

THE ROLE OF LIQUIDITY RISK, INTEREST RATE RISK, AND CREDIT RISK IN INFLUENCING THE FINANCIAL PERFORMANCE OF INDONESIAN BANKS

Vina Ayu Nur Septyana¹, Rani Lokonta Sari Sembiring², Farah Margaretha Leon^{3*}

^{1,2,3}Faculty of Economics & Business, Universitas Trisakti

*Corresponding Author: farahmargaretha@trisakti.ac.id



e-ISSN 2686-0058

p-ISSN 2715-7695

Informasi Artikel

Tanggal masuk

25 Mei 2025

Tanggal revisi

27 Juni 2025

Tanggal diterima

11 Juli 2025

Kata Kunci:

financial performance, leverage, loan-to-deposit ratio, credit risk, liquidity risk, interest rate risk, bank size

ABSTRACT

This research intends to analyze the impact of liquidity risk, credit risk, loan-to-deposit ratio (LDR), and bank size on the Financial performance of banks in Indonesia that are listed on the Indonesia Stock Exchange (IDX) from 2019 to 2023. The sample includes 41 banks totaling 205 yearly observations. The analysis method utilized is panel data regression, which applies the Random Effect Model technique via Eviews 9.0 software. The findings indicated that liquidity risk, LDR, and bank size significantly influenced financial Performance, as represented by return on assets (ROA). In contrast, credit risk had a significant negative impact on ROA. These results suggest that managing liquidity, lending efficiency, and the size of bank assets are key elements in enhancing bank profitability.



INTRODUCTION

Banks are crucial for a nation's economic development, as industrial growth would be challenging without funding strategies and initiatives (Akinselure et al., 2025). Nearly every facet of economic activity relies on banks as financial institutions capable of conducting or securing their operations. The effectiveness of banks can be evaluated via their financial Performance, which reflects their financial status during a specific timeframe and serves as the foundation for evaluating the banks' capability to gather and allocate funds to the public. Consequently, strong financial Performance is crucial for banks in executing their operations, as banks depend significantly on customer loyalty to maintain the utilization of their services (Karim et al., 2024)

Financial Performance refers to the results of an evaluation of an entity's ability to manage its financial resources efficiently and sustainably. This measurement includes various aspects, such as profitability, liquidity, efficiency, and financial stability, that are

used to assess the extent to which the entity can manage assets and liabilities to minimize risks and achieve its financial objectives. Risks in managing assets and liabilities can significantly impact financial Performance, especially in maintaining a balance between income, operating expenses, and business sustainability in the long term. Some variables used in this analysis include Liquidity risk, Interest rate risk, Credit risk, Bank size, and Leverage (Akinselure et al., 2025). All these variables are independent and control indices compared with the dependent financial performance index, as measured by Return on Asset (ROA).

Liquidity risk is one of the main challenges faced by financial institutions, especially banks. It is a condition in which banks face difficulties in meeting their short-term obligations, especially when customers withdraw their deposits suddenly. When a significant withdrawal demand occurs, the bank may not have sufficient liquid assets to fulfill it, which increases liquidity risk (Sifrain, 2025). Effective liquidity risk is essential to maintain financial stability and improve Performance. According to Akpotu., (2024) research, it positively influences financial Performance, especially regarding (ROA). This suggests that their financial Performance improves when banks can maintain good liquidity with high current and quick ratios. Contrary to Ambetsa Amira et al. (2023) research, it negatively influences banks' financial Performance, specifically (ROA). This indicates that banks that cannot manage liquidity well will experience a decrease in profitability.

Interest rate risk is the risk arising from fluctuations in market interest rates that can affect the value of a financial institution or company's assets, liabilities and cash flows. Interest rate changes can significantly impact profitability and financial stability, especially for banks that act as financial intermediaries. Interest rate risk is a significant concern in banking risk management; changes in interest rates can affect net interest income and the economic value of a bank, which is related to its impact on profitability and stock returns in the banking sector. According to research by Ivansyah et al. (2025), it negatively influences financial Performance, namely (ROA), where fluctuations in interest rates can increase operating costs and reduce the efficiency of using bank assets. Contrary to research by Mega Berliana et al. (2025), interest rate risk positively influences financial Performance, and managing changes in interest rates will tend to earn higher profits.

Credit risk is one of the main factors affecting the financial stability of banks, especially in uncertain economic conditions. High levels of credit risk, such as default risk and concentration risk, can lead to increased loan losses and decreased earnings. Effective credit risk mitigation strategies, such as diversification and collateral, are essential to minimize these risks and improve overall financial Performance. Thus, performance risk is critical to maintaining the stability and profitability of financial institutions (Anwulika Ogechukwu Scott et al., 2024). Research by Akinselure et al. (2025) shows that credit risk positively influences financial Performance, so good credit risk management can improve the financial performance of banks. Performance conducted by Ukpong & Essien (2022) found a positive relationship between credit risk and financial Performance. Contrary performance research conducted by Neupane & Sapkota (2025) shows that credit risk negatively influences financial Performance, which means performance increases in credit risk tend to reduce bank profitability.

The loan-to-deposit ratio (LDR) is crucial to risk management and effective banking strategy. It represents the equilibrium between loans issued by banks and deposits gathered from clients. It also assesses how effectively the bank oversees its liquidity by comparing the overall loans extended with the total deposits obtained during a specific timeframe. A study by Beni et al. (2023) indicates that LDR positively impacts financial Performance. It is observed when the LDR ratio is at a suitable level, the Financial Performance of the bank increases. The findings from the study by Teruna Awaloedin and Apriyati

(2023) indicate that LDR positively affects financial Performance, suggesting that the bank's profit (ROA) will also increase. Unlike Amarasinghe (2022), research indicates that banks with a higher LDR can produce increased interest income. Nonetheless, if the LDR is excessively high and liquidity risk escalates, it will adversely affect (ROA).

Bank size indicates a bank's total assets or operational scale, which is a crucial factor that can influence multiple facets of bank performance and functioning. The size of a bank can influence its capability to handle risk. A large bank size significantly contributes to enhancing banking profitability. Findings from Priharta & Gani (2023) indicate that the size of a bank positively influences its financial Performance. This indicates that bigger banks can take advantage of economies of scale, resulting in better financial outcomes. A study by Dahlan et al. (2023) indicated that the size of a bank is positively correlated with its financial Performance.

Leverage Performance is an instrument used to measure the extent of a company's dependence on creditors in financing its assets. A company with a high level of leverage greatly depends on external sources of funds to finance its assets. Conversely, companies with lower leverage prioritize using internal capital for asset financing. Therefore, the leverage level of a company reflects the extent to which the company is exposed to financial risks that may arise. Research by Billikusuma, C. A., Dimas, S., & Saputro, R. (2024) found that leverage positively influences financial Performance. The research (Fathmaningrum & Renaldo, 2024) shows that leverage positively affects financial Performance. In contrast, the opinion of Omri, N. A. E., Neffati, N., & Guenichi, H. (2024) shows that leverage hurts financial Performance.

Based on Performance and the shortcomings of existing research, this study will examine "factors that influence financial performance in the Indonesian banking sector." This study includes a novel variable in the form of loan-to-deposit ratio (LDR), referring to previous research that shows that LDR positively impacts bank financial performance (Akinselure et al., 2025). This study makes a meaningful contribution to understanding the banking industry's dynamics, especially related to the impact of liquidity management on bank financial performance. This study extends the pre-existing theoretical discussion by building a regression model through panel data analysis, as well as using Return on Asset (ROA) as a leading indicator to quantitatively evaluate the impact of loan-to-deposit ratio (LDR) on bank financial performance (Sam et al., 2025).

