THE IMPACT OF LIQUIDITY ON THE FINANCIAL PERFORMANCE OF BANKS LISTED ON THE INDONESIA STOCK EXCHANGE (IDX)

Erina Yanti[1]
Universitas Trisakti, Jakarta, Indonesia
122012401081@std.trisakti.ac.id

Pu Libing[2]
Universitas Trisakti, Jakarta, Indonesia
122012401071@std.trisakti.ac.id

Henny Setyo Lestari[3]
Universitas Trisakti, Jakarta, Indonesia
henny_setyo_lestari@trisakti.ac.id

Susy Muchtar[4]
Universitas Trisakti, Jakarta, Indonesia
susy_muchtar@trisakti.ac.id

Abstract

This research study analyze effect of credit risk, liquidity risk, price risk, operational risk, capital adequacy ratio, and loan to deposit ratio to financial performance of banking companies listed in IDX in period 2020–2024, where performance is measured by ROA and ROE. Using purposive sampling method, 26 banks that meet criteria is analyzed using panel data regression. The findings indicate that, while certain variables show limited individual effects, operational risk consistently emerges as a key determinant negatively influencing profitability, and liquidity-related indicators such as LDR play a role in shaping performance under specific conditions. Together, independent variables explain big part of changes in ROA and ROE, showing that bank performance is affected by combination of risk exposure and financial structure. These findings show importance of good risk management, especially in operational side, to keep bank profitability. However, conceptual reason for choosing these variables still can be more strengthened. This study will be better if have more clear theoretical framework that explain why different types of risk expected to affect profitability in different ways, especially in context of Indonesian banking during post-pandemic recovery period.

Keywords: Credit Risk, Liquidity, Price Risk, Operational Risk, CAR, LDR, ROA, ROE

INTRODUCTION

One essential pillar of a country's economic structure is the banking industry. Banks function as financial intermediaries by collecting public funds and redistributing them as credit, thereby supporting investment, consumption, and overall economic growth (Alim et al., 2021; Hacini et al., 2021). Because of this central role, instability in the banking sector can create serious consequences for the broader economy, including disruptions in financial markets, declining public confidence, and reduced credit availability (Montes et al., 2021). Thus, maintaining sound bank performance is not only important for individual institutions but also for macroeconomic stability.

The relevance of banking stability is evident in Indonesia's recent experience. In 2024, the OJK revoked the operating licenses of 20 banks, particularly BPR and BPRS. These failures were largely associated with weak governance, operational irregularities, non-compliance with regulatory requirements related to capital and financial soundness, and fraudulent practices such as fictitious lending and misuse of funds by owners or management. This condition illustrates how weak internal management, inadequate risk control, and poor financial capacity may threaten the sustainability of banking institutions.

Financial performance becomes a crucial indicator for assessing a bank's ability to operate efficiently and remain resilient. Financial performance generally reflects the extent to which a bank achieves its profitability objectives while maintaining sound financial conditions (Asutay & Ubaidillah, 2024; Mwania & Suva, 2022; Nurkhalifa et al., 2021). ROA indicates how effectively a bank utilizes its assets to generate earnings, whereas ROE measures the return produced from shareholders' invested capital (Keter et al., 2023; Simanullang et al., 2021). Strong profitability signals effective management, while declining profitability may indicate deeper structural weaknesses.

Among the factors affecting financial performance, liquidity is particularly significant because banks depend on their ability to meet withdrawal demands. Liquidity theory suggests that institutions with sufficient liquid resources are better positioned to meet obligations without selling assets at distressed prices or relying excessively on external borrowing (Foucault et al., 2023; Kinyua & Fredrick, 2022). Inadequate liquidity, by contrast, can trigger funding pressure, damage public confidence, and reduce profitability. Therefore, liquidity management directly influences both operational continuity and financial outcomes (Hindibu, 2025; Nguyen, 2024).

Banks have many risks such as credit risk, market risk, and operational risk, which can cause unexpected losses. Sufficient capital gives protection for banks to cover these losses and keep their solvency (Satoto et al., 2023). Conversely, insufficient capital limits a bank's capacity to expand lending, support growth, and sustain profits (Bandyopadhyay, 2022; Neupane, 2024). Hence, liquidity and capital adequacy are closely interconnected determinants of performance, since both determine a bank's ability to survive shocks while generating returns.

Furthermore, banking operations are continuously exposed to financial risks. Credit risk emerges when borrowers fail to repay obligations, liquidity risk arises when banks cannot meet funding demands without losses, and market risk occurs through adverse movements in asset prices or interest rates (James & Kepha, 2020). These risks can weaken profitability and, if unmanaged, contribute to institutional failure. Consequently, analyzing bank

performance requires attention not only to profitability indicators but also to the underlying financial conditions that shape them.

Previous study by Nazar & Mawarni (2023) show that profitability measured by ROE shows negative and not significant effect on stock prices in the 2016–2019 period. Therefore, companies are advised to improve ROE performance and manage LDR optimally in order to increase stock prices and strengthen investor confidence.

This study examines the effect of financial ratios on stock prices of banks listed on IDX, by using ROA, DER, PBV, and NPM as independent variables. Simultaneously, ROA, DER, PBV, and NPM significantly affect stock prices, although this study has limitation from available data and variables used (Muktiadji & Pamungkas, 2022).

