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THE INFLUENCE OF BANK-SPECIFIC, INDUSTRY-SPECIFIC, AND MACROECONOMIC FACTORS ON CONVENTIONAL BANK PERFORMANCE IN INDONESIA

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ABSTRACT

This research aims to examine the influence of Liquidity, Bank Size, Operational Efficiency, Asset Quality, CAR, NPL, LDR, Asset Share, Average Exchange Rate, and Inflation Rate on the performance of conventional banks. The research sample used was conventional banks listed on the Indonesia Stock Exchange for the period 2019 - 2022. Data was taken from time series data for 2019 - 2022 for the independent variable and bank performance as the dependent variable. The methodology of this research is OLS with Eviews 12 software. The findings in this research are that Liquidity, Bank Size, Operational Efficiency, Asset Quality, CAR, NPL, LDR, Asset Share, Average Exchange Rate, and Inflation Rate simultaneously influence the performance of conventional banks. Bank size, operational efficiency, asset quality, CAR, and NPL, have a significant effect on changes in conventional bank performance as measured by ROA. Bank Size, Operational Efficiency, CAR, NPL have a significant effect on changes in conventional bank performance as measured by ROE. Bank size, operational efficiency, CAR, NPL, LDR, and inflation rate have a significant effect on changes in conventional bank performance as measured by NIM. Bank Size and CAR have a positive and significant effect on changes in conventional bank performance, while Operational Efficiency and NPL have a negative and significant effect on changes in conventional bank performance. Banks can take advantage of large bank size and CAR opportunities to improve their performance so that investors are interested in buying bank shares. Operational efficiency and low and controlled NPL will increase banking profits, especially in conventional banks, thereby improving the bank's performance. It is hoped that the results of this research can provide input for banks and investors to consider bank size, operational efficiency, CAR, and NPL in managing their business and in making investment decisions.

Keywords: *Bank Size, Operational Efficiency, CAR, NPL, ROA, ROE, NIM*

INTRODUCTION

Financial development is essential to ensure sustainable growth in developing countries. However, proper regulation and supervision are necessary for the financial sector to develop (Syed et al., 2022a). Strong banks allocate resources and provide acceptable returns to shareholders. Investment occurs when there is a return, which drives economic growth. On the other hand, poor banking performance hinders economic growth and progress, causing failures and crises.

Strong bank performance rewards shareholders with acceptable returns on investment in addition to resource allocation. Investment occurs when there is a return, leading to economic expansion. On the other hand, poor banking performance hurts economic expansion and progress. Failure and crisis can occur due to poor banking performance. The elements that determine financial performance are dynamic over time and vary depending on the operating style of the company from location to location, which makes the argument for the determinants of financial performance interesting, consequently, measuring bank profitability has received due attention in the corporate finance literature (Bushashe, 2023). A healthy business can

calculate its potential profit or net profit. Previous research on factors influencing bank performance has been conducted in various countries and produced inconsistent and sometimes contradictory findings. In addition, they do not represent industry-specific variables (for example, (Nurfitria et al., 2023); (Isayas, 2022). This is a crucial factor and has a significant impact on bank performance.

The components of success in analyzing a bank's financial presentation can be done by assessing the level of Return on Assets (ROA) Return on Capital (ROC) and Return on Equity (ROE). ROA, or the ratio of net income to all property, represents a company's efficient utilization of its total assets (Koroleva et al., 2021). The increasing ROA value shows the bank's effectiveness in gaining profits.

Previous literature findings say that the liquidity ratio factor hurts bank performance when using research at PT Bank Central Asia in the 2017-2021 period (Fazdhil, 2023). In other literature it was found that Bank Size has a positive effect on bank performance, the non-performing loan ratio hurts bank performance, and the loan-to-deposit ratio does not affect bank performance ((Nurfitria et al., 2023). As well as in other literature it was found that operational efficiency, asset quality, and capital adequation ratio had a positive effect on bank performance, and other findings on the average exchange rate and inflation rate hurt bank performance (Bushashe, 2023).

Based on the explanation of the background and phenomena above, research was conducted entitled " The Influence of Bank-Specific, Industry-Specific, and Macroeconomic Factors on Conventional Bank Performance in Indonesia".

METHOD

Population and Sample

This research was conducted within the framework of testing the influence of bank-specific variables, specifically influencing the size of the Indonesian industry and the macroeconomic performance of banks on the Indonesia Stock Exchange (BEI), especially conventional banks. This research aims to test the hypothesis of the influence of Liquidity, Bank Size, Operational Efficiency, Asset Quality, Capital Adequacy, Non-Performing Loans, Loan Deposit Ratio, Asset Share, Average Exchange Rate, and Inflation Rate on the Performance of Conventional Banks in Indonesia.

The data used in this research is panel data, namely mergers originating from cross-sectional and time series data on banking sector companies, especially conventional banks listed on the Indonesia Stock Exchange (BEI) during the period 2019 – 2022. In this research, it consists of 2 (two) variables, namely the independent variable or independent variable and the dependent variable or dependent variable.

Variable Measurement

To make it easier to study this, here are the measurements for each variable, as follows:

a. The dependent variable is a variable that is influenced by one or more independent variables (independent variables). The dependent variable in this research is Bank Performance. The dependent variable is the variable that is affected/which is the result because there is an independent variable. In this research, the dependent variable is bank performance. The bank performance used in this research is data on Return on Assets (ROA), Return on

Equity (ROE), and Net Interest Margin (NIM) of conventional banks on the IDX from 2019 to 2022. Bank performance can be measured using the following calculation formula.:

$$ROA = \frac{\text{Net profit before tax}}{\text{total Assets}}$$

$$ROE = \frac{\text{Net profit before tax}}{\text{Amount Equity}}$$

$$NIM = \frac{\text{(Income interest-expense flowers)}}{\text{Ave. Productive Assets}}$$

b. Independent variable: Liquidity (LIQ) The liquidity data used in this research is liquidity data obtained every year from the company's annual report. Liquidity measurement can be done using the following formula calculation:

$$LIQ = \frac{\text{Amount Deposit}}{\text{Total assets}}$$

Bank Size (SIZE) Bank size data used in this research can be calculated using the natural logarithm of the company's total assets on an annual basis obtained from the company's annual report. Bank size measurement can be done using the following formula calculation:

