Journal of Accounting Inquiry, Vol. 5, No. 1 (2026) 012-022
Published by Department of Islamic Accounting, Universitas Islam Negeri Sunan Kalijaga Yogyakarta
e-ISSN: 2961-8673
https://doi.org/10.14421/jai.2026.5.1.012-022

Financial Performance Determinants in Indonesian Banking: The Role of Credit Risk and Bank-Specific Factors

Dim Zarita Suryanugraha[1]*, Galih Nugraha[2], Dodi Tirtana[3], Tine Badriatin[4], Ana Sakinatun Nisa[5]
Faculty of Economics and Business, Universitas Siliwangi

Corresponding author: dimzarita@unsil.ac.id

Abstract

Purpose: This study examines the effects of credit risk and bank-specific factors on the financial performance of Indonesian banks, particularly Bank Groups Based on Core Capital (Kelompok Bank Berdasarkan Modal Inti/KBMI) 3 and 4, and addresses inconsistent findings in previous studies on bank profitability.
Methodology: The study employs panel data from 13 commercial banks listed on the Indonesia Stock Exchange during 2015–2024, yielding 130 observations. Financial performance is measured by Return on Assets (ROA), while credit risk is proxied by Non-Performing Loans (NPL). Bank-specific factors include Loan-to-Deposit Ratio (LDR), Operating Expenses to Operating Income (BOPO), Net Interest Margin (NIM), and Current Account Saving Account (CASA). The Random Effects Model (REM) with White cross-section standard errors is used for estimation.
Findings: NPL and BOPO have significant negative effects on ROA, while LDR and NIM positively and significantly affect ROA. CASA has an insignificant effect on ROA.
Novelty: This study provides evidence from large Indonesian banks and shows that operational efficiency and interest margin management are more important drivers of profitability than low-cost funding accumulation, offering implications for bank management and policymakers.

Keywords: Bank Specific Factor, Credit Risk, Financial Performance, KBMI, Non-Performing Loan

Article History:
Received: May 2026; Revised: June 2026 ; Accepted: June 2026

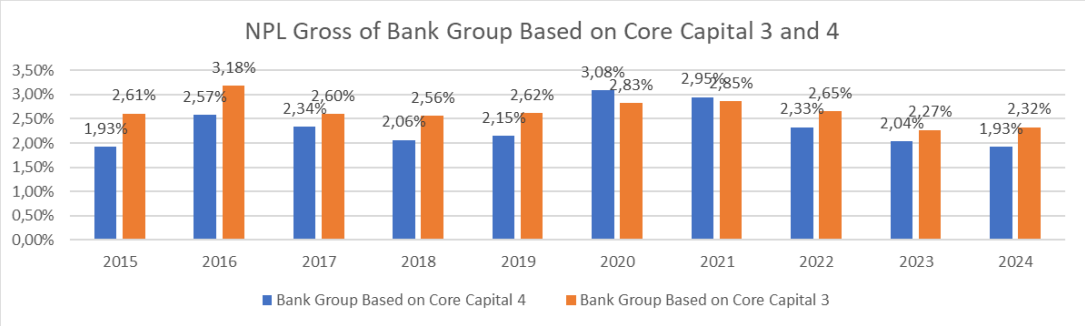
Introduction

Global banking institutions play a pivotal role in promoting financial stability and economic growth through the mobilization of monetary resources (Boachie et al., 2023). Within the modern financial system, banks function as intermediaries between surplus and deficit units, a role that has become increasingly critical amid the heightened post-pandemic global volatility, thereby contributing significantly to the economic dynamics of a country. In Indonesia, the primary function of commercial banks is to collect funds from the public in the form of deposits and redistribute them as loans to productive sectors. This lending activity constitutes the main source of bank income through interest earnings, which directly influence banking financial performance (Sukma et al., 2021).

However, expanding lending activities forces banks to navigate a delicate trade-off between volume growth and asset quality, as aggressive credit distribution inherently heightens exposure to credit risk. Credit risk arises when borrowers fail to fulfill their contractual obligations, potentially resulting in financial losses for banks (Al Zaidanin & Al Zaidanin, 2021). Emphasizes that the accumulation of excessive credit risk not only deteriorates bank financial performance but may also trigger broader financial system instability (Accornero et al., 2018). Persistent deterioration in banking performance may even increase the likelihood of bank failure (Suryanugraha, Masitoh, et al., 2025). Bank financial performance is influenced by both external and internal factors. External factors relate to macroeconomic conditions and financial system stability, while internal factors are associated with bank

specific characteristics that can be controlled by management, such as operational efficiency, liquidity levels, and risk management quality (Siddique et al., 2022). Ineffective management of these internal factors may lead to adverse selection and moral hazard in the lending process, thereby increasing vulnerability to credit risk and disrupting banking system stability (Ofori-Abebrese et al., 2016).