Rasyid & Zakaria (2023) found that the company financial performance based on liquidity ratios fluctuated during 2019–2022 because of changes in current assets and current liabilities. Besides that, solvency ratios also declined, mainly caused by the increase of total assets.

Based on the existing literature, previous studies have generally examined banking financial performance by focusing only on individual risk factors such as credit risk, liquidity risk, or capital adequacy separately, so limited research has comprehensively analyzed the simultaneous effect of multiple banking risks together with internal financial ratios in the context of Indonesian listed banks during the post-pandemic period. This gap is important because banking performance is influenced by the interaction of various risks and financial conditions rather than by a single factor in isolation. Accordingly, this study aims to examine and evaluate the effect of each variable on banking financial performance and to give empirical evidence about key factors that strengthen profitability and resilience in Indonesian banking sector.

REVIEW OF LITERATURE

The financial performance of banks is highly determined by how the institution controls different kinds of risk and uses available resources in efficient way. In this case, profitability through ROA and ROE explains how well banks generate income from assets and shareholders' funds. A high ROA means the assets are used efficiently, while a high ROE means the owners' capital is managed effectively (Keter et al., 2023; Hutagalung, 2020).

Because lending activity is the main source of bank income, bad credit quality can directly lower profitability through higher default costs and reserve for losses. Credit risk theory explains that NPL ratio is an important indicator of asset quality, where higher NPL usually shows weaker performance and lower returns (Rashaduzzaman, 2024). Empirical studies consistently support this relationship, showing that credit risk negatively affects both ROA and ROE (Javid et al., 2020; Sochib et al., 2022). This suggests that effective borrower screening and monitoring systems are crucial to maintaining profitability.

The connection between credit risk and performance is also explained by Information Asymmetry Theory, which says that unequal information between banks and borrowers can create adverse selection and moral hazard problems (Haddou & Mkhinini, 2023). These conditions increase default probabilities and operating inefficiencies, thereby weakening financial performance. Consequently, stronger internal controls, credit analysis, and monitoring mechanisms are expected to reduce risk exposure and improve profitability.

Liquidity risk is another major factor affecting bank performance because banks must continuously meet withdrawal demands and short-term obligations while sustaining lending activities. Liquidity Preference Theory explains that investors and depositors generally prefer highly liquid assets, making liquidity management central to financial confidence and institutional stability (Lavoie & Reissl, 2019). Prior studies, however, provide mixed evidence: some find liquidity risk negatively affects profitability (Onsongo et al., 2020), while others report insignificant effects (Javid et al., 2020).

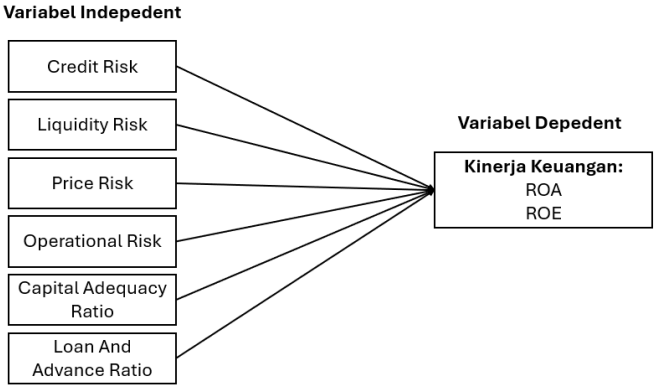
Price risk, often proxied by interest rate volatility, refers to potential losses resulting from fluctuations in market prices. EVT is relevant because it focuses on rare but severe market movements that may significantly disrupt bank earnings and capital positions (Ruusunen, 2025). While some studies report that interest rate risk negatively influences profitability (Sathyamoorthi et al., 2020; Tuna & Almahadin, 2021), others identify positive effects under certain market structures (Javid et al., 2020). This contrast implies that price risk can either harm or benefit banks depending on asset-liability composition and interest rate pass-through strategies.

Studies indicate that weak operational controls reduce efficiency and profitability, especially in medium-sized banks where cost structures are more sensitive (Kaplan et al., 2023; Hossain & Sarkar, 2025). Therefore, banks with stronger governance systems and more efficient operations are expected to achieve better ROA and ROE outcomes.

Beyond risk exposure, capital structure and lending intensity are also key internal determinants of profitability. CAR shows the ability of bank to cover unexpected losses and keep solvency. Higher CAR usually increases trust from investors and regulators while making resilience stronger, which can give positive contribution to profitability (Arhinful et al., 2025; Damayanti & Gunawan, 2022). Meanwhile, the Loan and Advance Ratio indicates the extent to which funds are allocated into productive lending activities. Although higher lending ratios may increase interest income and profitability, excessively high levels may weaken liquidity and increase funding pressure (Rachman & Pamungkas, 2024).

Overall, prior studies demonstrate that bank financial performance is shaped by the interaction of risk management, capital strength, and asset allocation decisions. However, empirical findings remain inconsistent across countries and time periods, particularly regarding liquidity and price risk. This shows that the effects of these variables depend on context and need more examination in specific banking environments.