This study aims to examine the impact of liquidity risk, interest rate risk, credit risk, loan-to-deposit ratio, bank size, and leverage on bank financial performance to improve understanding of the factors that affect the stability and profitability of the banking industry.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Financial Performance

Financial Performance involves analyzing the financial state of an organization. This encompasses the organization's capacity to fulfill financial commitments, oversee assets, and produce profits (Ahmad et al., 2024). Financial Performance refers to how effectively an organization, like a company or bank, manages its assets and liabilities to create revenue and profit (Winarto & Dewi, 2019). Financial reports offer a concise overview of information for management regarding decision-making; thus, analyzing financial performance reports is a vital resource for comprehending the company's financial status. One can examine the balance sheet and the income statement to determine if the company's operations are profitable (Moh). Zaki Kurniawan, 2017). Financial Performance is evaluated using Return on Assets (ROA), an indicator utilized as the primary gauge to evaluate banks' Financial Performance. Its Performance offers a direct view of the efficiency of assets in generating profits. ROA is determined by dividing net

income by total assets, offering insights into the profit generated from each unit of assets owned (Kyere & Ausloos, 2021).

$$ROA = \frac{Net\ Income}{Total\ Assets}$$

Liquidity risk

Liquidity risk refers to the potential that a bank or financial institution cannot promptly fulfill its short-term commitments without facing considerable losses from an inability to quickly access funds or liquidate assets without a depreciation in value (Alsharif, 2024). When banks issue substantial loans, the earnings produced by banks will likewise rise. Nonetheless, this situation can lead to issues if the bank cannot handle its liquidity to supply the funds that customers may need or withdraw. In this situation, the bank must guarantee that fund management does not result in a liquidity surplus or deficit. Banks that fail to manage their liquidity effectively face risks that can negatively impact their profitability (Tran et al., 2016). Liquidity risk has been identified as a crucial element in the banking system since it pertains to the risk that banks may be unable to meet the demands of depositors or finance asset growth when required (Cai & Zhang, 2017). Liquidity risk is assessed by the ratio of liquid assets to total assets, representing the proportion of a company's current or liquid assets to its total assets. This ratio indicates the degree to which the company possesses assets that can be quickly converted into cash to satisfy its short-term liabilities (Sifrain, 2025).

$$LQR = \frac{Liquid\ Asset}{Total\ Deposits}$$

Interest rate risk

Interest rate risk refers to the danger encountered by banks or financial institutions stemming from changes in interest rates, which can influence the worth of their assets, liabilities, and earnings. Adjustments in interest rates can influence net interest margins, the market valuation of assets and liabilities, as well as the profitability levels of banks (Abdymomunov et al., 2023). When interest rates fluctuate, whether increasing or decreasing, it can significantly influence the worth of assets and liabilities owned by the institution and may be considerably impacted. Consequently, banks must establish strong risk management strategies to lessen the potential effects of interest rate risk, ensuring profitability and financial stability. Generally, interest rate risk presents considerable hurdles for banks in sustaining their market position (Arief et al., 2021). Interest rate risk is assessed by evaluating the ratio of interest income to the firm's total assets; this metric helps to identify the extent to which the company's assets produce interest income (Bello et al., 2024)

$$INT = \frac{Interest\ Income}{Total\ Asset}$$

Suppose the value of this ratio is high. In that case, the company's dependence on interest income is greater, so changes in interest rates will have a greater influence on its financial stability and Performance. Conversely, if the Performance of this ratio is low, the company will be less dependent on interest income and tend to be more stable when interest rates change (Musiega et al., 2017).

Credit risk

Credit risk refers to the danger encountered by a financial entity when a borrower fails to repay or the possible loss for the bank if the borrower does not meet debt responsibilities on the Loan's due date (Saleh & Abu Afifa, 2020). Precise credit risk assessment enhances economic capital efficiency, ultimately influencing financial Performance by enabling performance differentiation between reliable and unreliable

borrowers in the banking sector. Financial institutions must guarantee that their borrowers meet their responsibilities to minimize potential losses from uncollectible loans that may result in insolvency (Abu-Alrop & Kokh, 2020). This implies that bank management must evaluate the borrower's financial situation before granting loans, avoid excessive dependence on collateral, and consider the bank's capacity to enforce penalties on borrowers. Credit risk is assessed through Non-Performing Loans (NPL), which indicates lending risk by calculating non-performing loans as a fraction of the total loans granted (Karim et al., 2024).

$$CR = \frac{NPL}{Total\ Loans}$$

A higher NPL value indicates poorer credit quality for the bank, signifying an increase in non-performing loans and resulting in losses. On the other hand, a decrease in NPL corresponds to an increase in the bank's profit or profitability. Consequently, non-performing loans serve as a measure to assess credit risk and reflect the quality of banks' credit portfolios to borrowers (Yüksel et al., 2017).

Loan-to-deposit ratio

The loan-to-deposit ratio (LDR) is a ratio that shows how much the bank uses customer deposit funds to provide loans to other parties (Akber & Dey, 2020). The loan-to-deposit ratio (LDR) also illustrates banks' efficiency in utilizing public funds to provide loans. The high and low LDR values reflect the amount of credit disbursed, so if the LDR ratio increases, the number of installments issued will also increase, generating income for the bank (Agung Prayogi, 2022). Banks that face a situation where they are unable to fulfill obligations related to funds obtained from customers (illiquid) will have difficulty in gaining public trust to invest their funds, so operations in lending will be disrupted and have an impact on high and low levels of banking profitability (Yunita et al., 2022). The Loan-to-deposit ratio (LDR) is measured by comparing total loans to total deposits owned by the bank; this shows that to assess the extent to which deposit funds are used for lending Karim et al.,(2024).

$$LDR = \frac{Total\ Loan}{Total\ Deposit}$$

A high LDR indicates that the bank is actively lending, but deposit funds are insufficient to meet liquidity needs. Meanwhile, an LDR that is too low indicates that the bank has not maximally utilized the available funds.

Bank size

The size of a bank is a critical attribute for comprehending the extent of operations, which can aid in improved risk management (Boateng et al., 2025). Bank size refers to the magnitude of a bank, which total assets, overall sales, average sales levels, and average total asset levels can represent. The size of a bank is also connected to its capital adequacy. According to Saarah et al. (2023), a larger bank size enhances bank assets and financial capital, facilitating geographical expansion and the creation of new service offerings. Larger banks aim to generate capital with reduced transaction expenses to enhance profitability (Abiad et al., 2025). Big banks typically receive greater government protection since their failure would have a broader economic effect. According to research by Tashkandi (2022), the size of a bank is characterized by its total assets and capital ownership.

$$SIZE = Log\ n\ total\ Asset$$

Leverage

Leverage refers to firms utilizing assets or funding sources with fixed costs (fixed expenditures). It measures the company's ability to handle debt to generate profits and repay it (Almasri et al., 2024). This is a crucial element influencing financial outcomes, as it can enhance profitability by boosting the company's capital for growth and expansion (Silambarasan & Jayanthan, 2024). In banking, the debt-to-equity ratio is crucial to assessing a bank's reliance on debt. When used judiciously, leverage can enhance financial results, but it should be balanced with robust risk management strategies to ensure lasting stability (Akinselure et al., 2025). This indicates that leverage is a ratio that assesses the extent to which the company's funding sources are supported by debt. Leverage is assessed by the debt-to-asset ratio, which contrasts total liabilities with the company's overall assets; this ratio indicates how much the company finances its assets via debt (Rahma, Ayumi, 2020).

$$LEV = \frac{\text{Total Liabilities}}{\text{Total Asset}}$$

In other words, the higher the ratio, the greater the company's dependence on debt, which means higher financial risk. Conversely, a low ratio indicates a more stable and healthy financial condition.