SIZE = Natural logarithm of Total assets

Operational Efficiency (OE)

Operational efficiency (OE) measures how much goods expenditure is controlled by management (Bushashe, 2023). The OE data used in this research is OE data obtained routinely every year from the company's annual report. Operational Efficiency can be measured using the following formula calculation:

$$OE = \frac{\text{Total Cost (expense)}}{\text{Amount income}}$$

Asset Quality (AQ)

Commercial banks generate income primarily through loans. Portfolio health has a direct impact on bank performance on bank loans, and loan problems are the biggest threat to institutional finance (Patwary & Tasneem, 2019). Possibility of failure to pay reductions Because economic growth generates sufficient electricity sources _ For production and development income (Syed, 2020; Syed & Aidyngul, 2020). The AQ data used in this research is AQ data obtained every year _ from the company's annual report. Measuring Asset Quality can be done using the following formula calculation:

$$AQ = \frac{\text{Allowance loss loan}}{\text{Amount loan}}$$

Capital Adequacy (CA)

The CA data used in this research is CA data obtained separately each year from the company's annual report. Measuring Capital Adequacy can be done using the following formula calculation:

$$CA = \frac{\text{Amount of Capital}}{\text{Total assets}}$$

Non-Performing Loan Ratio (NPLR)

Non-performing loans are the ratio of non-performing loans (which is defined as not being smooth enough, doubtful, or bad) to the total credit disbursed by the bank. The NPLR data used in this research is NPLR data obtained every year from the company's annual report. Measurement of Non-Performing Credit can be done using the following calculation formula:

$$NPL = \frac{\text{Credit Troubled}}{\text{Amount Loan}}$$

Loan Deposit Ratio (LDR)

According to Dendawijaya (2003), the Loan Deposit Ratio (LDR) can be interpreted as a comparison between the amount of credit provided by the bank to the amount of cash received by the bank. The LDR data used in this research is general LDR data obtained every year from the company's annual report. Measurement of Non-Performing Credit can be done using the following calculation formula:

$$LDR = \frac{\text{Total Loans \& Down Payments}}{\text{Deposit Amount}}$$

Asset Share (AS)

The American data used in this research is American data obtained every year from company annual reports. US measurements can be made using the following formula calculation:

$$AS = \frac{\text{Total bank assets}}{\text{Total assets of all banks}}$$

Exchange rate

If a bank has assets or liabilities denominated in another currency that is the base currency, the bank is exposed to foreign currency mark swap risk, which can affect earnings and equity if the underlying currency fluctuates. When these fluctuations occur unexpectedly and unfavorably, they can endanger the bank's profits and resources (Bushashe, 2023). The exchange rate data used in this research is exchange rate data taken from the official exchange rate (Local Currency Units per USD, period average) on the World Bank website (https://data.worldbank.org).

Inflation rate

Inflation is an increase in the prices of goods and services in general, where the goods and services in question are the tree of people's needs or the descendants of the selling power of a country's currency (www.bps.go.id). The inflation data used in this research is Indonesian inflation data from the World Bank website (https://data.worldbank.org).

The research variables above can be presented in Table 2 below

Table 1
Definition Variable Operational

Type Variable	Name Variable	Symbol	Indicator	Measurement	Reference
Depends variable	Bank Performance (BP)	ROA	Return on Assets	Net profit before tax / Total Assets	(Bushashe, 2023)
		DEER	Return Equity	Net profit before tax /Total Equity	(Bushashe, 2023)
		NIM	Net Interest Margin	(Income interest-expense interest)/ Average Productive Assets	(Bushashe, 2023)
Variable Independent	Bank only	LIQ	Liquidity	Total Savings / Total Assets	(Bushashe, 2023)
		SIZE	Bank Size	Natural logarithm of Total assets	(Bushashe, 2023)
		O.E	Efficiency Operational (OE)	Total Costs (expenses) / Total Income	(Bushashe, 2023)
		I	Quality (AQ)	Elimination loss loans / Total loans	(Bushashe, 2023)
		ca	Adequacy (CA)	Amount of Capital/Total Assets	(Bushashe, 2023)
		NPLs	Ratio Credit Troubled	Credit Problems / Total Credit	(Nurfitria et al., 2023)
		LDR	Ratio Loan Against Deposits	Total Loans & Down Payments/Total Deposits	(Nurfitria et al., 2023)
	Special Industry	WE	Division of Assets	Total bank assets / Total assets of all banks	(Bushashe, 2023)
	Macroeconomic factors	AEX	Average exchange rate	Annual average exchange rate	(Bushashe, 2023)
		IR	Inflation rate	Inflation rate (%)	(Bushashe, 2023)

Method Of Collecting Data

The data collection method uses secondary data collection techniques. Secondary data is data obtained indirectly. The data source for this research was obtained from the Indonesian Stock Exchange website (www.idx.co.id) and the websites of all companies that were the

objects of the research. This research data consists of data from banking sector companies listed on the Indonesia Stock Exchange (BEI) for the period 2019 – 2022.

Sampling Method

The sampling method used was a purposive sampling method, where the population sampled in this research met certain company criteria. Several criteria in this research are as follows:

1. Companies that have gone public and are listed on the Indonesia Stock Exchange (BEI) for the 2019 – 2022 period.
2. The company has published annual reports and financial reports, namely from 2019 – 2022, and has not experienced delisting during a certain period.
3. Financial reports in rupiah (Rp).

