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The Effect of Credit Risk, Bank Liquidity, and Capital Adequacy on Financial Performance at Conventional Commercial Banks Listed on the Indonesia Stock Exchange for the Period 2022-2024

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A B S T R A C T

This study "aims to analyze the effect of credit risk (NPL), bank liquidity (LDR), and capital adequacy (CAR) on financial performance (ROA) in conventional commercial banks listed on the Indonesia Stock Exchange for the period 2022-2024. The method used is quantitative with a causal approach and multiple linear regression analysis. The results showed that NPL had a significant negative effect, LDR had a significant positive effect, while CAR had no significant effect on ROA. Simultaneously, the three variables have a significant effect on financial performance. The findings confirm the importance of credit risk management and liquidity management in maintaining bank profitability, while the role of capital is more visible in the context of long-term stability."

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INTRODUCTION

An essential part of every country's financial system is the banking industry, which takes deposits from citizens and lends those monies out to businesses and other organisations. Return on Assets (ROA) is a metric that showcases the ratio of net profit to total assets and may be used to assess a bank's financial performance. A greater return on assets indicates that the bank is doing well financially.

The Non-Performing Loan (NPL) ratio is one indicator of credit risk that banks face in their day-to-day operations and which may have an impact on their bottom line. The non-performing loan (NPL) ratio is a measure of the proportion of total loans that have not been paid back, which may lead to a drop in interest revenue and the establishment of loss reserves. Higher levels of credit risk are associated with worse financial performance for banks, as shown by Fitrianingsih and Kusmiatun's (2021) finding that nonperforming loans (NPL) reduce Return on Assets (ROA).

Banks must effectively manage not just credit risk but also liquidity, another critical component. The Loan to Deposit Ratio (LDR) is a liquidity metric that shows how much of the money coming in from outside sources is being used for loans. When LDR is too high, it means the bank is not having enough money on hand to cover unexpected withdrawals, and when it's too low, it means they aren't making the most of their money. The direction of effects might vary depending on the effectiveness of fund management, however research by Kinanti and Putra (2024) and Amaniya & Cahyono (2022) shown that LDR significantly affects Return on Assets (ROA).

Capital adequacy, as assessed by the Capital Adequacy Ratio (CAR), is the third component that significantly contributes to the preservation of banks' financial stability. The capacity of the bank to withstand loss is shown by this ratio, which has a minimum limit of 8% imposed by Bank Indonesia. While high CAR indicates that a bank is resilient to financial shocks, inefficient use of extra capital may lower efficiency. A strong capital structure is crucial, as shown by studies conducted by Febriekasari & Sudarsi (2021) and Lianadewi & Chasanah (2022), which demonstrate that CAR significantly impacts Return on Assets (ROA).

The significance of the three measures to the financial performance of banks has been highlighted in several pertinent research. The Capital Adequacy Ratio (CAR) and Non-Performing Loans (NPLs) significantly impact Return on Assets (ROA), according to Supeno and Aminudin (2021). A correlation between capital ratios, credit risk, liquidity, and ROA was shown by Gregorius Paulus Tahu et al. (2021). Nonperforming loans (NPLs) and the loan-to-deposit ratio (LDR) were shown to be major influences on return on assets (ROA) by Fadil, Arifin, and Saraswati (2022), who also included managerial quality (NIM) and solvency (DER) variables.

Bank Return on Assets (ROA) is directly impacted by the financial parameters called Non Performing Loans (NPL), Loan to Deposit Ratio (LDR), and Capital Adequacy Ratio (CAR), according to empirical research. During the post-pandemic economic recovery phase of 2022–2024—as a challenge to

banking financial performance—this research intends to re-examine the influence of these three factors on ROA at the biggest conventional commercial banks in Indonesia listed on the IDX.

LITERATURE REVIEW

Financial Performance

The degree of profitability is one indicator of financial success, which in turn shows the bank's capacity to accomplish its financial goals via efficient and effective use of its resources. Both Santoso (2020) and Putri et al. (2021) stress the significance of profitability as a measure of a company's financial stability, competitiveness, and health. Among the important ratios used in these assessments are Return on Assets (ROA) and Return on Equity (ROE). These ratios show how well managers use their capital and assets to make a profit. According to Nurhayati et al. (2023), investors are drawn to financially stable institutions that demonstrate strong operational efficiency, good risk management, and capital management, all of which contribute to profitability. Here, return on assets (ROA) is the key performance metric since it shows how well management is able to turn their assets into profit (Prasetyo et al., 2023).