Conceptual Outline Diagram:



Based on theoretical and empirical reviews, the researchers developed the following hypotheses:

H1: Credit *Risk* has a positive effect on financial performance

H2: Liquidity *Risk* has a negative effect on financial performance

H3: Price *Risk* has a positive effect on financial performance

H4: Operational *Risk* has a negative effect on financial performance

H5: Capital *Adequacy Ratio* has a positive effect on financial performance

H6: Loan *And Advance Ratio* Negatively Affects Financial Performance..

RESEARCH METHOD

This method is suitable for the research problem because it gives more robust estimation of relationship between risk factors and financial performance across banks and over time. The data were taken from Indonesia IDX website (www.idx.co.id) and official annual reports published by each selected bank.

These criteria are banks listed and actively traded on IDX during 2020–2024 period, availability of complete financial statements during observation period, and providing data for all variables needed in this study. From initial population of 47 observations, 9 were removed because incomplete data or not meeting criteria, so 38 eligible banks remained. With five-year observation period, the final balanced panel contains 190 observations. These procedures are important to confirm that the selected model is suitable and to ensure the estimated relationships are statistically reliable and free from major estimation bias.

The factors employed in this study are summarized here, and their measurement is based on those of earlier research by (Mwangi et al., 2022) and (Ghimire, 2024).

Name of Variable	Symbols	Measurement	Source
Variable Depedent			
Return On Assets	ROA	Net Income / Total Assets	Mwakiboko, M., & Mwikamba, T. M. (2025)
Return On Equity	ROE	Net Income / Total Equity	Ghimire et al., (2024)
Variable Independent			
Credit Risk	CRISK	Non-performing Loans / Total Loans	Mwakiboko, M., & Mwikamba, T. M. (2025)
Liquidity Risk	LQ	Liquid Asset / Total Assets	Mwakiboko, M., & Mwikamba, T. M. (2025)
Price Risk	RISK	Interest Rate Volaility	Mwakiboko, M., & Mwikamba, T. M. (2025)

Operational Risk	RISK	Cost / Income Ratio	Mwakiboko, M., & Mwikamba, T. M. (2025)
Capital Adequacy Ratio	CAR	Tier 1 capital + tier 2 capital / risks weighted assets	Ghimire et al., (2024)
Loan And Advance Ratio	LDR	Loan and advance / total deposit	Ghimire et al., (2024)

Panel Data Regression Analysis

According to the conceptual framework mentioned above, the following equation model is created while performing an analysis that influences financial performance as determined by ROA and ROE, which measure the overall variables independent of dependents:

Model 1:

$ROA = \alpha + \beta 1Crisk + \beta 2Lq + \beta 3Prisk + \beta 4Orisk + \beta 5CAR + \beta 6LDR + \varepsilon$

Model 2:

$ROE = \alpha + \beta 1Crisk + \beta 2Lq + \beta 3Prisk + \beta 4Orisk + \beta 5CAR + \beta 6LDR + \varepsilon$

Information:

$\beta 0$ = *constant*

ROA = Return on Assets

ROE = Return on Equity.

RESULTS AND DISCUSSION

Statistics Descriptive

ROE, ROA, CRISK, LQ, PRISK, ORISK, CAR, and LDR were among the variables that were examined. The following table displays the findings of 130 observations' descriptive statistical computations:

Variabel	N	Mean	Std. Dev	Min	Max
ROA	130	0,01096	0,00944	0,00016	0,04140
ROE	130	0,06461	0,05719	0,00151	0,20936
CRISK	130	0,02890	0,02433	0,00006	0,13684
LQ	130	0,14173	0,11866	0,02346	0,48195
RISK	130	0,09149	0,04331	0,01893	0,21750
RISK	130	0,74336	0,17710	0,27619	0,97927
CAR	130	0,25341	0,22264	0,10495	1,33640
LDR	130	0,83779	0,27365	0,11983	1,62257

Based on the table above, it is possible to conduct a descriptive statistical analysis of all data used as a research sample as many as 130 samples obtained from 26 Bank listed IDX for 2020-2024. The description results for each variable studied is as follows:

1. The ROA variable records an average of 0.01096 (1.09%) with a standard deviation of 0.00944. This suggests that the bank's asset profitability is relatively low and exhibits only modest variation.
2. The ROE variable has an average of 0.06461 or 6.46% with a standard deviation of 0.05719. This indicates that equity-based profitability is higher than that of ROA, but the variation between banks is wider.
3. The CRISK variable shows an average value of 0.02890 with a standard deviation of 0.02433. This indicates that in general credit risk is quite low, although there are some banks with relatively high levels of risk.
4. The LQ variable records an average of 0.14173 with a standard deviation of 0.11866. This indicates substantial variability in interbank liquidity.
5. The PRISK variable has a mean value of 0.09149 and a standard deviation of 0.04331. The level of price risk can be categorized as moderate, though it varies considerably across samples.
6. The ORISK variable shows the highest mean among all risk variables, at 0.74336 with a standard deviation of 0.17710. This suggests that operational risk plays a relatively dominant role in shaping the bank's condition.
7. The CAR variable records an average of 0.25341 (25.34%) with a standard deviation of 0.22264. This reflects that, overall, bank capital levels are fairly strong, although disparities exist among banks.
8. The LDR variable has an average of 0.83779 or 83.78% with a standard deviation of 0.27365. This reflects that most banks disburse credit in a high proportion of third-party funds, but the differences between banks are quite significant.