Data Testing Method

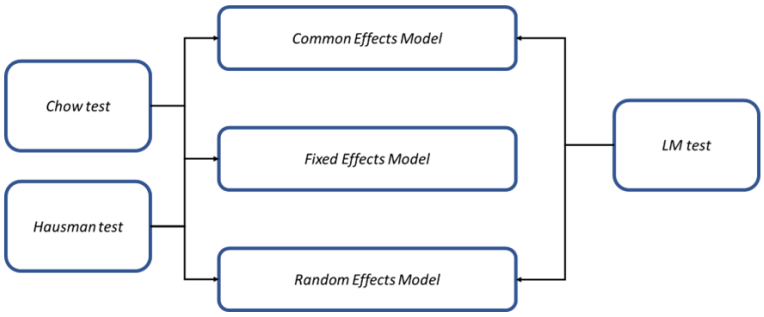
The data analysis method used in this research is the panel data regression method. The panel data models that exist in panel data regression are common effect, fixed effect, and random effect. The available data is then processed and tested using e-views 12 software.

Model Fit Test

In panel data regression analysis, there are three models used, namely the common effect model (Ordinary Least Square (OLS), fixed effect, and random effect.

1. General Effects Model (General Effects Model)
   This technique is the same as performing regression with cross-sectional or time series data. Before carrying out regression, cross-section or time series data must be combined first (data pool). Then the combined data is treated as a single observed unit and used to estimate the model using the OLS method.
2. Fixed Effect Model (Fixed Effect Model)
   The Fixed Effect Model is based on the idea that there are variables that are not all included in the model equation, thus allowing for non-constant intercepts. In other words, this intercept changes for each individual and over time. The Fixed Effects Model is a regression using dummy variables as independent variables so that it can be estimated using what OLS calls Least Square Dummy Variables (LSDV).
3. Effect Model (Random Effect Model)
   In the Random Effect Model, differences between individuals and/or time are reflected/accommodated by past mistakes. This technique also takes into account possible correlated errors throughout the time series and cross-sections. The estimation method used is Generalized Least Square (GLS). The Random Effects Model has the advantage of eliminating heteroscedasticity.

In-Depth Model Selection Process *Time Series*



In the process of selecting the time series inner model, the Chow test is used to determine the regression model that follows the Common Effects Model or Fixed Effects Model. The Hausman test to determine the regression model is to follow the Fixed Effects Model or Random Effects Model. LM (Lagrange Multiplier) test to determine the optimal regression model Common Effect Model or Random Effects Model.

Stage 1 – Chow Test

The test has been completed to compare which model is the best General Effects Model and Fixed Effects Model. The Chow Test results are as follows:

Chow Test results

Chow Test				
Test Effect	**Model**	**Problem.**	**hypothesis**	**Conclusion**
Chi-Square Cross Section	Model 1 (ROA)	0.0000	H1 Accepted	Effect Model Still
	Model 2 (ROE)	0.0000	H1 Accepted	Effect Model Still
	Model 3 (NIM)	0.0000	H1 Accepted	Effect Model Still

Source: *e-views output*

From the table above, on Cross Section F. mark the Problem. with α (0.05: determined at the beginning as the research significance level). Decision-making is as follows:
To determine the correct and good model for interpretation, testing must be carried out in two stages, namely the Chow test and the Hausman test, as follows:

Information	Selected Models
Problem > α	CE
Maybe < α	Fe

The results show that the sign is from Prob. Chi-Square cross-section model 1 is 0.0000 < 0.05, H1 is accepted. It can be concluded that the best model chosen is the Fixed Effects Model. Assess the Problem. Cross-Section Chi-Square model 2 is 0.0000 < 0.05, H1 is accepted. It can be concluded that the best model chosen is the Fixed Effects Model.
Assess the Problem. Cross-Section Chi-Square model 3 is 0.0000 < 0.05, H1 is accepted. It can be concluded that the best model chosen is the Fixed Effects Model.

Stage 2 – Hausman Test

The Hausman Test and Hausman Test were carried out to determine the best model between the Fixed Effects Model and the Random Effects Model. The following are the test results from the Hausman test:

Hausman Test Results

Hausman test				
Test Effect	**Model**	**Problem.**	**hypothesis**	**Conclusion**
Random Cross Section	Model 1 (ROA)	1,0000	H1 Rejected	Random Effects Model
	Model 2 (ROE)	1,0000	H1 Rejected	Random Effects Model
	Model 3 (NIM)	1,0000	H1 Rejected	Random Effects Model

Source: e-view output

The results show that the sign is from Prob. Random Cross-Section model 1 is 1.0000 > 0.05, H1 is rejected. It can be concluded that the best model chosen is the Random Effects Model.

Assess the Problem. Random Cross-Section model 2 is 1.0000 > 0.05, H1 is rejected. It can be concluded that the best model chosen is the Random Effects Model.

Assess the Problem. Random Cross-Section model 3 is 1.0000 > 0.05, H1 is rejected. It can be concluded that the best model chosen is the Random Effects Model.

Stage 3 – Lagrange Multiplier Test

The Lagrange Multiplier Test or LM Test is carried out to determine the best model between the Common Effects Model and the Random Effects Model. The following are the test results from the Hausman test:

Lagrange Multiplier Test results

LM test				
Test Effect	**Model**	**Problem.**	**hypothesis**	**Conclusion**
Breusch-Pagan cross-section	Model 1 (ROA)	0.0024	H1 Accepted	Random Effects Model
	Model 2 (ROE)	0.0013	H1 Accepted	Random Effects Model
	Model 3 (NIM)	0.0000	H1 Accepted	Random Effects Model

Source: e-view output

The results show that the sign is from Prob. Random Cross-Section model 1 is 0.0024 < 0.05, H1 is accepted. It can be concluded that the best model chosen is the Random Effects Model.

Assess the Problem. Random Cross-Section model 2 is 0.0013 < 0.05, H1 is accepted. It can be concluded that the best model chosen is the Random Effects Model.

Assess the Problem. Random Cross-Section model 3 is 0.0000 < 0.05, H1 is accepted. It can be concluded that the best model chosen is the Random Effects Model.

Panel Regression Model Conclusion

Based on the tests above, the Random Model Effect Model has been selected 2 (two) times, namely in the Hausman Test and Lagrange Multiplier Test, while for the Selected Chow Test Model Fixed Effects. Thus it can be concluded that of the three models (CE, FE, and RE), the

RE model (Random Effects Model) is better at interpreting panel data regression to answer objective research.