Credit Risk

Among the key metrics used to evaluate banking sector lending issues, credit risk takes into account non-performing, substandard, and dubious loans; it represents the possibility that debtors may not pay back their debts (Rahman et al., 2023). Bank profitability drops as non-performing loans rise as credit risk rises. When looking at a bank's capacity to handle non-performing loans, one measure is the Non-Performing Loan (NPL) ratio. A low ratio shows that profitability is consistent, whereas a high ratio shows that credit quality is declining (Putra & Dewi, 2022). Bank operational efficiency and profitability may take a hit if nonperforming loans (NPLs) are not handled appropriately; this can happen when credit analysis fails or when debtors are careless (Wibowo et al., 2022). (Hartono, 2021). Consequently, in order to maintain stability and credit quality, it is crucial to have excellent nonperforming loan (NPL) management. According to Bank Indonesia Circular Letter Number 12/30 / DPNP dated December 16, 2011, the maximum permissible NPL level is 5%.

Bank Liquidity

Loan to Deposit Ratio (LDR) is one of the bank's liquidity indicators that shows how well the bank can handle short-term demand, including customer withdrawals. If a customer defaults on a loan or interest payment, the LDR shows how well the bank handles liquidity risk (Rahman & Putri, 2023). To achieve a good balance between efficient lending and third-party fund management, the optimal LDR ratio is between 70% and 80%. A bank's size, industry, and internal rules determine its liquidity needs. In terms of lending, larger banks are often more efficient as they can better manage risks and maximize profits (Putra & Dewi, 2022). To keep things running smoothly and stably, banks need to manage

LDR carefully; otherwise, banks risk liquidity problems by allocating too much capital to loans.

Capital Adequacy

The Capital Adequacy Ratio (CAR) is a measure of a bank's capacity to keep its finances stable by ensuring that it has sufficient capital to cover the risk of loss from operating operations. Profitability metrics like Return on Assets (ROA) and the bank's capacity to weather financing risks are both positively affected by a high CAR. To what degree can internal capital support hazardous assets like loans and securities is shown by CAR, which is the percentage of own capital to Risk Weighted Assets (RWA). To maintain capital adequacy in accordance with BIS criteria, banks are mandated by OJK laws to have a CAR of 8% or above. Financial institutions that have a high capital asset ratio (CAR) inspire trust among investors and guarantee smooth operations (Rahman & Sari, 2023; Putra & Dewi, 2022; OJK, 2022).

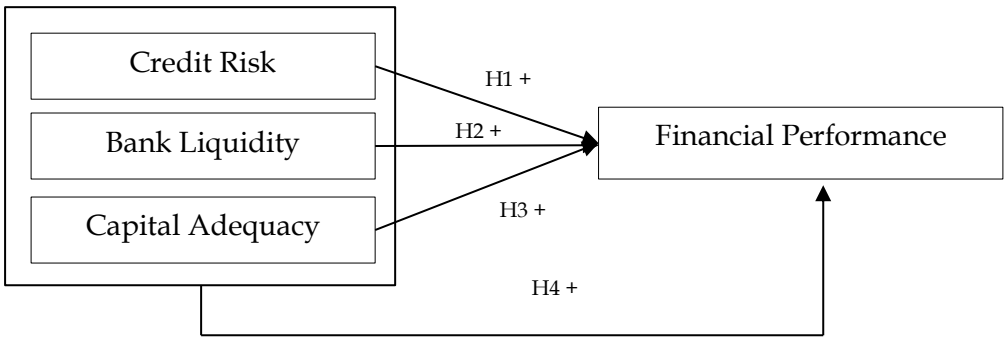

Figure 1. Framework of Thought

H_1: "Credit Risk has a positive and significant effect on Financial Performance
H_2: Bank Liquidity has a positive and significant effect on Financial Performance
H_3: Capital Coverage has a positive and significant effect on Financial Performance
H_4: Credit Risk, Bank Liquidity, and Capital Adequacy together affect Financial Performance."