Overall, the results of these descriptive statistics show that bank profitability in the sample is relatively moderate, with operational risk as the most dominant factor. In addition, the capital (CAR) and intermediation function (LDR) are relatively good, although there is high heterogeneity between banks.

Data Analysis and Hypothesis Testing

1. Model Specification Test - MODEL 1 (ROA)

a. Chow Test

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	12.062250	(25,98)	0.0000
Cross-section Chi-square	182.700323	25	0.0000

The FEM model is chosen when the probability value is 0.000 < 0.05.

b. Hausman Test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	3.023860	6	0.8058

The REM model was chosen because the probability value is 0.8058 > 0.05.

c. Uji Lagrange Multiplier

Lagrange Multiplier Tests for Random Effects
Null hypotheses: No effects
Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	119.8517 (0.0000)	0.023016 (0.8794)	119.8748 (0.0000)
Honda	10.94768 (0.0000)	-0.151711 (0.5603)	7.633904 (0.0000)
King-Wu	10.94768 (0.0000)	-0.151711 (0.5603)	3.925007 (0.0000)
Standardized Honda	12.37536 (0.0000)	0.503556 (0.3073)	5.304808 (0.0000)
Standardized King-Wu	12.37536 (0.0000)	0.503556 (0.3073)	2.097736 (0.0180)
Gourieroux, et al.	--	--	119.8517 (0.0000)

The REM model is chosen when the probability value is 0.0000 < 0.05.

The REM model is the most effective model, according to the findings of the Chow, Hasman, and LM tests.

2. Classic Assumption Test

But since REM was the model chosen for this investigation and REM was a part of the GLS estimate method, the test was not conducted (Hijrawati, 2022).

3. Data Panel Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.038045	0.003316	11.47308	0.0000
CAR	0.004039	0.002204	1.832176	0.0693
CRISK	0.001969	0.026664	0.073842	0.9413
LDR	0.004609	0.002185	2.109674	0.0369
LQ	0.000276	0.004743	0.058271	0.9536
ORISK	-0.044266	0.003227	-13.71851	0.0000
PRISK	-0.000416	0.006362	-0.065410	0.9480

as follows in light of the regression data panel's findings:

ROA = 0.038045 + 0.004039*CAR + 0.001969*CRISK + 0.004609*LDR + 0.000276*LQ - 0.044266*RISK - 0.000416*RISK

4. Hypothesis Testing

a. Partial Test (t-test)

Partial tests are used to know whether each independent variable in regression model gives significant effect to Y.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.038045	0.003316	11.47308	0.0000
CAR	0.004039	0.002204	1.832176	0.0693
CRISK	0.001969	0.026664	0.073842	0.9413
LDR	0.004609	0.002185	2.109674	0.0369
LQ	0.000276	0.004743	0.058271	0.9536
ORISK	-0.044266	0.003227	-13.71851	0.0000
PRISK	-0.000416	0.006362	-0.065410	0.9480

The t-test table above allows for the following choices to be made:

Hipotesis:

H_0 : Independent variables have no significant effect on dependent variables partially.

H_1 : Independent variables have a significant effect on dependent variables partially.

Taraf Signifikansi:

$\alpha = 5\%$

Decision Criteria:

1. Subtract H_0 if the p-value is < 0.05
2. Accept H_0 if the p-value is > 0.05

Results:

Table 4. 10 Test Results t

Variable	Prob.	Results
CAR	0.0693	H_0 Accepted
CRISK	0.9413	H_0 Accepted
LDR	0.0369	H_0 rejected
LQ	0.9536	H_0 Accepted
RISK	0.0000	H_0 rejected
RISK	0.9480	H_0 Accepted

Conclusion:

At significance level, result get that LDR and ORISK variable is have significant effect to ROA, but CAR, CRISK, LQ, and PRISK variable is not significant effect to ROA.$\alpha = 5\%$

b. Simultaneous Test (F Test)

F test is used to test if independent variables together have significant effect to dependent variable (Y) in regression model.

Root MSE	0.002698	R-squared	0.668984
Mean dependent var	0.003183	Adjusted R-squared	0.652837
S.D. dependent var	0.004708	S.E. of regression	0.002774
Sum squared resid	0.000947	F-statistic	41.43055
Durbin-Watson stat	1.214585	Prob(F-statistic)	0.000000

Based on the F test table above, the following decisions can be made:

Hipotesis:

H_0 : Independent variables have no significant effect on dependent variables simultaneously.

H_1 : Independent variables have a significant effect on dependent variables simultaneously.

Taraf Signifikansi:

$\alpha = 5\%$

Decision Criteria:

1. Subtract H_0 if the p-value is < 0.05
2. Accept H_0 if the p-value is > 0.05

Results:

P-Value 0.000 < 0.05 so that H_0 is subtracted

Conclusion:

At the significance level, the results were obtained that independent variables had a significant effect on ROA simultaneously so that the regression model was feasible to use.$\alpha = 5\%$

c. Coefficient of Determination

The determination coefficient is used to quantify the degree to which independent factors may account for the study's dependent variables. The findings of the determination coefficient, as proxied by Adjusted R2, are as follows:

Root MSE	0.002698R-squared	0.668984
Mean dependent var	0.003183Adjusted R-squared	0.652837
S.D. dependent var	0.004708S.E. of regression	0.002774
Sum squared resid	0.000947F-statistic	41.43055
Durbin-Watson stat	1.214585Prob(F-statistic)	0.000000

According to determination coefficient table, ROA variable can be explained by independent variable about 65%, and the rest 35% is explained by other variables not included in this study. This is showed by Adjusted R-squared value 0.65 that is obtained.