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Stage 4 – Kindness Test Suitability (Adjusted R2)

The goodness of fit testing is carried out to find out how much the independent variable can explain the behavior of the dependent variable. This test can be seen from the large customized r-squared value in the regression model. If the adjusted r-square is close to 1, it means that the independent variables in the model can explain the dependent variable. The basis for decision-making is:

A. If the Adjusted R2 value is close to 1, then the results show a very strong relationship between the independent variable and the dependent variable.

B. If the R-value is adjusted to 2 close to 0, then the results are very weak, indicating a relationship between the independent variable and the dependent variable.

The following are the test results with the goodness of fit test (adjusted R 2 test):

***Goodness of Fit* Test Results (Adjusted R $^{2)}$**

Coefficient determinant		
testing	***Model***	***Mark***
Customized R-Square	Model 1 (ROA)	0.6603
	Model 2 (ROE)	0.5519
	Model 3 (NIM)	0.3527

Source: e-view output

Based on the test results above, the _Adjusted R-squared value in model 1 is 0.6603 or 66.03%. Shows that all independent variables can explain the dependent variable by 66.03%, and the remaining 33.97% is explained by other variables outside the model.

Based on the test results above, the _Adjusted R-squared value in model 2 is 0.5519 or 55.19%. Shows that all independent variables can explain the dependent variable by 55.19%, and the remaining 44.81% is explained by other variables outside the model.

Based on the test results above, the _Adjusted R-squared value in model 3 is 0.3527 or 35.27%. Shows that all independent variables can explain the dependent variable by 35.27%, and the remaining 64.73% is explained by other variables outside the model.

Stage 5 – Simultaneous Test (Test F)

The simultaneous test often known as the F test shows that all the independent variables targeted in the model have a simultaneous influence on the dependent variable. The hypothesis to be tested is as follows:

Ha: $\beta1 = \beta2 = \beta3 = \beta4 = 0$ There are no independent variables (Liquidity, Bank Size, Operational Efficiency, Asset Quality, Capital Adequacy, Non-Performing Loans, Loan Deposit Ratio, Asset Distribution, Average Exchange Rate, InflationRate) on dependent variable (bank performance).

Ho: $\beta1 \neq \beta2 \neq \beta3 \neq \beta4 \neq 0$ There are independent variables (Liquidity, Bank Size, Operational Efficiency, Asset Quality, Capital Adequacy, Problem Loans, Loan Deposit Ratio, Asset Distribution, Average Exchange Rate, InflationRate) to the variable dependent (bank performance).

Decision-making criteria

a. If the probability F < α 0.05 then H0 is rejected. This means that from these results simultaneously the independent variables do not have their influence on the dependent variable, so the regression model is not suitable for use.
b. If the probability F > α 0.05, then H0 is accepted. This means that from these results the independent variable simultaneously influences the dependent variable, so the regression model is suitable for use. The results of the F test on e-views are as follows

F test results

Simultaneous Test (F-Test)				
Test Effect	***Model***	***Problem.***	***hypothesis***	***Conclusion***
Problem. (F-Statistics)	Model 1 (ROA)	0.0000	Ha Accepted	Influential Significant
	Model 2 (ROE)	0.0000	Ha Accepted	Influential Significant
	Model 3 (NIM)	0.0000	Ha Accepted	Influential Significant

Source: e-view output

Based on the test results, it shows that the Prob (F-Statistic) value in model 1 is 0.0000 < 0.05, Ha Accepted. It can be concluded that simultaneously all independent variables have a significant effect on the dependent variable.

Based on the test results, it shows that the Prob (F-Statistic) value in model 2 is 0.0000 < 0.05, Ha Accepted. It can be concluded that simultaneously all independent variables have a significant effect on the dependent variable.

Based on the test results, it shows that the Prob (F-Statistic) value in model 3 is 0.0000 < 0.05, Ha Accepted. It can be concluded that simultaneously all independent variables have a significant effect on the dependent variable.

Data Analysis Method

With descriptive statistics, the data collected is analyzed by calculating averages and percentages, so that it can describe what is meant by average (mean), maximum value, minimum value, and standard deviation of the data.

Multiple Regression Analysis To analyze the data to be processed, the hypothesis test used is a compound/multiple regression analysis model (Multiple Linear Regression) which uses a projection of the regression equation. Hypothesis testing is useful for examining or testing the regression coefficients obtained _ significant objectives _ knowing the influence of the dependent variable on bank performance and independent variables (Liquidity, Bank Size, Operational Efficiency, Asset Quality, Capital Adequacy, Problem Loans, Loan to Deposit Ratio, Asset Distribution, Value Average Exchange Rate, Inflation Rate) for the period 2020-2022. The multiple regression model is written as follows:

$$ROAit = \alpha + \beta\ 1\ (LIQ)it + \beta\ 2\ (SIZE)it + \beta\ 3\ (OE)it + \beta\ 4\ (AQ)it + \beta 5\ (CA)it + \beta\ 6\ (NPL)it + \beta\ 7\ (LDR))it + \beta\ 8\ (AS)it + \beta\ 9\ (AEX)it + \beta\ 10\ (IR)\ it + \varepsilon it$$

$$ROEit = \alpha + \beta\ 1\ (LIQ)it + \beta\ 2\ (SIZE)it + \beta\ 3\ (OE)it + \beta\ 4\ (AQ)it + \beta 5\ (CA)it + \beta\ 6\ (NPL)it + \beta\ 7\ (LDR))it + \beta\ 8\ (AS)it + \beta\ 9\ (AEX)it + \beta\ 10\ (IR)\ it + \varepsilon it$$

$$NIMit = \alpha + \beta\ 1\ (LIQ)it + \beta\ 2\ (SIZE)it + \beta\ 3\ (OE)it + \beta\ 4\ (AQ)it + \beta\ 5\ (CA)it + \beta\ 6\ (NPL)it + \beta\ 7\ (LDR))it + \beta\ 8\ (AS)it + \beta\ 9\ (AEX)it + \beta\ 10\ (IR)\ it + \varepsilon it$$

