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Influence of Credit Risk Management and Specific Bank Factors on Financial Performance in Publicly Listed Banks

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Abstract

This research is motivated by financial problems which are a period of conflict in the banking or financial sector. Among all the world's continents, Asia is the most crucial continent and contributes 60% of world growth but faces the problem of high non-performing loans (NPL). As is known, a high NPL ratio will weaken the country's economy or financial position. Therefore, the research was conducted in Indonesia. Two credit risk systems are used in this research: NPL and capital adequacy ratio (CAR). Apart from that, this research also includes bank-specific factors to improve financial performance. This research analyzes the relationship between credit risk, bank-specific factors, and FP. The data analysis method used in this research is a quantitative data analysis method, this research is panel data regression using Eviews software. Research results related to NPL (Non-Performing Loans) have no effect on financial performance, Research related to the capital adequacy ratio (CAR) which has no effect on financial performance, Research shows that the cost efficiency ratio (CER) has no effect on financial performance, Research shows that interest rates average loan interest (ALR) has an effect on financial performance, and research shows that the liquidity ratio (LR) has a significant effect on financial performance. The results of this research can help to improve financial performance by paying attention to credit risk management, taking appropriate techniques efficiently in providing loans and looking at liquidity position as a factor.

Introduction

Banks are the main catalyst that circulates money throughout the economy, and are the heart of any financial system. With the rapid changes occurring throughout the world, as well as in the Indonesian economy, it is very important for the general public to know all the relevant financial facts. Banks that go public meet most individuals' financial needs, whether they are investors, customers, or business people. Despite the fact that non-banking financial organizations exist in the economy, they mostly serve large multinational companies as well as private clients. Banks going public provide financing to the general public as well as small and medium businesses (Maas et al., 2021; Nyanga & Zirima, 2020). The financial sector has been hit from all sides of the economy in recent years, as can be seen from its performance. The situation in the banking industry has deteriorated to the point where the Indonesian government has had to step in to compensate public and private sector banks for their losses. Depository institutions in the world carry out important activities to create financial change and economic progress by mobilizing monetary resources in various regions. Banks that go public play an intermediary role by collecting excessive amounts from savers and issuing loans to borrowers (Siahaan, 2020). In return, banks can earn high interest rates. Banks try to improve financial performance (FP) by distributing credit while carrying out their intermediation role; banks have a high opportunity to face credit risk. The banking industry in the country largely

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collapsed due to fairly high credit risks (Naili & Lahrichi, 2022). Sometimes, this leads to the failure of the entire financial system. Credit risk can arise when a borrower is unable to meet its obligations regarding future cash flows. FP of commercial banks is influenced by two factors: one external and the other internal. Bank-specific factors are internal and capable of controlling general bank factors (Asyrafi & Lestari, 2022).

The creation of bank credit is considered the primary means by which financial intermediaries or banks generate profits. However, there is always an accompanying risk that when measures are relaxed (all and sundry) customers are provided with loan facilities without the necessary security measures to recover obligations. Credit risk management is a strategy used by banks around the world to protect bank balance sheets and deposit savings. A prominent case of credit risk exposure to the financial system in Indonesia. The financial problems mentioned above are a period of conflict in the banking or financial sector. Among all the world's continents, Asia is the most crucial continent and contributes 60% of world growth but faces the problem of high non-performing loans (NPL) (Msomi, 2020). As is known, a high NPL ratio will weaken the country's economy or financial position. The Financial Services Authority (OJK) reported that banking credit increased 11.35% in December 2022 compared to the previous year. Thus, the value of bank loans at the end of 2022, calculated from OJK data as of December 2021, reached around IDR 6.42 trillion. The non-performing loan (NPL) ratio is 2.44% of all loans in December 2022. This means that the NPL value is IDR 156.7 trillion. Both in value and proportion, banking bad loans are at their lowest level since the start of the Covid-19 pandemic at the end of 2022, as can be seen in the graph. The value of bad loans from Indonesian banks reached IDR 187.38 trillion in August 2021, accounting for 3.35 percent of the total loans taken.

