Markets Review*. 18(2). 126–128. <https://doi.org/10.1080/17521440.2025.2456870>