Description:

ROA = *Return on Assets*
KIJANG = *Return Equity*
NIM = *Net Interest Margin*
LIQ = *Liquidity*
SIZE = *Bank Size*
OE = *Efficiency operational*
AQ = *Asset Quality*
CA = *Capital Adequacy*
NPL = *Problematic credit*
LDR = *Ratio Loan Against Deposits*
AS = *Division of Assets*
AEX = *Average Exchange Rate*
IR = *Inflation Rate*
α = Constant
β1 = Constant
β 1 (LIQ)it = *Liquidity* Coefficient
β 2 (SIZE) = *Company Size* Coefficient
β 3 (OE)it = *Efficiency* Coefficient *operational*
β 4 (AQ)it = *Liquid Asset Replacement* Coefficient
β 5 (CA)it = *Capital Adequacy* Coefficient
β 6 (NPL) = *Credit* Coefficient *problematic*
β 7 (LDR) = *Ratio* Coefficient *Deposit Loan*
β 8 (AS)it = *Asset Sharing* Coefficient
β 9 (AEX) = *Value* Coefficient *swap*
β 10 (IR) = *Inflation* Coefficient
εit = Error

RESULTS AND DISCUSSION

The following are the results of descriptive statistical analysis of the data used in the research:

Table 8. Analysis Results Statistics Descriptive

Variables	Mean	Maximum	Minimum	Std. Dev.
Return on Assets	17.92588	21.41268	15.12960	1.660762
Return on Equity	0.864988	2.362665	0.426669	0.287267
Net Interest Margin	0.039603	0.216785	0.000141	0.032664
Liquidity	0.178115	0.549871	0.067866	0.066963
Bank Size	0.034168	0.222700	1.10E-06	0.028424
Operational Efficiency	0.833950	1.791314	0.100159	0.252819
Asset Quality	0.028571	0.216578	0.000495	0.052062
Capital Adequacy	14471.50	14849.00	14147.00	268.7346

Non-Performing Loans	2.675000	4.200000	1.600000	1.026952
Loan to Deposit Ratio	0.815597	1.791314	0.100159	0.231655
Asset Share	0.029256	0.216578	0.000495	0.052671
Average Exchange Rate	14471.50	14849.00	14147.00	268.7346
Inflation Rate	2.675000	4.200000	1.600000	1.026952

Source: *e-views output*

Based on Table 10 above, it can be explained as follows:

a. The average value of the Return on Assets variable is 17.92588 with a standard deviation of 1.660762.
b. The average value of the Return on Assets variable is 0.864988 with a standard deviation of 0.287267.
c. The average result of the Net Interest Margin variable is 0.039603 with a standard deviation of 0.032664.
d. The average result of the Liquidity variable is 0.178115 with a standard deviation of 0.066963.
e. The average result of the Bank Size variable is 0.034168 with a standard deviation of 0.028424.
f. The average result of the Operational Efficiency variable is 0.833950 with a standard deviation of 0.252819.
g. The average result of the Asset Quality variable is 0.028571 with a standard deviation of 0.052062.
h. The average result of the Capital Adequacy variable is 14471.50 with a standard deviation of 268.7346.
i. The average result of the Non-Performing Loan variable is 2.675000 with a standard deviation of 1.026952.
j. The average result of the Loan to Deposit Ratio variable is 0.815597 with a standard deviation of 0.231655.
k. The average result of the Asset Share variable is 0.029256 with a standard deviation of 0.052671.
l. The average result of the Average Exchange Rate variable is 14471.50 with a standard deviation of 268.7346.
m. The average result of the Inflation Rate variable is 2.675000 with a standard deviation of 1.026952.

Analysis Multiple Linear Regression

Data analysis in this research uses multiple regression tests on panel data. In research that uses panel data, three models can be used, namely the common effect model, fixed effect model, and random effect model. Before carrying out the regression test, the regression model that will be used is tested. The results of the regression model test in this research were using the Random Effects Model. The multiple regression test aims to test whether or not there is

an influence of independent variables (Liquidity, Bank Size, Operational Efficiency, Asset Quality, Capital Adequacy, Non-Performing Loan, Loan to loan-to-deposit ratio, Asset Share, Average exchange rate, Inflation Rate) on the dependent variable namely bank performance.
Equality Regression Model 1:

$$ROAit = \alpha + \beta_1 (LIQ)it + \beta_2 (SIZE)it + \beta_3 (OE)it + \beta_4 (AQ)it + \beta_5 (CA)it + \beta_6 (NPL)it + \beta_7 (LDR)it + \beta_8 (AS)it + \beta_9 (AEX)it + \beta_{10} (IR)it + \varepsilon it$$

Equality Regression Model 2:

$$ROEit = \alpha + \beta_1 (LIQ)it + \beta_2 (SIZE)it + \beta_3 (OE)it + \beta_4 (AQ)it + \beta_5 (CA)it + \beta_6 (NPL)it + \beta_7 (LDR)it + \beta_8 (AS)it + \beta_9 (AEX)it + \beta_{10} (IR)it + \varepsilon it$$

Equality Regression Model 3:

$$NIMit = \alpha + \beta_1 (LIQ)it + \beta_2 (SIZE)it + \beta_3 (OE)it + \beta_4 (AQ)it + \beta_5 (CA)it + \beta_6 (NPL)it + \beta_7 (LDR)it + \beta_8 (AS)it + \beta_9 (AEX)it + \beta_{10} (IR)it + \varepsilon it$$

Hypothesis Test (T-Test)

This test was carried out based on the results of the selected test, namely the Random Effect Model. The results of the hypothesis test studied are:

Table 9. Model 1 Random Effects Model

Model 1 Random Effects Model Variable: Return on Assets				
Variables	**Coefficient**	**Prob.**	**Hypothesis**	**Conclusion**
C	0.087500	0.1226		
Liquidity	0.003670	0.7588	Ha Rejected	No Effect
Bank Size	0.002195	0.0200	Ha Accepted	Influential Significant
Operational Efficiency	-0.052246	0.0000	Ha Accepted	Influential Significant
Asset Quality	-0.104721	0.0028	Ha Accepted	Influential Significant
Capital Adequacy	0.033631	0.0426	Ha Accepted	Influential Significant
Non-Performing Loans	-0.125343	0.0023	Ha Accepted	Influential Significant
Loan to Deposit Ratio	0.001065	0.8179	Ha Rejected	No Effect
Asset Share	-0.009989	0.7038	Ha Rejected	No Effect
Average Exchange Rate	-5.20E-06	0.1609	Ha Rejected	No Effect
Inflation Rate	-0.000302	0.7536	Ha Rejected	No Effect

Source: *e-views output*

1. Liquidity has a significant effect on Return on Assets
   The Liquidity variable has a prob value. equal to 0.7588 > 0.05, then Liquidity does not affect Return on Assets. Ha rejected.
2. Bank Size has a significant effect on Return on Assets

The Bank Size variable has a prob value. equal to 0.0200 < 0.05, then Bank Size has a significant effect on Return on Assets. Ha accepted

3. Operational Efficiency has a significant effect on Return on Assets
   The Operational Efficiency variable has a prob value. equal to 0.0000 < 0.05, then Operational Efficiency has a significant effect on Return on Assets. Ha accepted.
4. Asset Quality has a significant effect on Return on Assets
   The Asset Quality variable has a prob value. equal to 0.0028 < 0.05, then Asset Quality has a significant effect on Return on Assets. Ha accepted.
5. Capital Adequacy has a significant effect on Return on Assets
   The Capital Adequacy variable has a prob value. equal to 0.0426 < 0.05, then Capital Adequacy has a significant effect on Return on Assets. Ha accepted.
6. Non-performing loans have a significant effect on Return on Assets
   The Non-Performing Loan variable has a prob value. equal to 0.0023 < 0.05, then Non-Performing Loans have a significant effect on Return on Assets. Ha accepted.
7. Loan to Deposit Ratio has a significant effect on Return on Assets
   Variable Loan to Deposit Ratio has a prob value. is 0.8179 > 0.05, then the Loan to Deposit Ratio does not affect Return on Assets. Ha rejected.
8. Asset Share has a significant effect on Return on Assets
   Variable Asset Share has a prob value. equal to 0.7038 > 0.05, then Asset Share does not affect Return on Assets. Ha rejected.
9. Average Exchange Rate has a significant effect on Return on Assets
   The Average Exchange Rate variable has a prob value. is 0.1609 > 0.05, then the Average Exchange Rate does not affect the Return on Assets. Ha rejected.
10. The Inflation Rate has a significant effect on the Return on Assets
    Variable Inflation Rate has a prob value. is 0.7536 > 0.05, then the Inflation Rate does not affect Return on Assets. Ha rejected.

Table 10. Model 2 Random Effects Model

Model 2 **Random Effects Model** **Variable: Return on Equity**				
Variables	**Coefficient**	**Prob.**	**Hypothesis**	**Conclusion**
C	0.425016	0.3092		
Liquidity	0.127199	0.1953	Ha Rejected	No Effect
Bank Size	0.022492	0.0062	Ha Accepted	Influential Significant
Operational Efficiency	-0.242943	0.0000	Ha Accepted	Influential Significant
Asset Quality	-0.257891	0.3518	Ha Rejected	No Effect
Capital Adequacy	0.354919	0.0108	Ha Accepted	Influential Significant
Non-Performing Loans	-0.794328	0.0152	Ha Accepted	Influential Significant
Loan to Deposit Ratio	-0.033460	0.3779	Ha Rejected	No Effect
Asset Share	-0.214899	0.3658	Ha Rejected	No Effect
Average Exchange Rate	-4.67E-05	0.0850	Ha Rejected	No Effect
Inflation Rate	0.003752	0.5933	Ha Rejected	No Effect

Source: *e-views output*

1. Liquidity has a significant effect on Return on Equity
   Variable Liquidity has a prob value. equal to 0.1953 > 0.05, then Liquidity does not affect Return on Equity. Ha rejected.
2. Bank Size has a significant effect on Return on Equity
   The Bank Size variable has a prob value. equal to 0.0062 < 0.05, then Bank Size has a significant effect on Return on Equity. Ha accepted.
3. Operational Efficiency has a significant effect on Return on Equity
   The Operational Efficiency variable has a prob value. equal to 0.0000 < 0.05, then Operational Efficiency has a significant effect on Return on Equity. Ha accepted.
4. Asset Quality has a significant effect on Return on Equity
   The Asset Quality variable has a prob value. equal to 0.3518 > 0.05, then Asset Quality does not affect Return on Equity. Ha rejected.
5. Capital Adequacy has a significant effect on Return on Equity
   The Capital Adequacy variable has a prob value. equal to 0.0108 < 0.05, then Capital Adequacy has a significant effect on Return on Equity. Ha accepted.
6. Non-performing loans have a significant effect on Return on Equity
   Variable Non-Performing Loan has a prob value. equal to 0.0152 < 0.05, then Non-Performing Loans have a significant effect on Return on Equity. Ha accepted.
7. Loan to Deposit Ratio has a significant effect on Return on Equity
   Variable Loan to Deposit Ratio has a prob value. is 0.3779 > 0.05, then the Loan to Deposit Ratio does not affect Return on Equity. Ha rejected.
8. Asset Share has a significant effect on Return on Equity
   Variable Asset Share has a prob value. equal to 0.3658 > 0.05, then Asset Share does not affect Return on Equity. Ha rejected.
9. Average Exchange Rate has a significant effect on Return on Equity
   The Variable Average Exchange Rate has a prob value. is 0.0850 > 0.05, then the Average Exchange Rate does not affect Return on Equity. Ha rejected.
10. The Inflation Rate has a significant effect on the Return on Equity
    Variable Inflation Rate has a prob value. is 0.5933 > 0.05, then the Inflation Rate does not affect Return on Equity. Ha rejected.