5. Model Specification Test - MODEL 2 (ROE)

a. Chow Test

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	9.639125	(25,98)	0.0000
Cross-section Chi-square	161.325854	25	0.0000

The FEM model is chosen when the probability value is 0.0000 < 0.05.

b. Hausman Test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	7.436266	6	0.2824

The prob value is 0.2824 > 0.05, so the one selected is the REM model.

c. Lagrange Multiplier Test

Lagrange Multiplier Tests for Random Effects
Null hypotheses: No effects
Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	90.61007 (0.0000)	0.871029 (0.3507)	91.48110 (0.0000)
Honda	9.518932 (0.0000)	-0.933290 (0.8247)	6.070966 (0.0000)
King-Wu	9.518932 (0.0000)	-0.933290 (0.8247)	2.668705 (0.0038)
Standardized Honda	10.84719 (0.0000)	-0.478138 (0.6837)	3.451742 (0.0003)
Standardized King-Wu	10.84719 (0.0000)	-0.478138 (0.6837)	0.524424 (0.3000)
Gourieroux, et al.	--	--	90.61007 (0.0000)

The REM model is chosen when the probability value is 0.0000 < 0.05.

The REM model is the most effective model, according to the findings of the Chow, Hasman, and LM tests.

6. Classic Assumption Test

The four traditional assumption tests are the autocorrelation, heteroscedasticity, multicollinearity, and normalcy tests. But since REM was the model chosen for this investigation and REM was a part of the GLS estimate method, the test was not conducted (Hijrawati, 2022).

7. Regresi Data Panel

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.273072	0.022598	12.08396	0.0000
CAR	-0.029006	0.015221	-1.905718	0.0590
CRISK	0.033552	0.178273	0.188209	0.8510
LDR	-0.020523	0.014864	-1.380765	0.1699
LQ	-0.032793	0.032306	-1.015084	0.3121
ORISK	-0.245454	0.021765	-11.27731	0.0000
PRISK	0.058127	0.044994	1.291869	0.1988

The regression model can be expressed as follows in light of the regression data panel's findings:

ROE = 0.27307190866 - 0.0290060448633*CAR + 0.0335524781711*CRISK - 0.020523270873*LDR - 0.0327932520283*LQ - 0.245454360219*RISK + 0.0581266428093*RISK

8. Hypothesis Test

a. Partial Test (t-test)

The regression model's dependent variable (Y) is tested for a significant relationship between each independent variable and the others using partial tests (t-tests).

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.273072	0.022598	12.08396	0.0000
CAR	-0.029006	0.015221	-1.905718	0.0590
CRISK	0.033552	0.178273	0.188209	0.8510
LDR	-0.020523	0.014864	-1.380765	0.1699
LQ	-0.032793	0.032306	-1.015084	0.3121
ORISK	-0.245454	0.021765	-11.27731	0.0000
PRISK	0.058127	0.044994	1.291869	0.1988

The t-test table above allows for the following choices to be selected:

The t-test table above allows for the following choices to be selected:

Hipotesis:

H_0 : Independent variables have no significant effect on dependent variables partially.

H_1 : Independent variables have a significant effect on dependent variables partially.

Taraf Signifikansi:

$\alpha = 5\%$

Decision Criteria:

1. Subtract H_0 if the p-value is < 0.05
2. Accept H_0 if the p-value is > 0.05

Results:

Table 4. 10 Test Results t

Variable	Prob.	Results
CAR	0.0590	H_0 Accepted
CRISK	0.8510	H_0 Accepted
LDR	0.1699	H_0 Accepted
LQ	0.3121	H_0 Accepted
RISK	0.0000	H_0 rejected
RISK	0.1988	H_0 Accepted

Conclusion:

At the significance level, the results were obtained that the ORISK variable had a significant effect on ROE while the variables CAR, CRISK, LDR, LQ, and PRISK did not have a significant effect on ROE.$\alpha = 5\%$.

b. Simultaneous Test (F Test)

F test is used for testing if independent variables together at same time have significant effect to dependent variable (Y) in regression model.

Root MSE	0.019506	R-squared	0.559289
Mean dependent var	0.022040	Adjusted R-squared	0.537790
S.D. dependent var	0.029496	S.E. of regression	0.020053
Sum squared resid	0.049462	F-statistic	26.01569
Durbin-Watson stat	1.530040	Prob(F-statistic)	0.000000

The F test table above allows for the following choices to be selected:

Hipotesis:

H_0 : Independent variables have no significant effect on dependent variables simultaneously.

H_1 : Independent variables have a significant effect on dependent variables simultaneously.