METHODOLOGY

The link between measurable variables is described and explained in this research utilising a causal quantitative technique. This study's population consists of forty firms, all of which are traditional commercial banks that were listed on the Indonesia Stock Exchange (IDX) between 2022 and 2024. This study's sample consisted of 36 banking companies. To be eligible, these companies had to meet the following criteria: they had to be commercial banks listed on the Indonesia Stock Exchange (IDX) from 2022 to 2024, they had to publish financial data from that period in an annual report (Annual Report), and they had to provide all the data needed for the research variables from that period. Statistical software SPSS was used for data analysis. Methods for analysing data include

classical assumption tests, multiple linear regression for testing hypotheses, and descriptive analysis for describing sample characteristics.

RESEARCH RESULT

Descriptive Statistical Analysis

Descriptive statistical analysis aims to provide an overview or description of the data through the minimum, maximum, average, and standard deviation values, which in this study are used to interpret the characteristics of the data collected.

Table 1. Results of Statistical Descriptive Analysis

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	108	-.05200	.05850	.0116555	.01624632
NPL	108	.00005	.04830	.0141013	.01086650
LDR	108	.15983	3.73610	.9327049	.44038766
CAR	108	.10500	1.27425	.3775853	.24355536
Valid N (listwise)	108				

The top financial performance (ROA) belongs to PT Bank Amar Indonesia Tbk. with 0.05850, the lowest to PT Bank Neo Commerce Tbk. with -0.05200, with an average of 0.01165 and a standard deviation of 0.01624, according to the data in Table 1. There is a standard deviation of 0.01086 and an average of 0.01410 for nonperforming loans (NPLs), with PT Allo Bank Indonesia Tbk. owning the lowest at 0.0005 and PT Bank of India Indonesia Tbk. the most at 0.04830. With an average of 0.93270 and a standard deviation of 0.44038, the bank liquidity ratio (LDR) ranged from 0.15983 at PT Bank Capital Indonesia Tbk. to 3.73610 at PT Bank Amar Indonesia Tbk. With a mean of 0.37758 and a standard deviation of 0.24355, the capital adequacy ratio (CAR) ranges from 0.10500 at PT Bank Mayapada Internasional Tbk. to 1.27425 at PT Bank of India Indonesia Tbk.

Classical Assumption Test Results

Normality

Table 2. One-Sample Kolmogorov-Smirnov Test

	Unstandardized Residual
Asymp. Sig. (2-tailed)	.058[c,d]

Table 2 shows the results of the normalcy test; with an Asymp sig value (2-tailed) of 0.058, we may conclude that the residual data used in this regression model follows a normal distribution.

Heteroscedasticity

Table 3. Heteroscedasticity Test Results

Model		t	Sig.
1	(Constant)	2.224	.028
	NPL	-1.454	.149
	LDR	1.401	.164
	CAR	.781	.437

Table 3 displays the results of the heteroscedasticity test; the Glejser test yielded a Sig value greater than 0.05. We may use these data to infer that the regression model does not exhibit any indications of heteroscedasticity.

Autocorrelation

Table 4. Autocorrelation Test Results

Durbin-Watson
1.784

It can be inferred that this regression model does not have any autocorrelation, positive or negative, based on table 4, as the Durbin-Watson value of 1.784 falls between the upper limit (du = 1.743) and (4 - du = 2.257) at the 5% significance level for n = 108. Since the regression model is not autocorrelation-free, we can trust the analysis findings for interpretation and decision-making.

Multicollinearity

Table 5. Multicollinearity Test Results

Coefficients[a]

Model		*Collinearity Statistics*	
		Tolerance	VIF
1	NPL	.953	1.049
	LDR	.729	1.371
	CAR	.701	1.426

a. Dependent Variable: ROA

According to Table 4.6, which displays the results of the multicollinearity test, the tolerance coefficient value is more than 0.1 and the VIF is less than 10. Based on these findings, it is safe to proceed with the study using this regression model without worrying about multicollinearity.