In the Indonesian context, the banking sector exhibits dynamic conditions. Although the national economy has relatively maintained stable growth, the banking industry continues to face challenges related to rising credit risk and economic uncertainty (Atichasari et al., 2023). This issue becomes increasingly important when considering large banks that play a systemic role in the national financial system.



Source: Financial Report of Indonesia Bank Groups Based on Core Capital 3 and 4

Figures 1. NPL Gross of Indonesia Bank Groups Based on Core Capital 3 and 4

Financial report data indicate that Bank Groups Based on Core Capital 3 and 4 characterized by large asset capacity, strong capital, and dominant market share still experience fluctuations in their Non-Performing Loan (NPL) ratios. This condition suggests that large scale and strong capitalization do not necessarily guarantee credit risk stability. Considering their strategic position as systemic banks, the dynamics of credit risk management and other internal factors warrant further investigation, as they may significantly affect both bank financial performance and national monetary stability (Rahmatullah, 2025).

On the other hand, prior empirical studies have yielded inconsistent findings. Several studies from report that credit risk, proxied by NPL, has a significant negative effect on bank financial performance (Ekinci & Poyraz, 2019; Oluwafemi, 2013; Siddique et al., 2022), while others find no significant relationship (Setyarini, 2020). These inconsistencies highlight the existence of a research gap regarding the relationship between credit risk and bank performance.

Furthermore, most previous studies do not differentiate banks based on their characteristics. In Indonesia, however, bank classification based on core capital reflects differences in capital capacity, operational scale, and risk management complexity. Bank classification based on core capital 3 and 4 are characterized by superior resource endowment and complex organizational structures, which concurrently elevates their exposure to reputational risks (OJK, 2024). Given their systemic importance, these tier 4 and tier 3 institutions often operate under the 'Too Big to Fail' paradigm, fundamentally altering their risk management behaviors compared to smaller counterparts. Therefore, studies specifically examining the impact of credit risk and bank-specific factors on financial performance within Bank classification based on core capital 3 and 4 remain relatively limited.

This study offers several contributions and provides novel insights into the field. First, it specifically focuses on Bank Groups Based on Core Capital 3 and 4, which play a systemic role in Indonesia's financial stability. Second, it integrates credit risk analysis with bank-specific factors such as operational efficiency and liquidity in explaining financial performance. Third, it utilizes panel data from Bank Groups Based on Core Capital 3 and 4 banks over the period 2015–2024 to provide a comprehensive analysis of the determinants of bank profitability.

Literature Review

Credit Risk and Bank Financial Performance

The banking industry faces eight primary risks: reputation risk, market risk, credit risk, liquidity risk, operational risk, compliance risk, legal risk, and strategic risk. Among these, credit risk is considered the most significant due to the dominance of loans in bank asset structures (Haryanto, 2016).

According to Markowitz (1952) Modern Portfolio Theory, the relationship between risk and return implies that increasing risk exposure may compromise the ability to generate optimal returns. In the context of banking, credit risk represented by Non-Performing Loans (NPL) can weaken financial performance because banks must allocate additional provisions for potential loan losses. These provisions increase operating expenses and reduce profitability, which is reflected in lower Return on Assets (ROA).

High levels of non-performing loans tend to weaken banking profitability, while ineffective credit risk management may increase systemic vulnerability and potentially trigger financial crises (Berger & DeYoung, 1997). Conversely, effective credit risk management enhances bank profitability (Sunaryo et al., 2021). Empirical studies by Ekinci & Poyraz (2019) and Siddique et al. (2022) find a significant negative relationship between NPL and Return on Assets (ROA), indicating that higher credit risk reduces bank profitability. However, Setyarini (2020) reports no significant effect. These mixed findings suggest that the relationship between credit risk and financial performance remains inconclusive.

A firm's financial performance can be reflected in its level of profitability. Profitability can be measured through various approaches by comparing the amount of profit generated with the company's assets or equity (Syafi'i & Haryono, 2021). Return on Assets (ROA) is a commonly used profitability indicator to assess a firm's ability to generate earnings from the total assets employed in its operational activities (Purnamawati, 2016).

Accordingly, the research hypothesis is formulated as follows:

H1: Non-Performing Loans (NPL) have a negative and significant effect on bank financial performance (ROA)

Bank Specific Factors and Financial Performance

Bank-specific factors represent internal components derived from banking operational processes and are directly controllable by internal management (Indonesia, 2015) . Ineffectiveness in managing these internal factors can adversely affect the balance sheet structure and pressure the bank's income statement performance (Ofori-Abebrese et al., 2016). Findings by Aspal et al. (2019) indicate that asset quality, management efficiency, liquidity, and earnings quality as bank specific factors exert a significant influence on banking financial performance.