Conceptual Framework

Akinselure et al. (2025) research results show that liquidity risk positively impacts a bank's financial performance. Musiega et al. (2017) research shows that interest rate risk has a positive effect on ROA, in line with the results found by (Jaelani et al., 2024). The research findings of Akinselure et al. (2025) also show that credit risk positively affects financial Performance, as found in Performance, 2019). According to the study of Ika Nurfitriani (2021), the loan-to-deposit ratio (LDR) has a positive effect on ROA, which is also supported by Parvin et al. (2019). Obeid'sObeid's (2023) research findings show that bank size positively affects financial Performance, which is Performance by (Nelly et al., 2019). Based on a study by Iqbal & Javed (2017), leverage has a positive impact on financial Performance, with the Performance revealed by (Aymen et al., 2023). Based on the relationship between these variables, the conceptual framework in this study can be presented as follows:

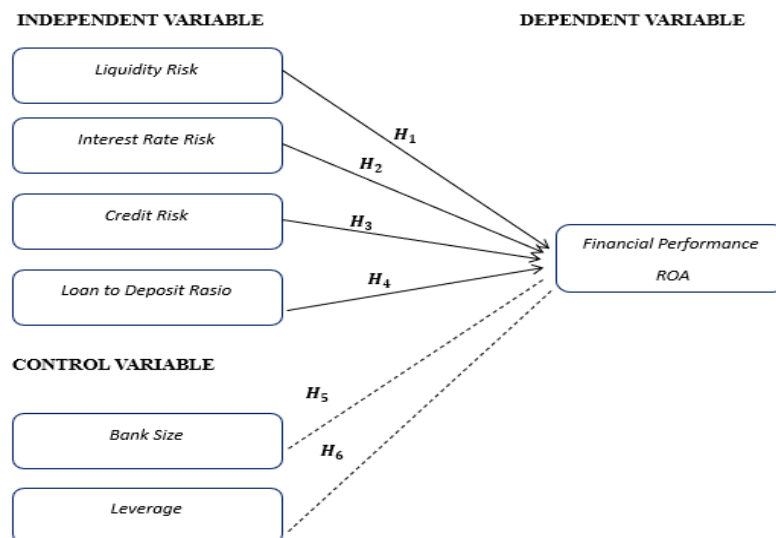


Figure 1: Conceptual Framework Chart

Hypothesis Development

The effect of liquidity risk on Financial Performance

Previous studies by Akinselure et al. (2025) indicate that liquidity risk adversely impacts financial Performance. Research Performance & Morawakage (2019) indicate that liquidity risk adversely impacts financial Performance, particularly with the findings of Jamal et al. (2023), which indicate that liquidity risk adversely affects financial Performance and Performance of liquidity can impede operational efficiency and profitability, ultimately resulting in reduced ROA for companies encountering these risks. Conversely, research by Landitha et al. (2024) indicates that liquidity risk positively influences financial Performance, highlighting that perceived liquidity can enhance (ROA).

H₁: Liquidity Risk Affects Financial Performance

The effect of interest rate risk on Financial Performance

Past research by Akinselure et al. (2025) indicates that interest rates positively influence financial Performance, specifically performing ROA. A study by Onyango and Kalunda (2023) revealed that interest rate risk positively affects the financial Performance of banks. iPerformanceis study aligns with the findings of (Sely Megawati Wahyudi Nona Lice Pota Buga, 2021), indicating that interest rates positively influence financial Performance as assessePerformancehis indicates that as interest rates rise, bank earnings also rise, potentially boosting ROA in contrast to the findings of Hanantijo & Respati (2018), which indicate that interest rate risk negatively impacts financial Performance.

H₂: InterPerformancesk Affects Financial Performance

The effect of credit risk on financial Performance

Performance research by Akinselure et al. (2025) showed that credit risk positively influences financial Performance as a measure of Performance, so it was found that good credit risk management can improve the financial performance of banks. Performancenducted by Sophie Malalu (2024) found that credit risk positively influences financial Performance in Kenya. In line with research conducted by Mayowa G. Ajao Ehi P. Oseyomon (2019), credit risk positively affects financial Performance, especially performance Assets (ROA). Increasing NPLs encourages banks to tighten credit risk management and increase loan loss reserves. This can improve the efficiency of managing non-performing assets and ultimately boost the bank's financial Performance. The opposite results, conducted by Chaibi (2016), show that credit risk hurts financial Performance, especially performance results indicating the importance of effective credit risk management in maintaining stability and financial Performance in banks. Performances have also found that higher credit risk hurts financial Performance (Jacob Akomeah et al., 2020). An increase in the level of NPLs leads to higher provisioning costs, reducing bank profitability and overall financial stability.

H₃: Credit Risk Affects Financial Performance

The Effect of Loan to deposits Ratio on Financial Performance

According to previous research, Sam et al. (2025) show that loan ratio research positively affects financial Performance. The same research by PerformanceWijayanto et al. (2025) found that the loan ratio positively influences financial performance. Similarly, research conducted by Latif et al. (2022) states that LDR has a positive influence on financial

Performance. This demonstrates that capital structure and good liabilities will ensure that funds raised from deposits can be channeled productively without increasing the risk of excessive liquidity, which in turn affects a company's financial Performance. On the contrary, research by Amarasinghe (2022) shows that the loan ratio negatively affects financial Performance. Performance indicates that performances with higher LDR may face liquidity problems that can affect their profitability. In line with Obeidat et al. (2021), research states that the loan-to-deposit ratio (LDR) hurts financial Performance. This can Prevent the risk of default, increase the cost of loan loss reserves, and reduce net income, which impacts ROA.

H₄: Loan-to-deposit ratio affects Financial Performance

The effect of bank size on Financial Performance

Previous research by Akinselure et al. (2025) shows that bank size hurts financial Performance. Research Performance Eyigege (2018) found that bank size hurts financial Performance. Where the Performance of bank size is caused by a decrease in scale, indicating that larger banks may incur higher costs that outweigh the benefits of size, other studies have also found that bank size hurts financial performance because Performance may not consistently achieve better financial Performance compared to Performanceanks (Adabenege et al., 2015). Contrary to research conducted by Mulbah, K. T., Kurbonov, S., & Nasriddinov, B. (2024), bank size positively influences financial performance in banks. Performance shows that increased bank size can lead to increased efficiency and profitability. Other research related to the effect of bank size on Return on Assets conducted by Shawtari et al. (2018) found that bank size has a positive effect on ROA.

H₅: Bank Size Affects Financial Performance

The Effect of Leverage on Financial Performance

Performance by Akinselure et al. (2025) shows that leverage positively affects financial performance, particularly Performance through (ROA). This suggests that companies with higher leverage achieve better financial results. Research conducted by Laela Ardhana et al. (2024) found that leverage positively affects financial Performance. Other research conducted by Nazar Suhada and Ramdhan Ryanto (2025) shows that leverage positively affects financial performance because high leverage can utilize taxes from debt interest and increase profits and company value. In contrast, Parashtiwi's (2023) research shows that leverage hurts financial Performance. The analyPerformancehat leverage hurts (ROA) because higher debt leads to lower financial Performance. In line performance conducted by Deden Kurniawan and Samhaji (2020) said that leverage hurts financial Performance because iPerformanceverage causes companies to bear higher interest costs and increases the risk of default, ultimately reducing profits and the effectiveness of asset management.

H₆: Leverage Affects Financial Performance

RESEARCH METHODS

The research design employed in this study is hypothesis testing, which seeks to evaluate the impact of independent variables, including liquidity risk, interest rate risk, credit risk, and loan-to-deposit ratio, along with control variables like bank size and leverage, on the dependent variable, financial performance (ROA). The study utilizes qualitative data, gathering information through secondary data collection methods. The information is obtained from the Indonesia Stock Exchange site (www.idx.co.id) and each company's individual websites. The study's sample comprises 205 financial statement periods, including 41 banking firms over 5 years (2019-2023). The analytical approach in this research employs panel data regression and utilizes Eviews 0.9 software for the analysis.

The following are the steps for testing the regression model in this study:

Chow Test

The Chow Test results can yield two possible results: a *common effect* or a *fixed effect*. This study can use the Chow test to determine which model is more effective and acceptable. The Chow test is based on two hypotheses: the null hypothesis that there is no individual heterogeneity and the alternative hypothesis that there is cross-sectional heterogeneity.

The formulation of the Chow test is as follows:

H_0 : *Common Effect Model*

H_a : *Fixed Effect Model*

Decision:

If the *cross-section* probability figure of Chi-square ≥ 0.05 (alpha 5%), then H_0 is accepted.

If the *cross-section* probability number of Chi-square < 0.05 (alpha 5%), then H_0 is rejected.