Multiple Linear Regression Analysis Results

This study's hypothesis testing makes use of multiple linear regression analysis to determine the impact of several independent variables (X) on the dependent variable (Y). This is what the regression analysis turned out to be:

Table 6. Multiple Linear Regression Analysis Results

Model		Coefficients			t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.010	.004		2.510	.014
	NPL	-.395	.141	-.264	-2.800	.006
	LDR	.008	.004	.226	2.090	.039
	CAR	-.001	.007	-.022	-.201	.841

Based on the analysis results in table 6, the multiple regression analysis equation is as follows:

$$\boldsymbol{ROA = 0,010 - 0,395NPL + 0,008LDR - 0,001CAR + \epsilon}$$

From the results of the regression equation model above, the conclusions that can be drawn are as follows.

1. A value of -0.395 is the credit risk regression coefficient. Based on these findings, it may be inferred that, everything else being equal, a 0.395 loss in financial performance will occur for every one unit rise in the credit risk variable.
2. Bank liquidity has a regression coefficient value of 0.008. Based on these findings, it may be inferred that, everything else being equal, a one-unit increase in the liquidity variable will lead to a 0.008-unit rise in financial performance.
3. Capital sufficiency has a regression coefficient value of -0.001. Assuming all other independent variables remain constant, these findings suggest that financial performance will decline by 0.001 for every one unit rise in the capital adequacy variable.

Partial Test

Table 7. Partial Test Results

Model		t	Sig.
1	(Constant)	2.510	.014
	NPL	-2.800	.006
	LDR	2.090	.039
	CAR	-.201	.841

The results of hypothesis testing in this study are as follows:

1. The primary hypothesis of this research asserts that, from 2022 to 2024, traditional commercial banks listed on the Indonesia Stock Exchange

would see a decline in financial performance due to credit risk. According to the data in table 7, the correlation coefficient is -2.800 and the p-value is 0.006. Declared significant is the regression coefficient (ρ = 0.006 <0.05) due to the fact that the significance value is less than the 5% threshold of significance.

2. According to the second hypothesis, conventional commercial banks listed on the Indonesia Stock Exchange between 2022 and 2024 would have better financial performance if their liquidity is high. At the 5% significance level (ρ = 0.000 <0.05), the connection parameter is 2.090 and the significance value is 0.039, according to table 7. Based on these findings, it is clear that bank liquidity significantly and positively affects financial performance.
3. Capital adequacy is not significantly related to financial performance in conventional commercial banks listed on the Indonesia Stock Exchange for the period 2022-2024, according to the third hypothesis in this study. This conclusion is based on the test results in table 7, which showed a relationship parameter of -0.201 and a significance value of 0.841 at a 5% significance level (ρ = 0.000> 0.05).

Simultaneous Test Results

Table 8. Simultaneous Test Results

ANOVA[a]

Model		Sum of	df	Mean Square	F	Sig.
1	Regression	.003	3	.001	4.533	.005[b]
	Residual	.025	104	.000		
	Total	.028	107			

a. Dependent Variable: ROA

b. Predictors: (Constant), CAR, NPL, LDR

Table 8 displays the results of the F test, which indicate a F value of 4.533 and a significance level of 0.005. This implies that the factors of credit risk, bank liquidity, and capital adequacy all impact financial performance significantly at the same time, since the significance level is less than 0.05. As a result, we can test hypothesis H4, which states that traditional commercial banks listed on the Indonesia Stock Exchange would be financially affected by the three independent variables between 2022 and 2024, and the model is statistically viable.

Determination Coefficient Test Results

Table 9. Determination Coefficient Test Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.340a	.116	.090	.01549692

Table 9 shows that the variables of credit risk (NPL), bank liquidity (LDR), and capital adequacy (CAR) explain 9.0% of the variation in financial

performance, with an Adjusted R^2 value of 0.090. The remaining 91.0% is influenced by factors outside this research model.

DISCUSSION

Effect of Credit Risk on Financial Performance

Credit risk, namely non-performing loans or NPLs, significantly impacts the financial performance of traditional commercial banks listed on the Indonesia Stock Exchange from 2022 to 2024, according to this study's conclusions. Increases in nonperforming loans (NPLs) pose a threat of default, which in turn reduces interest revenue and raises the cost of loss provisioning, cutting into a bank's return on assets (ROA). This result accords with the agency cost and credit risk hypothesis, which states that excessive nonperforming loans (NPLs) negatively affect banks' net income since they indicate inefficient asset management and poor quality productive assets. Consequently, the bank's financial success relies on its credit portfolio management. Past research by Hidayat and Firmansyah (2021), Wulandari and Sari (2020), Fitrianingsih and Kusmiatun (2021), and Herlyana Dewi Cahyani and Amirudin (2024) has repeatedly shown that a rise in NPL has a considerable negative influence on ROA, lending credence to this conclusion.