According to Minsky et al., (1961) on Money in a Theory of Finance, banks serve as intermediaries by collecting funds from depositors and channeling them to borrowers who require financing (Minsky et al., 1961). Through this intermediation function, banks generate income primarily from lending activities. Therefore, a higher Loan-to-Deposit Ratio (LDR), which reflects a greater proportion of deposits allocated to loans, is expected to increase interest income and improve bank profitability.

Loan to Deposit Ratio (LDR) is a liquidity indicator that measures the proportion of total loans disbursed relative to third-party funds. This ratio compares total credit disbursed to total third-party funds. A higher LDR indicates more optimal utilization of deposits for credit distribution, which potentially enhances bank performance and profitability if managed prudently (Yulyanti et al., 2024). Setyarini (2020) found a positive and significant effect of LDR on Return on Assets (ROA). Thus, the second hypothesis is formulated as follows:

H2: There is a positive and significant effect of Loan to Deposit Ratio (LDR) on banking financial performance (ROA).

Based on efficiency theory, a firm is regarded as efficient when it can achieve the maximum possible output from a given set of inputs or utilize the minimum amount of inputs to produce a desired level of output (Farrell, 1957). In banking sector Operating Expenses to Operating Income (BOPO) is a ratio used to assess banking operational efficiency by comparing operating costs to operating income. A lower BOPO value indicates a superior level of bank efficiency (Nanda et al., 2019). Research by Anindiansyah et al. (2020) and Hanafia & Karim (2020) found a negative and significant relationship between BOPO and ROA. This suggests that the efficiency level in conducting operational activities significantly influences the financial performance generated by the bank.

H3: There is a negative and significant effect of BOPO on banking financial performance (ROA).

Based on Asset Liability Management Theory Ho & Saunders (1981), banks create value by effectively managing the gap between returns on earning assets and the cost of funding sources. An increase in this interest spread enables banks to generate greater net interest income, which positively affects profitability and financial performance. Net Interest Margin (NIM) serves as an indicator of operational efficiency used to evaluate management effectiveness in utilizing available resources. This ratio also plays a critical role in helping banks control their operational costs (Mahdatika & Shofawati, 2022). Net Interest Margin (NIM) reflects the comparison between net interest income and the bank's average earning assets. Net interest income is derived from the spread between interest income from disbursed credit and interest expenses arising from mobilized funds (Ramadanti & Setyowati, 2022). Studies by Ramadanti & Setyowati (2022) and Akbar & Nurdiansyah (2024) found a positive and significant effect of NIM on ROA.

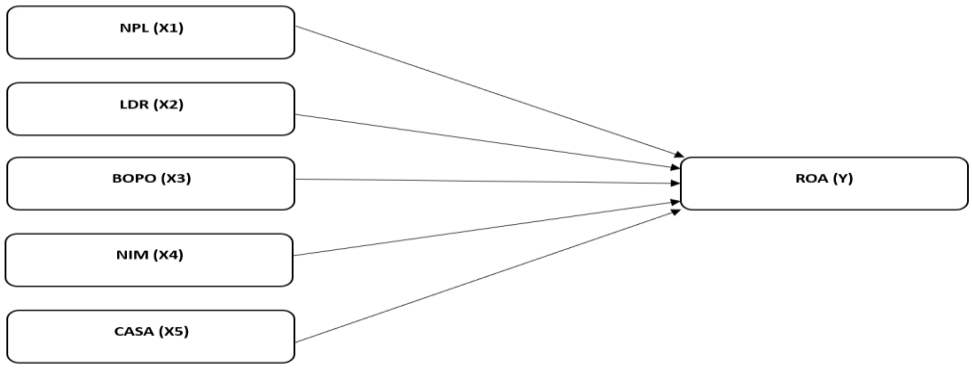
H4: There is a positive and significant effect of NIM on banking financial performance (ROA).

Asset Liability Management Theory emphasizes that bank profitability is closely linked to the management of funding costs and interest income. Lower-cost funding sources reduce interest expenses, increase net interest income, and consequently improve profitability and overall financial performance (Ho & Saunders, 1981).

Current Account Saving Account (CASA) comprises funds originating from the public, including individuals and business entities, collected through demand deposits and savings products (Subairi et al., 2022). Consequently, the CASA ratio is used to indicate a bank's cost of funds. An increase in bank income can occur if the cost of funds decreases, generally caused by a reduction in the proportion of high-cost funding sources, such as time deposits (Jennifer et al., 2022). A higher CASA ratio reflects an increasing proportion of low-cost funds in the bank's funding structure, thereby lowering the cost of funds and driving bank income. However Fitri & Nuraini (2023) and Wulandari & Wahyudi (2025) found a positive and significant relationship between CASA and ROA.

H5: There is a positive and significant effect of CASA on banking financial performance (ROA).