Based on the *Chow Test* results, *Prob. Cross-section Chi-square* of $0.0000 < 0.05$ so that H_0 is rejected (H_a is accepted), and it can be concluded that the right model to use is the *Fixed Effect Model*.

Hausman Test

There are two possible Hausman Test results: *random* and *fixed effects*. The Hausman test can be used in this study to determine which model is more accurate and better. It also aims to determine each model's characteristics and whether it has heterogeneity.

The formulation of the Hausmann test is as follows:

H_0 : *Random Effect Model*

H_a : *Fixed Effect Model*

Decision:

If the random *cross-section* probability number is ≥ 0.05 (alpha 5%), then H_0 is accepted. This means that the correct model is the *Random Effect Model*.

If the Random *cross-section* probability number < 0.05 (alpha 5%), then H_0 is rejected. This means that the right model is the *Fixed Effect Model*.

Based on the results of the *Hausman Test*, a *Prob. A cross-sectional random* of 0.2062 > 0.05 is obtained, so H_0 is accepted (H_a is rejected), and it can be concluded that the right model to use is the *Random Effect Model*.

Lagrange Multiplier Test

The Lagrange Multiplier test aims to determine the more appropriate model between the common and random effects. The hypothesis in the Lagrange Multiplier Test can be stated as follows:

H_0 : The correct model is *a common effect*

H_a : The correct model is *a random effect*

Decision:

If the *cross-section* probability of Breusch-Pagan $< \alpha$ 0.05, H_0 is rejected. H_a is accepted, and the random effect is the most appropriate model.

If the *cross-section* probability of breach-pagan $> \alpha$ 0.05, H_0 is accepted. H_a is rejected, and the most appropriate model is the common effect.

Based on the *Lagrange Multiplier Test*, the results show that the *cross-section probability* value of breach-pagan is 0.0031 < 0.05. That is, the decision obtained is H_0 is rejected (H_a is accepted), so the model used is a *random effect*.

Data Analysis Methods

Test Coefficient of Determination (Adj. R^2)

This test aims to determine the extent to which the independent variable is able to explain the dependent variable in a model. The test results of the coefficient of determination are indicated by the *Adjusted R^2* value of 0.156892, which means that the variation or behavior of the independent variables, namely *liquidity risk*, *interest rate risk*, *credit risk*, *Loan-to-deposit ratio*, *bank size* and *leverage*, can explain the variation of the dependent variable (ROA) by 15.6892% while the remaining 84.3108% is the variation of other independent variables that affect ROA but are not included in the model.

Simultaneous Test (F Test)

This test is used to test whether the independent variable has a significant influence on the dependent variable simultaneously. If the sig of the F Test < 0.05 means that simultaneously, the independent variable influences the dependent variable, the regression model is feasible. If the sig of the F Test > 0.05 means that the independent variables do not influence the dependent variable simultaneously, the regression model is unsuitable. The F statistical test measures the sample regression function in estimating the actual value (*Goodness of Fit*). The F test in this study uses a significance level of 5%.

Based on the results of the F test processing, the p-value of F is 0.000000 < 0.05, which means that H_0 is rejected (H_a fails to be rejected / H_a is accepted), so it can be concluded that it is proven that there is at least one independent variable that has a significant effect on the dependent variable.

RESULTS AND DISCUSSION

Descriptive Statistical Analysis

The results of descriptive statistical analysis of the *Return on Asset* (ROA) variable obtained a maximum value of 0.041398, which was achieved by PT Allo Bank Indonesia Tbk (BBHI) in 2021, and a minimum value of -0.180577, which was obtained by PT Bank Raya Indonesia Tbk (AGRO) in 2021. The average ROA value of 0.004977 is smaller than the standard deviation of 0.022056, indicating that the data distribution is quite varied. This indicates a large deviation from the average value, mainly due to several negative extreme values.

The results of descriptive statistical analysis of the *liquidity risk* (LQR) variable obtained a maximum value of 0.054752, which was achieved by PT Krom Bank Indonesia Tbk (BBSI) in 2021, and a minimum value of 0.000216 by PT Bank Mega Tbk (MEGA) in 2023. The average value of LQR is 0.013276, greater than the standard deviation of 0.009686. This indicates that the data is homogeneous with a relatively small spread of values, although some extreme outliers exist.

The results of descriptive statistical analysis of the *interest rate risk* variable (INT), the maximum value of 0.225265 was obtained by PT Bank Amar Indonesia Tbk (AMAR) in 2023, and the minimum value of 0.020154 was obtained by PT Bank KB Bukopin Tbk (BBKP) in 2022. The average value of INT is 0.068788, much greater than the standard deviation of 0.025565. This indicates that the data is relatively homogeneous, even though there is jarrah between banks in managing interest income. The spread is not too deviant since the mean value is still significantly above the standard deviation.

The results of descriptive statistical analysis of the *Credit risk* (CR) variable show that PT Bank Pembangunan Daerah Banten Tbk (BEKS) obtained the maximum value of 0.284287 in 2020 and the minimum value of 0.0000236 by PT Bank Neo Commerce Tbk (BBYB) in 2022. The average CR of 0.033557 is greater than the standard deviation of 0.030216, indicating that the data is relatively homogeneous, although some extreme values indicate the existence of banks with very high credit risk.

The results of descriptive statistical analysis of the *loan-to-deposit ratio* (LDR) variable show that PT Krom Bank Indonesia Tbk (BBSI) obtained the maximum value of 4.836969 in 2023 and the minimum value of 0.016735 by PT Bank Mega Tbk (MEGA) in 2023. The average LDR value of 0.881258 is greater than the standard deviation of 0.536557, indicating that the LDR data is relatively homogeneous, with a fairly consistent distribution of values among banks.

The results of descriptive statistical analysis of the *bank size* variable (SIZE) have a maximum value of 35.31545 owned by PT Bank Mandiri Tbk (BMRI) in 2023 and a minimum value of 27.58365 by PT Krom Bank Indonesia Tbk (BBSI) in 2019. The average SIZE value of 31.46036 is greater than the standard deviation of 1.760862, indicating that the size of the banks in the sample is relatively homogeneous. However, there is a gap between large banks and small banks.

The results of descriptive statistical analysis of the *Leverage* variable (LEV) show a maximum value of 8.563277 achieved by PT Bank Pembangunan Daerah Jawa Timur Tbk (BJTM) in 2023 and a minimum value of 0.074918 obtained by PT Krom Bank Indonesia Tbk (BBSI) in 2022. The average value of LEV of 0.821611 is greater than the standard deviation of 0.560854, indicating that the leverage data is relatively homogeneous with a spread of values

that does not deviate too much. Although there are banks with very high leverage, the leverage value between banks generally shows good consistency.

Table 3. Descriptive Statistics

	ROA	LQR	INT	CR	LDR	SIZE	LEV
Mean	0.004977	0.013276	0.068788	0.033557	0.881258	31.46036	0.821611
Median	0.006625	0.010854	0.063733	0.026559	0.810594	30.94107	0.823319
Maximum	0.041398	0.054752	0.225265	0.284287	4.836969	35.31545	8.563277
Minimum	-0.180577	0.000216	0.020154	2.36E-05	0.016735	27.58365	0.074918
Std. Dev.	0.022056	0.009686	0.025565	0.030216	0.536557	1.760862	0.560854

Individual Test (T-Test)

This test is conducted to determine whether each independent variable significantly affects the dependent variable. The criteria for taking is if the sign of the T-test < 0.05 , then H_0 is rejected, meaning that the independent variable influences the dependent variable. If the sign of the T-test > 0.05 , then H_0 is accepted, meaning that the independent variable does not influence the dependent variable.