Table 11. Model 3 Random Effects Model

Model 3 **Random Effects Model** **Variable: Net Interest Margin**				
Variables	**Coefficient**	**Prob.**	**Hypothesis**	**Conclusion**
C	0.054427	0.3317		
Liquidity	0.017225	0.1481	Ha Rejected	No Effect
Bank Size	0.002971	0.0017	Ha Accepted	Influential Significant
Operational Efficiency	-0.018711	0.0000	Ha Accepted	Influential Significant
Asset Quality	0.048446	0.1580	Ha Rejected	No Effect

Model 3 Random Effects Model Variable: Net Interest Margin				
Variables	**Coefficient**	**Prob.**	**Hypothesis**	**Conclusion**
Capital Adequacy	0.086047	0.0000	Ha Accepted	Influential Significant
Non-Performing Loans	-0.181413	0.0000	Ha Accepted	Influential Significant
Loan to Deposit Ratio	0.013828	0.0031	Ha Accepted	Influential Significant
Asset Share	-0.021561	0.4087	Ha Rejected	No Effect
Average Exchange Rate	-6.57E-06	0.0750	Ha Rejected	No Effect
Inflation Rate	0.002027	0.0353	Ha Accepted	Influential Significant

Source: *e-views output*

1. Liquidity has a significant effect on Net Interest Margin
   Variable Liquidity has a prob value. equal to 0.1481 > 0.05, then Liquidity does not affect Net Interest Margin. Ha rejected.
2. Bank Size has a significant effect on Net Interest Margin
   The Bank Size variable has a prob value. equal to 0.0017 < 0.05, then Bank Size has a significant effect on Net Interest Margin. Ha accepted.
3. Operational Efficiency has a significant effect on Net Interest Margin
   The Operational Efficiency variable has a prob value. equal to 0.0000 < 0.05, then Operational Efficiency has a significant effect on Net Interest Margin. Ha accepted.
4. Asset Quality has a significant effect on Net Interest Margin
   The Asset Quality variable has a prob value. equal to 0.1580 > 0.05, then Asset Quality does not affect Net Interest Margin. Ha rejected.
5. Capital Adequacy has a significant effect on Net Interest Margin
   The Capital Adequacy variable has a prob value. equal to 0.0000 < 0.05, then Capital Adequacy has a significant effect on Net Interest Margin. Ha accepted.
6. Non-performing loans have a significant effect on Net Interest Margin
   Variable Non-Performing Loan has a prob value. equal to 0.0000 < 0.05, then Non-Performing Loans have a significant effect on Net Interest Margin. Ha accepted.
7. Loan to Deposit Ratio has a significant effect on Net Interest Margin
   Variable Loan to Deposit Ratio has a prob value. equal to 0.0031 < 0.05, then the Loan to Deposit Ratio has a significant effect on the Net Interest Margin. Ha accepted.
8. Asset Share has a significant effect on Net Interest Margin
   Variable Asset Share has a prob value. is 0.4087 > 0.05, then Asset Share does not affect Net Interest Margin. Ha rejected.
9. Average Exchange Rate has a significant effect on Net Interest Margin
   The Variable Average Exchange Rate has a prob value. is 0.0750 > 0.05, then the Average Exchange Rate does not affect the Net Interest Margin. Ha rejected.
10. Inflation Rate has a significant effect on Net Interest Margin
    Variable Inflation Rate has a prob value. is 0.0353 < 0.05, then the Inflation Rate has a significant effect on the Net Interest Margin. Ha accepted.

Table 12. F Test Results

Simultaneous Test (F-Test)				
Effects Test	**Model**	**Prob.**	**Hypothesis**	**Conclusion**
Prob. (F-Statistics)	Model 1 (ROA)	0.0000	Ha Accepted	Influential Significant
	Model 2 (ROE)	0.0000	Ha Accepted	Influential Significant
	Model 3 (NIM)	0.0000	Ha Accepted	Influential Significant

Source: *e-views output*

1. Based on the test results, it shows that the value of Prob (F-Statistic) in model 1 is 0.0000 < 0.05, Ha Accepted. It can be concluded that simultaneously all independent variables have a significant effect on the dependent variable.
2. Based on the test results, it shows that the value of Prob (F-Statistic) in model 2 is 0.0000 < 0.05, Ha Accepted. It can be concluded that simultaneously all independent variables have a significant effect on the dependent variable.
3. Based on the test results, it shows that the value of Prob (F-Statistic) in model 3 is 0.0000 < 0.05, Ha Accepted. It can be concluded that simultaneously all independent variables have a significant effect on the dependent variable.

Based on the results of hypothesis testing in this research, it can be explained that:

H1: There is an influence between bank liquidity on bank performance

Based on research, liquidity does not affect bank performance as measured by Return on Assets, Return on Equity, and Net Interest Margin, so Ha is rejected. This is by research conducted by (Fazdhil, 2023) which investigated the influence of liquidity on bank performance, showing results that liquidity did not affect bank performance (ROA, ROE, and NIM).

H2: There is an influence between bank size on bank performance

Based on research, bank size has a significant effect on bank performance as measured by Return on Assets, Return on Equity, and Net Interest Margin, so Ha is accepted. The regression coefficient is positive indicating that the influence of Bank Size on bank performance is positive. The larger the size of the bank as measured by the value of the company's assets, the greater the resulting profitability, and the bank's performance will increase. This is by research conducted by (Nurfitria et al., 2023) and (Bushashe, 2023) which investigated the influence of bank size on banking performance and showed the results that bank size had a significant effect on bank performance (ROA, ROE, and NIM).