Research Framework



Figures 2. Research Framework

Method

This study employs a quantitative approach utilizing secondary data. The research population consists of all banks listed on the Indonesia Stock Exchange (IDX) during the 2015–2024 period. The year 2015 is selected as the starting point to ensure regulatory and data consistency, as it marks the period where the financial authority's banking classification was fully stabilized. The sampling technique utilized is purposive sampling, resulting in 13 banks that meet the criteria for Bank Groups Based on Core Capital 3 and 4 categories. The processed data is panel data with a total of 130 observations.

Operational Definition of Variables

The dependent variable in this study is banking financial performance, proxied by Return on Assets (ROA). The independent variables consist of Non-Performing Loans (NPL), Loan to Deposit Ratio (LDR), Operating Expenses to Operating Income (BOPO), Net Interest Margin (NIM), and Current Account Saving Account (CASA).

Table 1. Variable Measurement

Variabel	Formula
NPL	$\frac{Non\ Performing\ Loan\ (Coll\ 3,4,5)}{Total\ Loan} \times 100\%$
LDR	$\frac{Total\ Loan}{Total\ Third-Party\ Funds} \times 100\%$
BOPO	$\frac{Operating\ Expenses}{Operating\ Income} \times 100\%$
NIM	$\frac{Net\ Interest\ Income}{Average\ Earning\ Asset} \times 100\%$
CASA	$\frac{Current\ Account + Saving\ Account}{Current\ Account + Saving\ Account + Deposit} \times 100\%$
ROA	$\frac{Earning\ Before\ Tax\ (EBT)}{Total\ Aset} \times 100\%$

To test the determinants of bank profitability, the panel data regression model is formulated:

$$ROA_{it} = \beta_0 + \beta_1 NPL_{it} + \beta_2 LDR_{it} + \beta_3 BOPO_{it} + \beta_4 NIM_{it} + \beta_5 CASA_{it} + e_{it}$$

To test the determinants of bank profitability, the panel data regression model is formulated. The selection of the best estimation model was conducted through a series of statistical tests: the Chow Test, Hausman Test, and Breusch-Pagan Lagrange Multiplier (LM) Test. To produce the Best Linear Unbiased Estimator (BLUE), this study utilizes the White Cross-section Standard Errors technique, which automatically provides robust estimates against potential heteroskedasticity and autocorrelation issues. By applying this method, the resulting standard errors are adjusted, ensuring hypothesis testing remains valid and consistent without requiring additional data transformations

Results and Discussion

Before the regression estimation, formal tests were conducted to determine the most efficient panel data model. The results are summarized in Table 2:

Table 2. Model Selection Tests

Test Type	Probability	Decision
Uji Chow	0,0000	Fixed Effect Model (FEM)
Uji Hausman	0,1732	Random Effect Model (REM)
Uji Lagrange Multiplier	0,0000	Random Effect Model (REM)

Source: Data processing with EViews 12 (2026)

Based on Table 2, the Chow Test shows a probability value of 0.0000 (< 0.05), implying FEM is superior to the CEM. However, the Hausman Test yielded a probability of 0.1732 (> 0.05); thus, this study determines that the Random Effect Model (REM) is the optimal model. This is further confirmed by the LM Test (0.0000). The selection of REM indicates that while individual differences among these large banking institutions exist, such unique characteristics are strictly random and uncorrelated with the independent variables in the model. In the context of Bank Groups Based on Core Capital 3 and 4, this suggests that despite their distinct operational scales, their risk management behaviors and financial performance are heavily governed by uniform systemic factors and stringent regulatory frameworks.

Table 3. Multicollinearity Test (Correlation Matrix)

	NPL	LDR	BOPO	NIM	CASA
NPL	1,000000	-0,098442	0,543057	-0,355502	-0,008762
LDR	-0,098442	1,000000	0,191180	0,182295	-0,494390
BOPO	0,543057	0,191180	1,000000	-0,291411	-0,532298
NIM	-0,355502	0,182295	-0,291411	1,000000	-0,129804
CASA	-0,008762	-0,494390	-0,532298	-0,129804	1,000000

Source: Data processing with EViews 12 (2026)

The correlation matrix in Table 3 shows that all correlation values between independent variables are below 0.80, indicating the absence of serious multicollinearity.

Table 4. Model Estimation Results (REM with White Cross-section Standard Errors)

Variabel	Coeffisien	t-Statistic	Prob.
C	0,034048	3,685108	0,0050
NPL (X1)	-0,308299	-3,464169	0,0071
LDR (X2)	0,008436	2,688086	0,0249
BOPO (X3)	-0,043547	-7,837200	0,0000
NIM (X4)	0,258372	4,575924	0,0013
CASA (X5)	0,010011	1,929039	0,0858
R-Squared	0,785263		
F-Statistic	90,68990		
Prob (F-Stat)	0,000000		
Durbin-Watson	1,230541		

Source: Data processing with EViews 12 (2026)

The model yields an R-squared of 0.7852, indicating that 78.52% of the variation in ROA can be explained by NPL, LDR, BOPO, NIM, and CASA. The F-statistic (p = 0.0000) confirms that all independent variables simultaneously exert a significant effect on ROA.