The effect of liquidity risk on Financial Performance

Based on the results of the analysis of the effect of the liquidity risk variable on Financial Performance (ROA), the estimated coefficient value is 0.371726 with a probability of $0.0314 > 0.05$, which means that H_0 is accepted (H_a is rejected), so it can be concluded that liquidity risk is proven to have a significant positive effect on ROA. This is in line with research conducted by Yua (2020), which found that liquidity risk positively and significantly affects financial performance ROA. This shows that banks can maintain sufficient liquid funds without sacrificing profitability. With efficient liquidity management, banks can fulfill short-term obligations while remaining focused on lending by generating income to increase financial performance. The results of this study are not in line with those put forward by Akinselure et al. (2025), who said liquidity risk has a negative and significant effect on financial performance (ROA). Liquidity risk has a negative influence due to asset-liability imbalances, high NPLs, failure to meet operational obligations and decreased customer confidence. Preventing this can require optimizing LDR, strengthening liquid reserves, and close supervision of credit quality.

The effect of interest rate risk on Financial Performance

Based on the results of the analysis of the effect of interest rate risk variables on financial Performance (ROA) has an estimated coefficient value of 0.055293 with a probability of $0.3728 > 0.05$, which means that H_0 is accepted (H_a is rejected), so it can be concluded that interest rate risk is proven not to affect ROA. This is in line with research conducted by Rafiuddin (2016), which found that interest rate risk does not affect financial performance ROA. This may be due to sound risk management by banks or other external factors that are more dominant so that fluctuations in interest rates do not majorly impact bank profitability in the study period. The results of this study are not in line with those proposed by Akinselure et al. (2025), which state that interest rate risk has a positive and significant effect on financial performance (ROA). This means that bank profits also increase if interest income increases and interest expense does not increase drastically. This shows that the bank's strategy for managing

interest income and expenses is crucial. The better the interest management, the greater the net profit that can be generated from each Asset the bank owns.

The effect of credit risk on financial Performance

Based on the Performance of the analysis of the effect of credit risk variables on financial Performance (ROA), the estimated coefficient value is -0.202981 with a probability of $0.0001 < 0.05$, which means that H_0 is rejected (H_a is accepted), so it can be concluded that credit risk is proven to have a negative and significant effect on ROA. This aligns with research conducted by Neupane and Sapkota (2025), which found that credit risk has a negative and significant effect on financial performance. Consequently, increases, and banks should be able to allocate more funds to loan loss reserves, which reduces net income. This study shows that any increase in NPLs can significantly reduce the bank's ROA, indicating a decrease in financial Performance. The result of the study are not in line with those put forward by Akinselure et al. (2025), who said credit risk has a positive and significant effect on financial performance (ROA). Credit Performance is a situation where effective credit risk management can produce positive results by increasing interest income, customer confidence, and responsiveness to economic policies, which are important factors in creating a positive influence of credit risk on financial Performance.

The effect of Loan-to-deposit ratio on Financial Performance

Based on the results of the analysis of the effect of the Loan to deposit ratio variable on Financial Performance (ROA), it has an estimated coefficient value of 0.006251 with a probability of $0.0266 < 0.05$, which means that H_0 is rejected (H_a is accepted), so it can be concluded that LDR is proven to have a positive and significant effect on ROA. This study's results align with those put forward by Sam et al. (2025), which says that the Loan-to-deposit ratio positively affects financial performance (ROA). This means that the greater the funds channeled in the form of loans, the greater the potential profit the bank can get from its assets. This shows that credit becomes the bank's main productive Asset, where the higher LDR means that the bank uses funds efficiently to generate interest income. This will increase profits and, of course, ROA.

The effect of bank size on Financial Performance

Based on the results of the analysis of the effect of bank size variables on financial Performance (ROA), it has an estimated coefficient value of 0.002398 with a probability of $0.0250 < 0.05$, which means that H_0 is rejected (H_a is accepted), so it can be concluded that bank size is proven to have a significant positive effect on ROA. This aligns with research conducted by Adewale et al. (2023) that shows that bank size has a positive and significant effect on ROA. This means that larger banks benefit from economies of scale, increased market power, and greater diversification, which leads to increased profitability. The results of this study are not in line with those conducted by Akinselure et al. (2025), who said bank size has a negative and significant effect on financial performance (ROA). Large banks often face challenges in managing their assets efficiently, such as complexity, leading to slow or less-than-optimal decision-making, thereby increasing the risk of bad debts or unprofitable investments. As a result, ROA decreases due to increased operating costs and losses from non-performing assets.

The effect of leverage on financial Performance

Based on the performance of the analysis of the effect of the leverage variable on Financial Performance (ROA), it has an estimated coefficient value of -0.001229 with a probability of 0.6040 > 0.05, which means that H_0 is accepted (H_a is rejected), so it can be concluded that leverage is proven not to affect ROA. This aligns with research conducted by Zuliana Zulkarnaen (2018), which found that leverage does not affect ROA financial performance. This can be caused by effective debt management and other factors, such as operational efficiency, that are more influential in determining the company's financial Performance. The result of the performance study are not in line with those put forward by Akinselure et al. (2025), which says that leverage positively affects financial performance (ROA). This means that the greater the level of leverage owned by the bank, the greater the possibility of improving financial Performance. This shows that using borrowed funds effectively in the bank's operational or investment activities can increase profits as long as the debt management is carried out optimally.

Table 4. T Test (Partial Test)

Variable	Coefficient	Prob.	Results	Conclusion
LQR	0.3717	0.0314**	Positively affected	Significant positive on ROA
INT	0.0552	0.3728	Positively affected	Insignificant positive on ROA
CR	-0.2029	0.0001**	Negatively affected	Significant negative on ROA
LDR	0.0062	0.0266**	Positively affected	Significant positive on ROA
BSIZE	0.0023	0.0250**	Positively affected	Significant positive on ROA
LEV	-0.0012	0.6040	Negatively affected	Insignificant negative on ROA

Source: Data Processed (2025)

Research Regression Model

The panel data regression model used by previous research by Akinselure et al. (2025) can be written as follows:

$$ROA_{it} = -0.076877 + 0.371726LQR_{it} + 0.055293INT_{it} - 0.202981CRR_{it} + 0.006251LDR_{it} + 0.002398BkSZ_{it} - 0.001229LEV_{it}$$

Description:

β = Constant

β_{1-6} = Coefficient

ROA = Return On Asset

LQR = Liquidity risk

INT = *Interest rate risk*

CRR = *Credit risk*

LDR = *Loan to deposit ratio*

BkSZ = *Bank size*

LEV = *Leverage*

i = *Intercept*

t = *Period (Time)*

CONCLUSIONS

Based on the results of the tests carried out, the following conclusions are obtained:

1. Liquidity risk variables positively and significantly affect financial Performance.
2. The InterePerformancek variable has a positive and insignificant effect on financial Performance.
3. Credit risk variables negatively and significantly affect financial Performance.
4. The loPerformanceit ratio variable has a positive and significant effect on financial Performance.
5. Bank size variable positively and significantly affects financial Performance.
6. The lePerformanceable has a negative and insignificant effect on financial Performance.

IMPLICATIONS

Performance of the research findings: There are benefits that can be obtained from the power of financial managers and investors as a consideration when making decisions. Some of the impacts achieved include the following:

a. For Financial Managers

This research has made important contributions to financial managers in understanding the influence of liquidity risk, credit risk, loan-to-deposit ratio, and bank size on financial Performance. Financial performance tends to minimize liquidity risk because the results show that the lower the liquidity risk, the higher the bank's ability to maintain operational stability and profitability. Credit risk must also be taken seriously because it is proven to have a significant adverse effect on ROA, so managers need to tighten the process of granting credit and supervising debtors so as not to cause non-performing loans. In addition, the loan-to-deposit ratio, which has a significant positive effect, shows that optimal lending can improve financial Performance, so there Is a balance between funds raised and distributed. Bank size, which has a significant

positive effect, also shows that the larger the scale of bank assets, the greater the bank's opportunity to improve operational efficiency and profitability.

b. For Investors

This research can be a reference for investors when choosing a bank that is suitable for investment. Investors should choose banks that can manage funds and maintain financial stability, especially regarding liquidity risk and large bank size. Banks with low liquidity risk indicate that they can fulfill short-term obligations without tremendous financial pressure. In addition, investors need to be more cautious of banks with many non-performing loans, as this could worsen the bank's financial Performance in the future. The performance-to-deposit ratio is also worth noting, showing that the bank can utilize its available funds efficiently. Investors can make safer and more profitable investment decisions by considering these things.