Taraf Signifikansi:

$\alpha = 5\%$

Decision Criteria:

1. Subtract H_0 if the p-value is < 0.05
2. Accept H_0 if the p-value is > 0.05

Results:

P-Value 0.0000 < 0.05 until H_0 is accepted

Conclusion:

At the significance level, the results were obtained that independent variables did not have a significant effect on ROE simultaneously so that the regression model was feasible to use.$\alpha = 5\%$.

c. Coefficient of Determination

The determination coefficient calculates how well independent variables can account for studied dependent variables. The adjusted R square value is used in this study to assess the regression model. The determination coefficient proxied by Adjusted R2 yielded the following results:

Root MSE	0.019506	R-squared	0.559289
Mean dependent var	0.022040	Adjusted R-squared	0.537790
S.D. dependent var	0.029496	S.E. of regression	0.020053
Sum squared resid	0.049462	F-statistic	26.01569
Durbin-Watson stat	1.530040	Prob(F-statistic)	0.000000

With an Adjusted R-squared value of 0.54 derived from the table of determination coefficients, it can be said that an independent variable accounts for 54% of the ROE variable, with additional variables not included in this study accounting for the remaining 46%.

Discussion

The findings of this study indicate that liquidity-related variables and risk factors collectively influence the financial performance of banks listed on the IDX, as reflected by the significant simultaneous effect on ROE. This result supports the general theory that bank profitability is determined by a combination of capital strength, liquidity management, credit quality, and operational efficiency rather than by a single factor. Banking performance is

multidimensional because profitability depends on how effectively management allocates funds, controls costs, and mitigates risks while maintaining regulatory compliance.

However, the partial test shows that only ORISK has a significant negative effect on ROE. This mean that higher operational risk like inefficiency, system failure, fraud risk, or weak internal control can directly reduce profitability. This finding is same with previous studies that stress importance of operational efficiency in banking performance. Research by Saif-Alyousfi (2022) found that cost management and operational efficiency are among the strongest determinants of bank profitability. Similarly, Ozili & Arun (2022) reported that poor operational management tends to lower bank returns, especially during periods of economic uncertainty.

The insignificant effect of CAR on ROE implies that stronger capital buffers do not automatically translate into higher profitability. Although adequate capital is essential for stability and regulatory compliance, excessive capital may reduce leverage opportunities and lower returns to shareholders. This result is in line with Luo et al., (2024) who argued that the relationship between capital and profitability can be mixed depending on market structure and risk preferences. It is also supported by smolina et al., (2023) who found that CAR was not always a significant determinant of profitability in commercial banks. Therefore, maintaining optimal rather than excessive capital appears more relevant for maximizing ROE.

Likewise, CRISK, LDR, and LQ were found to have no significant individual effect on ROE. This may indicate that Indonesian listed banks have relatively effective credit screening systems and prudent liquidity management practices, reducing the isolated impact of these variables on profitability. Previous studies provide mixed evidence on this issue. Adelopo et al., (2021) found that liquidity had a positive but sometimes weak influence on bank profitability, while Siddique et al., (2022) showed that credit risk may significantly affect profits depending on the banking environment. The absence of significance in this study may therefore reflect industry resilience, regulatory oversight, or similarities in liquidity practices across sampled banks.

These factors maybe like macroeconomic condition, inflation, interest rate, digital transformation, market competition, corporate governance, and managerial strategy. This result is same with previous literature that show bank profitability not only affected by internal ratios but also by wider economic condition. Overall, this study show that improving operational efficiency should be important strategy priority for banks, and future research should add macroeconomic and governance variables to get more complete understanding about financial performance.

CONCLUSION

This study highlights that banking profitability is not solely determined by intermediation activities but is also critically shaped by the quality of risk management, particularly operational risk, thereby reinforcing the central role of risk management as a foundation of financial performance; practically, this implies that bank management should prioritize strengthening governance, internal control systems, and technology utilization to mitigate risks, while regulators need to emphasize supervision on risk management quality to maintain financial stability, and investors may consider this aspect as a key indicator in

assessing long-term performance sustainability; however, limitations related to the scope of variables, relatively short observation period, and potential methodological bias suggest the need for future research to adopt more comprehensive models by incorporating macroeconomic factors, internal bank characteristics, and more robust methodological approaches to provide a deeper and more contextual understanding of banking profitability determinants.

REFERENCES

Adelopo, I., Vichou, N., & Cheung, K. Y. (2021). Capital, liquidity, and profitability in European banks. *Journal of Corporate Accounting & Finance*. Advance online publication. https://doi.org/10.1002/jcaf.22522

Alim, W., Ali, A., & Metla, M. R. (2021). *The effect of liquidity risk management on financial performance of commercial banks in Pakistan*.

Arhinful, R., Gyamfi, B. A., Mensah, L., & Obeng, H. A. (2025). Non-performing loans and their impact on investor confidence: A Signaling Theory perspective—Evidence from US Banks. *Journal of Risk and Financial Management*, *18*(7), 383.

Asutay, M., & Ubaidillah. (2024). Examining the impact of intellectual capital performance on financial performance in islamic banks. *Journal of the Knowledge Economy*, *15*(1), 1231–1263.

Bandyopadhyay, A. (2022). Bank financial performance and its linkage with capital: a dynamic panel data analysis of public sector Banks in India. *The Indian Economic Journal*, *70*(3), 437–451.