Credit risk (NPL) shows a significant negative effect on ROA (-0.3082). Increased credit risk necessitates larger loan loss provisions (CKPN), which directly burdens net profit. This aligns with

Siddique et al. (2022) and Ekinci & Poyraz (2019). Furthermore, this empirical finding is highly reflective of the banking dynamics during the Covid-19 pandemic, where OJK implemented a nationwide credit restructuring policy (POJK No. 11/POJK.03/2020). This regulatory intervention artificially suppressed NPL levels by allowing banks to reclassify troubled loans as current. However, as the policy gradually phased out, the true underlying credit risk materialized, forcing banks to aggressively accumulate CKPN. For large institutions like Bank Groups Based on Core Capital 3 and 4, this lagging provisioning shock acted as a prolonged drag on their profitability, explaining the pronounced negative impact of NPL on ROA.

The LDR (Loan to Deposit Ratio) variable shows a significant positive effect on ROA, with a coefficient of 0,0084 (p-value 0,0249). This result implies that banks have been successful in utilizing third-party funds efficiently by channeling them into lending activities. In line with Money in a Theory of Finance, the effective conversion of deposits into earning assets allows banks to increase interest income and strengthen profitability. The positive effect of LDR on ROA indicates that large commercial banks are capable of managing liquidity while simultaneously pursuing profit generation. Throughout the observation period, banks with higher LDR ratios demonstrated a greater ability to transform available funds into productive assets that generate returns. Supported by broad branch networks and diverse funding sources, these banks are able to expand credit distribution without significantly increasing liquidity risk. This finding is consistent with Yulyanti et al. (2024), who argue that prudent loan allocation from deposited funds contributes positively to profitability. Moreover, the result corroborates the findings of Yulyanti et al. (2024) and Setyarini (2020), which document a positive and significant relationship between LDR and ROA. Consequently, effective intermediation practices and sound liquidity management play a crucial role in enhancing the financial performance of large Indonesian banks.

The Operating Expenses to Operating Income (BOPO) variable exerts a highly significant negative influence on ROA, with a coefficient of -0,0435 (p-value 0,0000). A lower BOPO ratio reflects a higher level of operational efficiency, indicating that banks are more effective in controlling operating costs relative to their operating income (Nanda et al., 2019). This result demonstrates that a bank's ability to manage and suppress operating expenses has a direct impact on improving net profit and overall financial performance. The magnitude and significance of the BOPO coefficient further suggest that operational efficiency is one of the most important determinants of profitability among large Indonesian banks. This finding implies that profitability is not solely driven by revenue growth but also by the bank's capacity to control operational costs. Rising personnel expenses, branch maintenance costs, and investments in digital transformation may substantially reduce profitability when they are not accompanied by proportional growth in operating income. Furthermore, the result supports Efficiency Theory, which argues that a firm is regarded as efficient when it can achieve the maximum possible output from a given set of inputs or utilize the minimum amount of inputs to produce a desired level of output (Farrell, 1957). The finding is also consistent with the studies of Anindiansyah et al. (2020) and Hanafia & Karim (2020), which highlight operational efficiency as a critical factor in enhancing banking profitability. Therefore, effective cost management remains essential for sustaining financial performance in large Indonesian banks.

The NIM (Net Interest Margin) variable exhibits a significant positive effect on ROA, with a coefficient of 0,2583 (p-value 0,0013). This finding indicates that profitability among large banks is highly dependent on their ability to maintain a favorable interest spread between interest income earned from loans and interest expenses incurred from funding sources. In line with Asset Liability Management Theory (Ho & Saunders, 1981), banks create value by effectively managing the gap between returns on earning assets and the cost of liabilities. A wider interest spread enables banks to generate greater net interest income, which subsequently enhances profitability and overall financial performance. NIM also serves as an indicator of management effectiveness in utilizing earning assets and controlling funding costs (Mahdatika & Shofawati, 2022). Large banks generally possess stronger

bargaining power in both lending and deposit markets, enabling them to secure relatively low-cost funding while maintaining competitive lending rates. Consequently, improvements in NIM directly translate into higher earnings and ROA. This result demonstrates that effective asset and liability management remains a crucial factor in sustaining profitability within the banking sector. Furthermore, the finding is consistent with the studies of Ramadanti and Setyowati (2022) and Akbar and Nurdiansyah (2024), which identify NIM as one of the primary drivers of bank profitability. Therefore, maintaining an optimal interest spread remains essential for enhancing the financial performance of large Indonesian banks.