LIMITATIONS AND SUGGESTIONS

The results of this study still have some limitations that can be used as input for related parties. Bank management should pay more attention to factors such as liquidity risk, interest rate risk, credit risk, loan-to-deposit ratio, bank size, and leverage because they improve a bank's financial efficiency. For future researchers, it is recommended to research different sectors or periods so that the results obtained are more diverse and can find other factors that affect financial Performance more broadPerformancetion; it is hoped that future researchers will add another variable, namely the capital adequacy ratio, as research conducted by (Sam et al., 2025). The study states that a high CAR will improve financial Performance.

REFERENCES

- Abdymomunov, A., Gerlach, J., & Sakurai, Y. (2023). *Interest Rate Risk in the U.S. Banking Sector* ☆.
- Abiad, Z., Abraham, R., El-Chaarani, H., & Binsaddig, R. O. (2025). The Impact of Board of Directors Characteristics on the Financial Performance of the Banking Sector in Gulf Cooperation Council (GCC) Countries: The Moderating Role of Bank Size. *Journal of Risk and Financial Management*, 18(1). <https://doi.org/10.3390/jrfm18010040>
- Adabenege, O., Simpa, Y., & Mohammed, U. (2015). The Correlation between Risk Management and Organizational Performance: An Empirical Investigation using Panel Data. *Research Journal of Finance and Accounting* www.iiste.org ISSN (Vol. 6, Issue 16). Online. www.iiste.org
- Adewale, A. A., Shittu, S. A., & Adewole, J. A. (2023). Effect of bank sizes and age on the financial performance of deposit performances in Nigeria. *Journal of Economics and International Relations*, 18, 32–40. <https://doi.org/10.26565/2310-9513-2023-18-04>
- Agung Prayogi. (2022). NON-PERFORMING LOAN, LOAN TO DEPOSIT RATIO, CAPITAL ADEQUACY RATIO DAN PROFITABILITAS BANK: PERAN MODERASI UKURAN BANK. *JURNAL ILMIAH AKUNTANSI*. <https://doi.org/10.69714/v7wsgr62>
- Ahmad, S., Saxena, C., Islam, S., & Karim, R. (2024). Impact of Insur-Tech on the Premium Performance of Insurance Business. *SN Computer Science*, 5(1). <https://doi.org/10.1007/s42979-023-02462-0>
- Akber, S. M., & Dey, A. (2020). Evaluation of the Financial Performance between Traditional Private Commercial Banks and Islamic Banks in Bangladesh. *International Journal of Islamic Banking and Finance Research*, 4(2), 1–10. <https://doi.org/10.46281/ijibfr.v4i2.640>
- Akinola, A. O. (2019). IMPACT OF QUALITATIVE MONETARY POLICY ON PERFORMANCE OF DEPOSIT MONEY BANKS IN NIGERIA. In *Article in International Journal of Development Research*. <https://www.researchgate.net/publication/343084970>
- Akinselure, O. P., Ayoola, T. J., Aregbesola, O. D., & Adenikinju, O. (2025a). Effect of Prominent Asset Liability Management Risk Components on the Financial Performance of Nigerian Commercial Banks. *International Journal of Economics and Financial Issues*, 15(1), 280–287. <https://doi.org/10.32479/ijefi.17092>
- Akpotu, K. (2024). Liquidity Risk Management and Financial Performance of Microfinance Banks in Nigeria. *IIARD International Journal of Banking and Finance Research E*. <https://doi.org/10.56201/ijbfr.v10.no10.2024.pg129.148>
- Almasri, B. K., Sunoco, D., & Al-said, M. (2024). The mediating role of earnings management is upon nexus among bank financial leverage and economic and financial stability. *Asian Journal of Accounting Research*. <https://doi.org/10.1108/AJAR-11-2023-0379>

- Alsharif, M. (2024). The drivers of liquidity risk in the GCC dual banking sector: the impact of the bank's business model. *International Journal of Islamic and Middle Eastern Finance and Management*. <https://doi.org/10.1108/IMEFM-01-2024-0020>
- Amarasinghe, A. A. M. D. (2022). *INFLUENCE OF LIQUIDITY RISK ON BANK PROFITABILITY IN SRI LANKAN COMMERCIAL BANKS*. <https://www.researchgate.net/publication/369010654>
- Ambetsa Amira, E., Ondiek Alala, B., & Musiega, M. (2023). Influence of Liquidity Risk Management on Financial Performance of Commercial Banks in Kenya PhD scholar, 2 Professor and Senior Lecturer; Department of Accounting and Finance, 3 Senior lecturer and chairman of the Department of Finance. *African Journal of Empirical Research*, 4, 7–13. <https://orcid.org/0000-0001-9672-8984>
- Anwulika Ogechukwu Scott, Prisca Amajuoyi, & Kudirat Bukola Adeusi. (2024). Effective credit risk mitigation strategies: Solutions for reducing exposure in financial institutions. *Magna Scientia Advanced Research and Reviews*, 12(1), 198–211. <https://doi.org/10.30574/msarr.2024.11.1.0084>
- Arief, M., Lidyah, R., Pengaruh, M. I., Bunga, S., & Iqbal, M. (2021). PENGARUH SUKU BUNGA TERHADAP BAGI HASIL DEPOSITO MUDHARABAH DENGAN MEDIASI RETURN ON ASSET (ROA). In *Research Journal on Islamic Finance* (Vol. 07). <http://jurnal.radenfatah.ac.id/index.php/i-finance>
- Aymen, M., Moussa, B., & Feidi, A. El. (2023). The Impact of Leverage on Financial Performance of Tunisian Quoted Firms. In *International Journal of Economics and Business Administration: Vol. XI* (Issue 4).
- Bello, M. M., Isah, N., & Salihi, A. A. (2024). Impact of Financial Risk on Profitability: Evidence from Nigerian Deposit Money Banks. *FUDMA Journal of Accounting and Finance Research [FUJAFR]*, 2(4), 49–59. <https://doi.org/10.33003/fujafr-2024.v2i4.139.49-59>
- Beni, S., Putra, W., & Bariyah, N. (2023). The Effect of Credit Circulation, Loan Deposit Ratio (LDR), and Interest Rate on Return On Assets (ROA) Due to Non-Performing Loan (NPL) on Credit Unions in Indonesia. In *International Journal of Multi-Discipline Science* (Vol. 6, Issue 1).
- Berkelanjutan, J. A., & Rahma, A. (2020). *ANALISIS PENGARUH PROFITABILITAS, LEVERAGE, DAN LIKUIDITAS TERHADAP FINANCIAL DISTRESS*. 3(3). <http://openjournal.unpam.ac.id/index.php/JABI>
- Billikusuma, C. A., Dimas, S., & Saputro, R. (2024). *Sustainability in Action: Transformative Strategies in Management and Accounting*.
- Boateng, A., Lew, B., & Liu, Y. (2025). Corporate Social Responsibility Expenditures and Bank Performance: Role of Size Among Listed Banks in Ghana. *Journal of Risk and Financial Management*, 18(3). <https://doi.org/10.3390/jrfm18030127>