H3: There is an influence between operational efficiency on bank performance

Based on research, operational efficiency has a significant effect on bank performance as measured by Return on Assets, Return on Equity, and Net Interest Margin, so Ha is accepted. A negative regression coefficient indicates that the influence of operational efficiency on bank performance is negative. The more efficient the operational expenses incurred by the bank, the greater the resulting profitability, and the bank's performance will increase. Operational costs incurred by the company can be covered by the income generated by the company. This is by research conducted by Bushashe, 2023 which investigated the influence of operational

efficiency on banking performance and showed the results that operational efficiency had a significant effect on bank performance (ROA, ROE, and NIM).

H4: There is an influence between asset quality and bank performance

Based on research, asset quality has a significant effect on bank performance as measured by Return on Assets, so Ha is accepted. A negative regression coefficient indicates that the influence of asset quality on bank performance is negative. This is by research conducted by (Bushashe, 2023) and (Al Zaidanin, 2020) who examined the influence of asset quality on bank performance which shows that asset quality has a significant effect on bank performance (ROA).

On the other hand, asset quality does not affect bank performance as measured by return on equity and Net Interest Margin, so Ha is rejected. This is contrary to research conducted by Bushashe, 2023 which shows that asset quality has a significant effect on bank performance (ROE and NIM).

H5: There is an influence between the capital adequacy ratio on bank performance

Based on research, the Capital Adequacy ratio has a significant effect on bank performance as measured by Return on Assets, Return on Equity, and Net Interest Margin, so Ha is accepted. The regression coefficient is positive indicating that the influence of the Capital Adequacy ratio on bank performance is positive. The greater the Capital Adequacy ratio value of a bank, the greater the resulting profitability, and the bank's performance will increase. This is by research conducted by (Bushashe, 2023) who examined the influence of the Capital Adequacy ratio on bank performance and showed that the Capital Adequacy ratio had a significant effect on bank performance (ROA, ROE, and NIM).

Based on research, the Non-Performing Loan Ratio has a significant effect on bank performance as measured by Return on Assets, Return on Equity, and Net Interest Margin, so Ha is accepted. The negative regression coefficient indicates that the influence of the Non-Performing Loan Ratio on bank performance is negative. This shows that the higher the Non-Performing Loan Ratio value will limit or reduce the bank's profitability, conversely, if the bank's Non-Performing Loan Ratio decreases, the bank's profit growth will increase so that the bank's performance will improve.

This is by research conducted by (Nurfitria et al., 2023) who examined the influence of the Non-Performing Loan Ratio on bank performance which showed that the Non-Performing Loan Ratio had a significant negative effect on bank performance (ROA and ROE).

H7: There is an influence between the Loan Deposit Ratio on bank performance

Based on research, the Loan Deposit Ratio does not affect bank performance as measured by Return on Assets and Return on Equity so Ha is rejected. This supports research conducted by (Nurfitria et al., 2023) which investigated the relationship between credit risk management, one of which is measured by LDR, and banking performance in Indonesia, which showed the results that LDR did not affect bank performance (ROA and ROE).

However, on the contrary, the Loan Deposit Ratio has a significant effect on bank performance as measured by the Net Interest Margin so Ha is accepted. The regression coefficient is positive indicating that the influence of the Loan Deposit Ratio on bank performance (NIM) is positive. This is by research conducted by (Abbas et al., 2019) which examined the influence of bank capital, bank liquidity, and credit risk on banking profitability and showed the results that LDR had a significant positive effect on bank profitability (NIM).

H8: There is an influence between Asset Shares on bank performance

Based on research, Asset Share does not affect bank performance as measured by Return on Assets, Return on Equity, and Net Interest Margin, so Ha is rejected.

This is by research conducted by (Bushashe, 2023) which investigated the factors that influence bank performance in Ethiopia and showed results that Asset Share did not affect bank performance (ROA, ROE, and NIM).

H9: There is an influence between the average exchange rate on bank performance

Based on research, the Average Exchange Rate does not affect bank performance as measured by Return on Assets, Return on Equity, and Net Interest Margin, so Ha is rejected.

This is by research conducted by (Almaqtari et al., 2019) which investigated the factors that influence bank profitability in India and showed the results that the Average Exchange Rate did not affect bank performance. Meanwhile (Bushashe, 2023) who investigated the factors that influence bank performance in Ethiopia showed the results that the Average Exchange Rate had a significant negative effect on bank performance (ROA, ROE, and NIM).

H10: There is an influence between the inflation rate on bank performance

Based on research, the Inflation Rate does not affect bank performance as measured by Return on Assets and Return on Equity, so Ha is rejected. However, on the contrary, the Inflation Rate has a significant effect on bank performance as measured by the Net Interest Margin, so Ha is accepted. This supports research conducted by (Bushashe, 2023) and (Batsinda & and Shukla, 2019) which investigated how the Inflation Rate influences bank performance.

CONCLUSION

The research findings have shed light on the impact of various independent variables, including Liquidity, Bank Size, Operational Efficiency, Asset Quality, CAR, NPL, LDR, Asset Share, Average exchange rate, and Inflation Rate, on the dependent variables of bank performance, specifically measured through Return on Assets (ROA), Return on Equity (ROE), and Net Interest Margin (NIM). The conclusions drawn from this analysis reveal several key insights. Firstly, Liquidity was found not to have a significant influence on ROA, ROE, and NIM. Secondly, Bank Size emerged as a significant factor in determining bank performance across all three measures. Thirdly, Operational Efficiency showed a significant impact on ROA, ROE, and NIM. Asset Quality was found to significantly affect ROA, while it did not influence ROE and NIM. Capital Adequacy Ratio (CAR) exhibited a significant effect on all performance measures. Non-performing loans (NPLs) were also found to be influential on all three measures. However, the Loan-to-Deposit Ratio (LDR) did not affect ROA and ROE but did significantly influence NIM. Asset Share, Average Exchange Rate, and Inflation Rate showed no significant influence on any of the performance measures. Nevertheless, this research has its limitations, as it solely focuses on specific bank-related, industry-specific, and macroeconomic variables within the conventional banking sector from 2019 to 2022. To enhance future research, it is suggested that additional independent variables, such as managerial ownership, be considered. Moreover, extending the study to include Islamic banking and increasing the observation duration could yield more comprehensive and accurate results.

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