The CASA (Current Account Saving Account) variable shows a positive coefficient of 0.0100, but with a significance level of 0.0858. This result indicates that the CASA variable does not have a significant effect on ROA. Although the positive coefficient suggests that a higher proportion of low cost funds may contribute to profitability, the effect is not statistically strong enough to influence bank financial performance. This finding is inconsistent with the expectation derived from Asset Liability Management Theory (Ho & Saunders, 1981), which argues that lower-cost funding sources reduce interest expenses, increase net interest income, and ultimately improve profitability. A higher CASA ratio is generally expected to lower the cost of funds and strengthen bank earnings. However, the insignificant result suggests that the benefits of low-cost funding may not be fully translated into higher profitability among large Indonesian banks. For Bank Groups Based on Core Capital 3 and 4, attracting and maintaining CASA balances increasingly requires substantial investments in digital banking infrastructure, information technology systems, and cybersecurity. As a result, the reduction in funding costs generated by higher CASA levels may be offset by rising operating expenses associated with digital transformation initiatives. Furthermore, low-cost funds may not yet constitute a sufficiently dominant proportion of total deposits to generate a significant impact on ROA. This finding is consistent with the studies of Putera and SS (2025) and Monika et al. (2022), which also reported an insignificant relationship between CASA and profitability. Therefore, while CASA remains an important source of low-cost funding, its contribution to profitability depends on the bank's ability to manage technology-related costs and convert funding advantages into sustainable earnings growth.

Conclusions

This study aims to analyze the influence of credit risk and bank-specific factors on financial performance (ROA) within Bank Groups Based on Core Capital 3 and 4 in Indonesia for the 2015–2024 period. Based on the analysis, it is concluded that NPL has a significant negative effect on ROA, confirming that asset quality management is crucial; an increase in non-performing loans burdens profits through the formation of allowance for impairment losses. Conversely, LDR and NIM variables were found to have a significant positive effect on ROA, indicating that large banks in Indonesia have successfully optimized credit distribution and effectively managed interest margins to enhance profitability.

Furthermore, BOPO exerts a highly significant negative influence on ROA and stands as the variable with the highest level of significance. This reinforces the fact that operational efficiency is the most vital determinant for banks in the Bank Groups Based on Core Capital 3 and 4. Meanwhile, the CASA variable does not significantly affect ROA; this indicates that while the use of "cheap funds" can lower interest costs, the high operational costs of digital transaction services and the non-dominant proportion of these funds result in a statistically insignificant impact on bank profitability.

Despite the systematic approach of this research, several limitations must be acknowledged that provide a context for its findings. First, the scope of this study is exclusively focused on banks categorized as Bank Groups Based on Core Capital 3 and 4; consequently, the results cannot be broadly generalized to banks with smaller capital scales, such as Bank Groups Based on Core Capital 1 and 2, which operate under distinct characteristic and operational frameworks. Second, the analytical model is constrained to internal bank-specific factors and does not incorporate external macroeconomic variables such as BI interest rates, inflation, or GDP growth which theoretically exert significant pressure on banking

profitability (ROA) during the observation period. Building upon these limitations, it is recommended that future researchers expand the sample coverage to include all banking categories in Indonesia or conduct a comparative analysis between different Bank Groups Based on Core Capital tiers to capture a broader industry perspective. Furthermore, incorporating external macroeconomic indicators as control or moderating variables would yield a more comprehensive and robust research model, ultimately providing a more accurate explanation of the complex dynamics influencing banking financial performance in Indonesia.

References

Accornero, M., Cascarino, G., Felici, R., Parlapiano, F., & Sorrentino, A. M. (2018). Credit risk in banks' exposures to non-financial firms. *European Financial Management*, *24*(5), 775–791. https://doi.org/10.1111/eufm.12138

Akbar, A. A., & Nurdiansyah, D. H. (2024). The Effect of NPL, BOPO, NIM on ROA of State-Owned Banks Listed on The Indonesia Stock Exchange. *INVEST: Jurnal Inovasi Bisnis dan Akuntansi*, *5*. https://doi.org/10.55583/invest.v5i1.635

Al Zaidanin, J. S., & Al Zaidanin, O. J. (2021). The impact of credit risk management on the financial performance of United Arab Emirates commercial banks. *International Journal of Research in Business and Social Science (2147- 4478)*, *10*(3), 303–319. https://doi.org/10.20525/ijrbs.v10i3.1102

Anindiansyah, G., Sudiyatno, B., Puspitasari, E., & Susilawati, Y. (2020). Pengaruh CAR, NPL, BOPO dan LDR terhadap ROA dengan NIM sebagai variable intervening (Studi pada bank yang go publik di Bursa Efek Indonesia periode tahun 2015-2018)

Aspal, P. K., Dhawan, S., & Nazneen, A. (2019). Significance of Bank Specific and Macroeconomic Determinants on Performance of Indian Private Sector Banks. *International Journal of Economics and Financial Issues*, *9*(2). https://doi.org/10.32479/ijefi.7727