- Cai, R., & Zhang, M. (2017). How Does Credit Risk Influence Liquidity Risk? Evidence from Ukrainian Banks. *Visnyk of the National Bank of Ukraine*, 241, 21–32. <https://doi.org/10.26531/vnbu2017.241.021>
- Chaibi, H. (2016). Determinants of Problem Loans: Non-performing Loans vs. Loan Quality Deterioration. *International Business Research*, 9(10), 86. <https://doi.org/10.5539/ibr.v9n10p86>
- Dahlan, R. M., Kasali, R., Wijanto, S. H., & Haryanto, J. O. (2023). The role of resource investment as a key element for resolving the bank size paradox. *Journal of Asia Business Studies*, 17(5), 897–910. <https://doi.org/10.1108/JABS-12-2021-0501>
- de Boyrie, M. E., & Pavlova, I. (2025). Bank acquisitions of AI and FinTech: Impact on Performance. *ManageriaPerformance*<https://doi.org/10.1108/MF-04-2024-0314>
- Deden Kurniawan, & Samhaji. (2020). *PENGARUH LEVERAGE, LIKUIDITAS, DAN UKURAN PERUSAHAAN TERHADAP KINERJA KEUANGAN EMITEN PERBANKAN YANG TERDAFTAR DI BURSA EFEK INDONESIA*.
- Eyigege, A. I. (2018). Influence of Firm Size on Financial Performance of Deposit Money Banks Quoted on the Nigeria Stock Exchange. In *International Journal of Economics and Financial Research ISSN* (Vol. 4, Issue 9).
- Fathmaningrum, E. S., & Renaldo, M. (2024). Faktor-Faktor yang Memengaruhi Kinerja Keuangan Perusahaan Manufaktur: Studi Empiris di Indonesia dan Singapura. *Reviu Akuntansi Dan Bisnis Indonesia*, 8(2), 256–271. <https://doi.org/10.18196/rabin.v8i2.22049>
- Hanantijo, D., & Respati, H. (2018). CAMEL Method: Bank Health Levels for Financial Performance of Banking in Indonesia Stock Exchange Period 2006 to 2015. In *Research Journal of Finance and Accounting www.iiste.org ISSN* (Vol. 9, Issue 7). Online. www.iiste.org
- Huong, T. T. X., Nga, T. T. T., & Oanh, T. T. K. (2021). Liquidity risk and bank performance in Southeast Asian countries: a dynamic panel approach. *Quantitative Finance and Economics*, 5(1), 111–133. <https://doi.org/10.3934/QFE.2021006>
- Ika Nurfitriani. (2021). nur nur LDR. *The Influence of Capital Adequacy Ratio (CAR), Non-Performing Loan (NPL), and Loan to Deposit Ratio (LDR) to Return On Asset (ROA) At the Bank Muamalat Indonesia*.
- Iqbal, M., & Javed, F. (2017). The Moderating Role of Corporate Governance on the Relationship between Capital Structure and Financial Performance. *International Journal of Research in Business and Social Science (2147- 4478)*, 6(1), 89–105. <https://doi.org/10.20525/ijrbs.v6i1.624>
- Ivansyah, D. F., Widagdo, B., Sa'diyah, C., & Fitriasari, F. (2025). Impact of interest rates & capital adequacy on stock returns: profitability's role. *Journal of Multiperspectives on Accounting Literature*, 3(1), 22–39. <https://doi.org/10.22219/jameela.v3i1.37921>

- Jacob Akomeah, Raymond Agumeh, & Siaw Frimpong. (2020). Credit Risk Management and Financial Performance of Listed Banks in Ghana. *Research Journal of Finance and Accounting*. <https://doi.org/10.7176/rjfa/11-6-05>
- Jaelani, A., Purwanti, W., & Indra Sari, H. (2024). THE INFLUENCE OF CAPITAL, CREDIT RISK, AND LIQUIDITY RISK ON FINANCIAL PERFORMANCE (Case Study on Commercial Banks in the Core Capital Group (KBMI) 3 Listed on the Indonesia Stock Exchange for the Period 2019-2023). *International Journal of Management Studies and Social Science Research*, 06(04), 222–232. <https://doi.org/10.56293/ijmsssr.2024.5122>
- Jamal, N. K., Aziz, I. ul Haq, & Shinwari, M. S. K. (2023). Effect of Liquidity and Credit Risk on Bank Financial Performance: A Case of Afghanistan's Commercial Banks. *American Journal of Finance and Business Management*, 2(1), 27–38. <https://doi.org/10.58425/ajfbm.v2i1.227>
- Karim, R., Hasan, Md. M., Waaje, A., Yesmin, Mst. S. H., & Rashid, Md. M. (2024). Financial Performance of Bangladeshi Listed Commercial Banks. *International Journal of Finance & Banking Studies* (2147–4486), 12(4), 46–56. <https://doi.org/10.20525/ijfbs.v12i4.3170>
- Kyere, M., & Ausloos, M. (2021). Corporate governance and firms financial performance in the United Kingdom. *International Journal of Finance and Economics*, 26(2), 1871–1885. <https://doi.org/10.1002/ijfe.1883>
- Laela Ardhana, R., Kuriniati, S., Ekonomi, F., & Islam Batik Surakarta, U. (2024). *ANALYSIS OF FACTORS AFFECTING FINANCIAL PERFORMANCE ANALISIS FAKTOR-FAKTOR YANG MEMPENGARUHI KINERJA KEUANGAN*.
- Landitha, E., Antika, K., Rahmi, P. P., Sudaryo, Y., Sumawidjaja, R. N., & Febriyanti, D. (2024). Operating Expenses, Operating Income (BOPO), Loan to Deposit Ratio (LDR), on Return on Assets (ROA) at PT Bank Mayapada Internasional Tbk for the Period of. *Syntax Idea*, 6(06), 7.
- Latif, J., Masood, A., & Rahman, A. (2022). Re-examining the Financial Performance Measures of Commercial Banks in Pakistan Muhammad Shehbaz Yaqub (Corresponding Author). In *Pakistan Journal of Social Sciences (PJSS)* (Vol. 42, Issue 4).
- Madhuwanthi, R. M. R., & Morawakage, P. S. (2019). Impact of liquidity risk on the performances of Sri Lankan commercial banks. *Sri Lanka Journal of Social Sciences*, 42(1), 53–64. <https://doi.org/10.4038/sljss.v42i1.7572>
- Mayowa G Ajao, & Ehi P Oseyomon. (2019). Credit risk management and deposit performance in Nigeria. In *African Review of Economics and Finance* (Vol. 11, Issue 1).
- Mega Berliana, A., Simanjorang, G. A., Khasanah, V. N., Lestari, H. S., & Margaretha, F. (2025). KEY FACTORS IMPACTING PROFITABILITY IN INDONESIAN COMMERCIAL BANKS: FINANCIAL RATIO, MACROECONOMIC, AND OWNERSHIP STRUCTURE. In *Indonesian Interdisciplinary Journal of Sharia Economics (IIJSE)* (Vol. 8, Issue 1).

- Moh. Zaki Kurniawan. (2017). ANALISIS RASIO LIKUIDITAS, RASIO PROFITABILITAS, DAN ECONOMIC VALUE ADDED (EVA) PADA KINERJA KEUANGAN PT. SIANTAR TOP Tbk (Periode 2011-2014). *Jurnal Ilmiah Ilmu-Ilmu Ekonomi*.
- Mulbah, K. T., Kurbonov, S., & Nasriddinov, B. (2024). Examining Performance Determinants of Commercial Banks: Evidence from the Tanzanian Banking Sector. *European Scientific Journal, ESJ*, 20(13), 19. <https://doi.org/10.19044/esj.2024.v20n13p19>
- Musiega, M., Olweny, T., Mukanzi, C., Musiega Student Jomo, M., & Mutua, M. S. (2017). INFLUENCE OF INTEREST RATE RISK ON PERFORMANCE OF COMMERCIAL BANKS IN KENYA. In *Economics and Finance Review* (Vol. 5, Issue 02). <http://www.businessjournalz.org/efr>
- Nazar Suhada, M., & Ramdhan Ryanto, F. (2025). THE INFLUENCE OF RETURN ON ASSETS, CURRENT RATIO, DEBT TO EQUITY RATIO, AND TOTAL ASSET TURNOVER ON TAX AVOIDANCE. In *Indonesian Interdisciplinary Journal of Sharia Economics (IIJSE)* (Vol. 8, Issue 1). www.idx.co.id
- Nelly, K. M., Ambrose, J., & George, K. (2019). Bank size and financial risk exposure on the financial performance of commercial Kenya. *International Journal of Financial Research*, 10(6), 250–264. <https://doi.org/10.5430/ijfr.v10n6p250>
- Neupane, M. P., & Sapkota, C. N. (2025). An Impact of Liquidity on the Profitability of Commercial Banks in Nepal (A Case Study of Agriculture Development Bank Limited and Nepal Bank Limited). *Madhyabindu Journal*, 10(1), 15–38. <https://doi.org/10.3126/madhyabindu.v10i1.75614>
- Obeid, R. (2023). Factors Affecting Return on Assets (ROA) in the Banking Sector of Selected Arab Countries: Is There a Role for Financial Inclusion and Technology Indicators? *International Journal of Economics and Finance*, 15(9), 1. <https://doi.org/10.5539/ijef.v15n9p1>
- Obeidat, M., Khataibeh, M., Omet, G., & Tarawneh, A. (2021). The Performance of Banks iPerformanceing Country: Has COVID-19 made any difference? *Pressacademia*, 8(2), 102–108. <https://doi.org/10.17261/pressacademia.2021.1395>
- Omri, N. A. E., Neffati, N., & Guenichi, H. (2024). Modeling the relationship between leverage and firm Performance: a threshold analysis using the PSTR model. *Managerial Finance*. <https://doi.org/10.1108/MF-07-2024-0500>
- Onyango, P., & Kalunda, E. (2023). *Interest Rate Risk and Financial Performance of Investment Banks in Kenya* (Vol. 13).
- Parashtiwi, N. (2023). Leverage Factors that Impact on Company's Financial Performance. *International Journal of Social Service and Research*, 3(3), 768–774. <https://doi.org/10.46799/ijssr.v3i3.277>