Damayanti, Y. T., & Gunawan, C. (2022). Pengaruh Motivasi Dan Lingkungan Keluarga Terhadap Minat Berwirausaha Mahasiswa. *Jurnal Ekonomi, Bisnis Dan Manajemen*, *1*(3), 32–46.

Dhingra, D., & Sharma, S. (2025). Operational risk and resilience: Insights from banking case studies. In *Risk, Reliability and Resilience in Operations Management* (pp. 121–154). Elsevier.

Foucault, T., Pagano, M., & Röell, A. (2023). *Market liquidity: theory, evidence, and policy*. Oxford University Press.

Ghimire, S. (2024). *Banks Specific Factors Determining Profitability Of Nepalese Commercial Banks*. Shanker Dev Campus.

Guzel, A. (2021). Risk, asset and liability management in banking: conceptual and contemporary approach. In *Financial Ecosystem and Strategy in the Digital Era: Global Approaches and New Opportunities* (pp. 121–177). Springer.

Hacini, I., Boulenfad, A., & Dahou, K. (2021). The Impact of Liquidity Risk Management on the Financial Performance of Saudi Arabian Banks. *EMAJ: Emerging Markets Journal*, *11*(1).

Haddou, S., & Mkhinini, S. (2023). Investigating the linkage between Shariah board size, liquidity risk and bank stability through an asymmetric lens. *Journal of Islamic Accounting and Business Research*, *14*(4), 652–674.

Hindibu, B. (2025). *Determinants Of Bank Liquidity And Their Impact On Profitability Of Private Commercial Banks (Emperical Study On Awash Bank Of Ethiopia)*. Ambo University.

Hossain, M. A., & Sarkar, T. (2025). *Assessing the Role of Internal Controls in Mitigating Risks and Enhancing Operational Efficiency A Study of Meghna Bank*.

Hutagalung, J. S. D. (2020). Pengaruh Moral Kerja Dan Koordinasi Terhadap Kinerja Karyawan Pada Pt. Welling Tapioka Jaya, Serdang Bedagai Sumatera Utara. *Jurnal Ilmiah Manajemen Dan Bisnis (Jimbi)*, *1*(1), 91–100.

Isbahi, M. B., Zuana, M. M. M., & Toha, M. (2024). The Multi-Social Relation of the Cattle Industry in the Plaosan Subdistrict Animal Market of Magetan Regency. *Malacca: Journal of Management and Business Development*, *1*(1), 31–46. https://doi.org/10.69965/malacca.v1i1.51

James, N., & Kepha, O. (2020). Effects of risk management practices on the performance of insurance firms in Kenya: A case of AIG insurance company limited. *International Journal of Finance and Banking Research*, *2*(9), 390–394.

Javid, S., Farooqi, M. R., Shoukat, A., & Rasheed, A. (2020). Assessment of Financial Risks on Financial performance of Conventional Banks: An Empirical Evidence from Pakista. *Paradigms*, *S1*, 81–86.

Kaplan, H. E., Hazar, A., & Babuşcu, Ş. (2023). Scale Factor in the Performance of Deposit Banks–The Turkey Case. *Ekonomi Politika ve Finans Araştırmaları Dergisi*, *8*(2), 244–262.

Keter, C. K. S., Cheboi, J. Y., Kosgei, D., & Chepsergon, A. K. (2023). Financial performance and firm value of listed companies: Financial performance measure ROA versus ROE. *Journal of Business, Economics and Management Research Studies*, *1*(4), 1–11.

Kinyua, F. W., & Fredrick, W. (2022). Liquidity risk and financial performance of manufacturing firms listed at Nairobi Securities Exchange. *International Academic Journal of Economics and Finance, 3 (8), 1*, *24*(2).

Lavoie, M., & Reissl, S. (2019). Further insights on endogenous money and the liquidity preference theory of interest. *Journal of Post Keynesian Economics*, *42*(4), 503–526.

Lew, B.-Y., & Lau, W.-T. (2022). Credit risk and commercial bank performance: Evidence from ASEAN. *International Journal of Academic Reserach in Economics and Management Sciences*, *11*(3).

Li, J. (2024). Risk Assessment of Banks When Interest Rate Hikes. *SHS Web of Conferences*, *193*, 1024.

Luo, P., Lu, T., Song, D., & Jiang, J. (2024). Hedging, optimal capital structure and incentives for risk-shifting with preferences for liquidity. *Applied Economics Letters, 31*(13), 1563–1576. https://doi.org/10.1080/1351847X.2024.2310797

Matey, J. (2021). Bank liquidity risk and bank credit risk: Implication on bank stability in Ghana. *International Journal of Scientific Research in Multidisciplinary Studies*, *7*(4), 1–9.

Mega, C. C., Fitria, B. T., Kumalasari, R. E., Damayanti, I., & Ramdani, A. (2024). The Influence of Loan to Deposit Ratio (LDR) and Operating Costs on Operating Income (BOPO) on Return on Assets (ROA): Study On One of The Banks in Bandung. *Majalah Bisnis & IPTEK*, *17*(2), 204–215.

Montes, G. C., Valladares, M., & de Moraes, C. O. (2021). Impacts of the sovereign risk perception on financial stability: Evidence from Brazil. *The Quarterly Review of Economics and Finance*, *81*, 358–369.