Atichasari, A. S., Ratnasari, A., Kulsum, U., Kahpi, H. S., Wulandari, S. S., & Marfu, A. (2023). Examining non-performing loans on corporate financial sustainability: Evidence from Indonesia. *Sustainable Futures*, *6*, 100137. https://doi.org/10.1016/j.sftr.2023.100137

Berger, A. N., & DeYoung, R. (1997). Problem loans and cost efficiency in commercial banks. *Journal of Banking & Finance*, *21*(6), 849–870. https://doi.org/10.1016/S0378-4266(97)00003-4

Boachie, R., Aawaar, G., & Domeher, D. (2023). Relationship between financial inclusion, banking stability and economic growth: A dynamic panel approach. *Journal of Economic and Administrative Sciences*, *39*(3), 655–670. https://doi.org/10.1108/JEAS-05-2021-0084

Ekinci, R., & Poyraz, G. (2019). The Effect of Credit Risk on Financial Performance of Deposit Banks In Turkey. *Procedia Computer Science*, *158*, 979–987. https://doi.org/10.1016/j.procs.2019.09.139

Farrell, M. J. (1957). The Measurement of Productive Efficiency. *Journal of the Royal Statistical Society*. Series A (General), 120(3), 253. https://doi.org/10.2307/2343100

Fitri, R., & Nuraini, D. (2023). Effect of CASA, Fee-Based Income, and Intellectual Capital Towards Profitability of Islamic Banking in Indonesia. *Muqtasid: Jurnal Ekonomi Dan Perbankan Syariah*, *14*(1), 35–50. https://doi.org/10.18326/muqtasid.v14i1.35-50

Hanafia, F., & Karim, A. (2020). Analisis CAR, BOPO, NPF, FDR, NOM, Dan DPK Terhadap Profitabilitas (ROA) Pada Bank Syari'ah Di Indonesia. *Target : Jurnal Manajemen Bisnis*, *2*(1), 36–46. https://doi.org/10.30812/target.v2i1.697

Haryanto, S. (2016). Determinan Permodalan Bank Melalui Profitabilitas, Risiko, Ukuran Perusahaan, Efisiensi Dan Struktur Aktiva. *Jurnal Ekonomi dan Bisnis*, *18*(1), 117. https://doi.org/10.24914/jeb.v19i1.483

Ho, T. S. Y., & Saunders, A. (1981). The Determinants of Bank Interest Margins: Theory and Empirical Evidence. *The Journal of Financial and Quantitative Analysis*, 16(4), 581. https://doi.org/10.2307/2330377

Indonesia, I. B. (2015). *Manajemen Risiko 1*. Gramedia Pustaka Utama.

Jennifer, Radianto, W. E. D., & Kohardinata, C. (2022). Determinant effect of CASA and NPM on market ratio of banks listed in IDX. *Business and Finance Journal*, *7*(2), 217–237. https://doi.org/10.33086/bfj.v7i2.3490

Mahdatika, I. C., & Shofawati, A. (2022). Pengaruh Manajemen GAP, Modal, Likuiditas, Risiko Pembiayaan, Tingkat Efisiensi dan Ukuran Bank (Size) terhadap Net Interest Margin pada Bank Syariah Mandiri, Bank BRI Syariah dan Bank BNI Syariah Tahun 2015-2019. *Islamic Banking : Jurnal Pemikiran dan Pengembangan Perbankan Syariah*, *7*(2), 315–332. https://doi.org/10.36908/isbank.v7i2.304

Markowitz, H. (1952). Portofolio Selection. *The Journal of Finance*, *7*(1), 77–91. https://doi.org/10.1111/j.1540-6261.1952.tb01525.x

Minsky, H. P., Gurley, J. G., Shaw, E. S., & Enthoven, A. C. (1961). Money in a Theory of Finance. *The Journal of Finance*, *16*(1), 138. https://doi.org/10.2307/2977668

Monika, A., Hakim, A. L., & Ahmad, A. N. (2022). Pengaruh Current Asset Saving Account (Casa) Dan Fee-Based Income (Fbi) Terhadap Return on Asset (Roa) Pada Bank Jabar-Banten Syariah (Bjbs) Periode 2016-2020. *Jurnal Ekonomi Syariah Pelita Bangsa*, *7*(02), 138–147. https://doi.org/Doi.org/10.37366/jespb.v7i02.584

Nanda, A. S., Hasan, A. F., & Aristyanto, E. (2019). Pengaruh CAR dan BOPO Terhadap ROA pada Bank Syariah pada Tahun 2011-2018. *Perisai : Islamic Banking and Finance Journal*, *3*(1), 19–32. https://doi.org/10.21070/perisai.v3i1.2160

Ofori-Abebrese, G., Pickson, R. B., & Opare, E. (2016). The Effect of Bank Specific Factors on Loan Performance of HFC Bank in Ghana. *International Journal of Economics and Finance*, *8*(7), 185. https://doi.org/10.5539/ijef.v8n7p185

OJK. (2024). *Indonesia Banking Booklet 2024* (11th ed.). Departement of Banking Licensing and Crisis Management Otoritas Jasa Keuangan.