- Parvin, S., Minhajul, A. N. M., Chowdhury, H., Siddiqui, A., & Ferdous, J. (2019). *Effect of Liquidity and Bank Size on the Profitability of Commercial Banks in Bangladesh*. <https://doi.org/10.18034/abr.v9i1.219>
- Priharta, A., & Gani, N. A. (2023). Determinants of bank profitability: Empirical evidence from Republic of Indonesia state-owned banks. *Contaduria y Administracion*, 69(3), 49–65. <https://doi.org/10.22201/fca.24488410e.2024.4999>
- Rafiuddin. (2016). *PENGARUH INFLASI DAN SUKU BUNGA TERHADAP RETURN ON ASSET BANK YANG LISTING PADA BEI* Rafiuddin (Dosen Fakultas Ekonomi Unidayan Baubau). www.idx.go.id
- Saarah, S., Hakiimah, N., Karhenia, S., & Leon, F. M. (2023). *International Journal of Management and Economics Invention The Impact of Financial Risk on Financial Performance: Evidence from Indonesian Banks*. <https://doi.org/10.47191/ijmei/v9i6.02>
- Saleh, I., & Abu Afifa, M. (2020). The effect of credit risk, liquidity risk and bank capital on bank profitability: Evidence from an emerging market. *Cogent Economics and Finance*, 8(1). <https://doi.org/10.1080/23322039.2020.1814509>
- Sam, T. H., Machmuddah, Z., Safitri, A., Rohman, A., Feng, L., & Hong, Z. Y. (2025). Factors that Influence the Financial Performance of Conventional Banks. *Journal of Ecohumanism*, 4(1), 1669–1675. <https://doi.org/10.62754/joe.v4i1.5979>
- Sely Megawati Wahyudi, & Nona Lice Pota Buga. (2021). Pengaruh Suku Bunga Kredit dan Risiko Kredit terhadap Return On Asset dengan Pendapatan Bunga sebagai Variabel Intervening. *Esensi: Jurnal Bisnis Dan Manajemen*, 10(2), 135–146. <https://doi.org/10.15408/ess.v10i2.18477>
- Shawtari, F. A., Abdelnabi Salem, M., & Bakhit, I. (2018). Decomposition of efficiency using DEA window analysis: A comparative evidence from Islamic and conventional banks. *Benchmarking*, 25(6), 1681–1705. <https://doi.org/10.1108/BIJ-12-2016-0183>
- Sifrain, R. (2025a). Factors Influencing Liquidity Risk of Banks in Haiti. *Journal of Financial Risk Management*, 14(01), 1–17. <https://doi.org/10.4236/jfrm.2025.141001>
- Silambarasan, D., & Jayanthan, D. (2024). Analysis of Leverages and Profitability of Top 10 IT Companies in India. *Shanlax International Journal of Management*, 11(4), 42–46. <https://doi.org/10.34293/management.v11i4.7373>
- Sophie Malalu, M. (2024). FINANCIAL RISKS AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS LISTED IN NAIROBI SECURITIES EXCHANGE, KENYA. *International Academic Journal of Economics and Finance*, 4(3), 369–390. https://iajournals.org/articles/iajef_v4_i3_369_390.pdf
- Tashkandi, A. A. (2022). Shariah supervision and corporate governance effects on Islamic banks' Performance: evidence PerformanceC countries. *Journal of Business and Socio-Economic Development*. <https://doi.org/10.1108/jbsed-02-2022-0024>

- Teruna Awaloedin, D., & Apriyati, N. (2023). *The Effect of LDR Ratio, CAR Ratio and BOPO Ratio on ROA in Conventional Banking on the Indonesia Stock Exchange Period 2015-2020*. 8(2), 750–761. <https://www.idx.co.id/id>
- Tran, V. T., Lin, C. T., & Nguyen, H. (2016). Liquidity creation, regulatory capital, and bank profitability. *International Review of Financial Analysis*, 48, 98–109. <https://doi.org/10.1016/j.irfa.2016.09.010>
- Ukpong, E. G., & Essien, I. (2022). Credit Risk and Financial Performance of Quoted Commercial Banks in Nigeria. *AKSU Journal of Administration and Corporate Governance*, 2(4), 94–111. <https://doi.org/10.61090/aksujacog.2022.041>
- Wijayanto, Y. H., Muawanah, U., & Aprilia, M. E. (2025). Enrichment: Journal of Multidisciplinary Research and Development Credit Distribution as a Mediation of Loan to Deposit Ratio, Operational Costs on Operational Income and Non-Performance Loan to Return on Asset. In *LDR on ROA through Lending* (Vol. 2, Issue 11).
- Winarto, D., & Dewi, S. P. (2019). *Faktor-Faktor Yang Mempengaruhi Financial Performance Pada Perusahaan Manufaktur Di BEI*.
- Yua, H. (2020). *EFFECT OF LIQUIDITY MANAGEMENT ON THE FINANCIAL PERFORMANCE OF BANKS IN NIGERIA*. <https://www.researchgate.net/publication/342814487>
- Yüksel, S., Zengin, S., Yuksel, S., & Banking, in. (2017). Influencing Factors of Net Interest Margin in Turkish Banking Sector International Journal of Economics and Financial Issues Influencing Factors of Net Interest Margin in Turkish Banking Sector. *International Journal of Economics and Financial Issues*, 7(1), 178–191. <http://www.econjournals.com>
- Yunita, I., Hapsari, N., Nurdiansyah, D. H., Ekonomi, F., Universitas, B., & Karawang, S. (2022). The Effect Of Capital Adequacy Ratio (CAR) And Loan To Deposit Ratio (LDR) On Return On Assets (ROA) Pengaruh Capital Adequacy Ratio (CAR) Dan Loan To Deposit Ratio (LDR) Terhadap Return On Assets (ROA). In *Management Studies and Entrepreneurship Journal* (Vol. 3, Issue 1). <http://journal.yrpiiku.com/index.php/msej>
- Zuliana Zulkarnaen. (2018). PENGARUH DEBT TO ASSETS RATIO TERHADAP RETURN ON ASSET PADA PERUSAHAAN ASURANSI YANG TERDAFTAR DI BEI TAHUN 2010 – 2015. *Jurnal Warta, Universitas Dharmawangsa*.
- Abu-Alrop, J. H. A., & Kokh, I. A. (2020). Impact of Credit Risk on the Performance of Russian Commercial Banks. *Journal of Applied Economic Research*, 19(1), 5–18. <https://doi.org/10.15826/vestnik.2020.19.1.001>