Effect of Bank Liquidity on Financial Performance

The study found that conventional commercial banks listed on the Indonesia Stock Exchange had better financial performance from 2022 to 2024 when liquidity was high. This is because, in the short term, being able to meet obligations through efficient management of third party funds boosts customer confidence and operational stability, which in turn increases profitability. A high level of liquidity may enhance revenue but also increases risk as it indicates the bank's capacity to route loans from deposit funds. Theoretical frameworks for managing liquidity and trade-offs agree with this result, stressing the need for a happy medium between sufficient liquidity and effective placement of funds to sustain Return on Assets (ROA). Insufficient liquidity may lead to a confidence crisis, while a surplus of liquidity suggests that funds are not being used optimally. Prior research by authors like Pratiwi and Kurniawan (2020), Sari and Nugroho (2022), and Widiastuti Murtiningrum and Ferry (2024) supports this finding by demonstrating that liquidity consistently improves banks' financial performance. This is particularly true in the setting of traditional commercial banking, where the role of intermediaries and public trust are crucial.

Effect of Capital Adequacy on Financial Performance

Although capital adequacy reflects the bank's ability to bear the risk of loss, large capital is not necessarily utilised productively to generate income. Consequently, this study found that capital adequacy did not significantly impact the financial performance of conventional commercial banks listed on the Indonesia Stock Exchange from 2022 to 2024. Capital is less of a driver of short-term profits and more of a buffer against risk and a tool for long-term stability.

Both Putri and Yuliani (2022) and Ramadhan and Prasetyo (2023) found the same thing: banks put more money into maintaining stability and complying with regulations than they do into making the most money possible. This means that capital amount doesn't always matter for profitability.

The Effect of Credit Risk, Bank Liquidity, and Capital Adequacy on Financial Performance

During the period of 2022–2024, conventional commercial banks listed on the Indonesia Stock Exchange experienced a notable impact from credit risk (NPL), bank liquidity (LDR), and capital adequacy (CAR). These three factors interacted to determine the level of profitability of the banks, which is influenced by asset quality, the ability to meet short-term liabilities, and the strength of capital. This research lends credence to the idea that there is no one determinant of a bank's financial performance but rather a myriad of interrelated factors. This view is in keeping with the CAMELS framework, which highlights the need for complementary efforts to keep financial institutions afloat. The capacity of conventional banks to manage credit risk, liquidity, and capital resilience in compliance with OJK and BI regulations is a key factor in their financial performance, as supported by prior research by Dewi and Saputra (2021) and Wicaksono and Prasetyo (2023). Specifically, an increase in nonperforming loans (NPL) lowers ROA, while increases in loan default ratios (LDR) and capital asset ratios (CAR) boost profitability.

CONCLUSIONS AND RECOMMENDATIONS

The purpose of this research is to use multiple regression analysis to determine how credit risk, bank liquidity, and capital sufficiency impacted the financial performance of traditional commercial banks from 2021 to 2024. According to the findings, financial performance is negatively impacted by credit risk. This means that when credit risk increases, financial performance decreases and vice versa. An increase in a bank's liquidity level is associated with an improvement in the bank's financial performance. Meanwhile, capital adequacy has not been immediately reflected in short-term profitability (ROA), and its position as a long-term risk mitigation means that it does not significantly impact financial performance. It is suggested that in order to better understand more intricate causal links, future study should include independent variables like BOPO, ROA, or ROE and think about using sophisticated analytical tools like route analysis or SEM. A more complete view of long-term patterns and repercussions, including the effects of several economic cycles, may be obtained by extending the study period to ten years.

FURTHER STUDY

These results may be skewed due to a number of limitations in this study. For example, the variables used to predict financial performance-credit risk, bank liquidity, and capital adequacy-only account for 8% of the variation in performance; this leaves 92% of the variation unaccounted for. In addition, the banking industry on the Indonesia Stock Exchange encompasses a wide variety of institutions with different characteristics from a typical commercial bank;

however, this study only focuses on the business of conventional commercial banks listed on the IDX in 2021-2024.

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