Oluwafemi, A., Stephen. (2013). Risk Management and Financial Performance Of Banks In Nigeria. *IOSR Journal of Business and Management*, *14*(6), 52–56. https://doi.org/10.9790/487X-1465256

Purnamawati, I. G. A. (2016). The effect of capital structure and profitability on stock price (Study of the manufacturing sector in Indonesia Stock Exchange). *International Journal of Business, Economics and Law, 9(1), 10-16*

Putera, A. V. A., & SS, V. D. (2025). The Influence of CASA, FBI, LDR and BOPO on Digital Banking Profitability in Indonesia. *Contemporary Studies in Economic, Finance and Banking*, *4*(2).

Rahmatullah, D. (2025). *The Role of Bank Profitability and Liquidity in Indonesia's Economic Growth: An Empirical Study on ROA, LDR, and CAR*. *16*(02).

Ramadanti, F., & Setyowati, E. (2022). Pengaruh NPL, LDR, BOPO dan Nim Terhadap Roa Pada PT. Bank Mandiri (Persero) Tbk Tahun 2013-2021. *Ekombis Review: Jurnal Ilmiah Ekonomi dan Bisnis*, *10*(2). https://doi.org/10.37676/ekombis.v10i2.2170

Setyarini, A. (2020). Analisis pengaruh CAR, NPL, NIM, BOPO, LDR terhadap ROA (Studi pada Bank Pembangunan Daerah di Indonesia periode 2015-2018). *Research Fair Unisri*, *4*(1). https://doi.org/10.33061/rsfu.v4i1.3409

Siddique, A., Khan, M. A., & Khan, Z. (2022). The effect of credit risk management and bank-specific factors on the financial performance of the South Asian commercial banks. *Asian Journal of Accounting Research*, *7*(2), 182–194. https://doi.org/10.1108/AJAR-08-2020-0071

Subairi, S., Anwar, K., Ramadhani, E. F., & Hamzah, Muh. (2022). Kontribusi Giro Dalam Penghimpunan Dana Current Account Saving Account (CASA) Pada PT Bank Sumut KCP

Syariah SImpang Kayu Besar. *Profit: Jurnal Kajian Ekonomi dan Perbankan Syariah*, *6*(1). https://doi.org/10.33650/profit.v6i1.3516

Sukma, A., Marlina, M., & Kusmana, A. (2021). Analisis Bank Specific Factor terhadap Penyaluran Kredit Perbankan Konvensional. *Jurnal Akuntansi, Keuangan, dan Manajemen*, *2*(4), 293–307. https://doi.org/10.35912/jakman.v2i4.463

Sunaryo, D., Kurnia, D., Adiyanto, Y., & Quraysin, I. (2021). Pengaruh Risiko Kredit, Risiko Likuiditas dan Risiko Operasional Terhadap Profitabilitas Perbankan Pada Bank Umum di Asia Tenggara Periode 2012-2018. *Jurnal Ilmu Keuangan dan Perbankan (JIKA)*, *11*(1), 62–79. https://doi.org/10.34010/jika.v11i1.3731

Suryanugraha, D. Z., Masitoh, N., & Nisa, A. S. (2025). Analisa Prediksi Kebangkrutan Perusahaan (Financial Distress) Menggunakan Metode Altman Z-Score Pada BPR Dan BPRS Kota Dan Kabupaten Tasikmalaya Jawa Barat 2019 – 2023. *Akuntansi 45*, *6*(1), 165–175. https://doi.org/10.30640/akuntansi45.v6i1.4225

Syafi'i, I., & Haryono, S. (2021). Pengaruh Leverage, Ukuran Perusahaan dan Inflasi terhadap Profitabilitas Pada Bank Umum Syariah di Indonesia. *MALIA: Journal of Islamic Banking and Finance*, *5*(1), 17–26.https://doi.org/10.21043/malia.v5i1.10482

Wulandari, S. P., & Wahyudi, I. (2025). Pengaruh Current Account Saving Account (CASA) terhadap Return on Assets (ROA) pada Bank Konvensional di Indonesia: Peran Moderasi Capital Adequacy Ratio (CAR). *Liabilities (Jurnal Pendidikan Akuntansi)*, *8*(2), 62–73.

Yulyanti, S., Jamil, P. C., & Habillah, J. (2024). The Impact of Non-Performing Loans (NPL) and Loan-to-Deposit Ratio (LDR) on the Profitability of Conventional Commercial Banks Listed on the Indonesia Stock Exchange. *INVEST: Journal of Business and Accounting Innovation*, *4*. https://doi.org/10.55583/invest.v4i1