Muktiadji, N., & Pamungkas, B. (2022). The effect of financial ratio on stock price of banks listed on the Indonesia Stock Exchange (IDX). *Asian Journal of Economics, Business and Accounting, 22*(24), 232–240. https://doi.org/10.9734/AJEBA/2022/v22i24910

Mwangi, W., Ong'era, J., & Matanda, J. (2022). Financial Risk and Financial Performance of Commercial Banks Listed in The Nairobi Securities Exchange In Kenya. *International Journal of Finance and Accounting*, *7*(4), 1–17.

Mwania, R. J., & Suva, M. (2022). Financial risks and financial performance of commercial banks in Kenya. *Journal of Finance and Accounting*, *6*(5), 22–40.

Naili, M., & Lahrichi, Y. (2022). The determinants of banks' credit risk: Review of the literature and future research agenda. *International Journal of Finance & Economics*, *27*(1), 334–360.

Nazar, M. R., & Mawarni, A. (2023). Return on asset, return on equity, and net profit margin: Influence stock price. *Jurnal E-Bis: Ekonomi Bisnis, 7*(2), 444–457. https://doi.org/10.37339/e-bis.v7i2.1273

Neupane, G. (2024). *Credit risk management and profitability of commercial banks in Nepal*. Shanker Dev Campus.

Nguyen, T. A. H. (2024). *Liquidity risk at commercial banks and factors affecting liquidity risk*.

Nurkhalifa, U., Machpudin, A., & Setiawati, R. (2021). Pengaruh kecukupan modal dan efisiensi operasional terhadap kinerja keuangan perbankan umum konvensional di Bursa Efek Indonesia Periode 2016-2020. *Jurnal Dinamika Manajemen*, *9*(2), 85–98.

Oino, I. (2021). Bank solvency: The role of credit and liquidity risks, regulatory capital and economic stability. *Banks and Bank Systems*, *16*(4), 84–100.

Omri, M. B. (2022). Understanding the relationship between liquidity and banking financial stability in Islamic and conventional banks. *Journal of Business and Economic Options*, *5*(1), 39–47.

Onsongo, S. K., Muathe, S. M. A., & Mwangi, L. W. (2020). Financial risk and financial performance: evidence and insights from commercial and services listed companies in Nairobi securities exchange, Kenya. *International Journal of Financial Studies*, *8*(3), 51.

Ozili, P. K., & Arun, T. G. (2023). Does economic policy uncertainty affect bank profitability? *International Journal of Managerial Finance, 19*(4), 803–830. https://doi.org/10.1108/IJMF-04-2022-0177

Rachman, A., & Pamungkas, P. (2024). The Influence of Credit Risk and Liquidity with Guarantee Interest Rate as a Moderator on the Financial Performance of Conventional and Islamic Rural Banks (BPR and BPRS). *Journal of Finance and Islamic Banking*, *7*(2).

Rashaduzzaman, M. (2024). *Risk Management in Banks: It's Relationship with the Financial Performance of Commercial Banks in Bangladesh*. © University of Dhaka.

Rasyid, A., & Zakaria, Z. (2023). The effect of financial performance on the stock price of service companies listed on the Indonesia Stock Exchange (IDX). *Golden Ratio of Finance Management, 3*(1), 22–34. https://doi.org/10.52970/grfm.v3i1.310

Ruusunen, N. (2025). *Extreme Value Theory in Tail Risk Forecasting*.

Saif-Alyousfi, A. Y. H. (2022). Determinants of bank profitability: Evidence from 47 Asian countries. *Journal of Economic Studies, 49*(1), 44–60. https://doi.org/10.1108/JES-05-2020-0215

Sathyamoorthi, C., Mapharing, M., Mphoeng, M., & Dzimiri, M. (2020). Impact of financial risk management practices on financial performance: Evidence from commercial banks in Botswana. *Applied Finance and Accounting*, *6*(1), 25–39.

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

Simanullang, C. D., Edward, Y. R., Ginting, R. R., & Simorangkir, E. N. (2021). The effect of return on assets (ROA) and return on equity (ROE) on company value with capital structure as moderating variables in banking companies listed on the indonesia stock exchange. *International Journal of Business, Economics and Law*, *24*(6), 129–134.

Smolina, E., Markovskaya, E., & Krupnov, Y. (2023). Determinants of profitability of commercial banks. *E3S Web of Conferences, 381*, Article 02013. https://doi.org/10.1051/e3sconf/202338102013

Sochib, S., Liyundira, F. S., & Yulianti, A. (2022). The Effect of LDR, NPL, CAR on Return on Asset of Conventional National Commercial Bank in Indonesia. *International Journal of Accounting and Management Research*, *3*(2), 51–59.

Tuna, G., & Almahadin, H. A. (2021). Does interest rate and its volatility affect banking sector development? Empirical evidence from emerging market economies. *Research in International Business and Finance*, *58*, 101436.

Wahyuni, P. D., Umam, D. C., No, J. M. S., & No, J. S. K. (2023). The effect of credit risk, capital adequacy and operational efficiency on banking financial performance with a profitability approach. *International Journal of Economics, Business and Management Research*, *7*(06), 12–28.