The growth of non-performing loans in August 2021 was hampered by restrictions on social activities related to the pandemic which made it difficult for business actors, including micro businesses and SMEs. Then, as the spread of Covid-19 subsides, in 2022 the government will begin to relax restrictions on community activities so that businesses continue to run and the economy gradually recovers. At the start of the pandemic, the economy slumped to 2.07% in 2020. The domestic economy then grew by 3.7% in 2021 and continued to recover until growth reached 5.31% in 2022.

This worrying NPL ratio has an impact on increasingly depressed financial markets, unemployment and a slowdown in the banking intermediation process. World Bank statistics in various regions show that NPLs occur in almost all regions. Therefore, the research was conducted in Indonesia. Two credit risk systems are used in this research: NPL and capital adequacy ratio (CAR). Apart from that, this research also includes bank-specific factors to improve financial performance. Various studies were conducted to overcome this problem, but the literature shows that the results of these studies are inconclusive and also ignore the most important regions of Indonesia. Therefore, this research aims to analyze credit risk and bank-specific factors that influence financial performance in commercial banks. The aim of this research is to analyze how NPL will affect financial performance.

Methods

In this research the author uses a quantitative approach. Mohajan (2020) states that the quantitative approach is data measurement that uses quantitative and objective statistics through scientific calculations derived from panel data samples of publicly traded banks to determine the frequency and percentage of data.

According to Mohajan (2020) that in a quantitative approach this research will be determined beforehand, analyzing statistical data and interpreting statistical data. Researchers who use a

ISSN 2721-0960 (Print), ISSN 2721-0847 (online)

quantitative approach will test a theory by detailing the hypotheses in this research. The approach that will be used in this research is a quantitative analysis approach based on statistical data. A quantitative approach can answer the problems in this research. This research requires careful measurement of the variables of the object under study to produce conclusions that can be made regardless of all conditions of time, place and situation.

Population and Sample

The population in the study is the area studied by the researcher. According to Sugiyono (2011) that population is a generalized area consisting of objects or subjects that have certain qualities and characteristics that are determined by researchers to be studied and then draw conclusions. This opinion became the author's reference for determining the research population. The population that will be used for research is all types of banks that go public in Indonesia.

The sample in research is part of the population that the researcher wants to study. According to Sugiyono (2011) that the sample is part of the number and characteristics of the population. So that the sample can be interpreted as part of the existing population, the sampling must use a certain method based on existing considerations. In the sampling technique the author uses a purposive sampling technique, Sugiyono (2011) states that purposive sampling is a sampling technique with certain considerations, the author determines the nature and characteristics used in this research.

The sampling criteria in this research are as follows: (1) Companies that are included in the financial sector and banking sub-sector; (2) Banks listed since 2019; (3) Banks that can be accessed during the observation period, namely 2019-2022; (4) This research uses a secondary panel data collection of banks that are consistently listed on the IDX during the observation period from 2019-2022.

All data for this research is secondary and collected from annual reports of Indonesian commercial banks (annual reports). Generalized method of moments (GMM) is used for coefficient estimation to address the effects of some endogenous variables.

Data and Types of Research

In data collection, researchers obtain data sources, namely secondary data. Secondary data is data taken indirectly through intermediary media. Secondary data takes the form of annual reports from Indonesian commercial banks (annual reports) which are compiled into documentary data. The form of data used is quantitative data. Quantitative data is information obtained in the form of a number scale or statistical calculations. Based on this quantitative data, it will be processed using a statistical system in processing the data.

Method of collecting data

Currently we have one problem variable, namely financial performance (FP), while the regressor variables are credit risk and bank-specific factors. This model is consistent with Chimkono et al. (2016), where ROA and ROE will be used as measurements of financial performance (FP), while credit risk will be measured by the NPL ratio and three specific variables, namely CER, LR and ALR. Hamza (2017) emphasized several macro and micro variables that need to be controlled in measuring FP because these factors are influential factors. Three control variables: bank size, bank age and inflation are used in this research. The researcher has chosen the three control variables and the most relevant ones because these variables represent the micro and economic situation. Data has been collected from the country of Indonesia. The nature of the data is panel data and the numbers are (47 commercial banks that have gone public). The data was collected from bank financial reports throughout 2019-2022, so this research data is panel in nature.

ISSN 2721-0960 (Print), ISSN 2721-0847 (online)

Operational Definition of Variables and Their Measurement

Credit risk. The probability of the lender defaulting, the credit risk is high, the bank's FP is higher (Louzis et al. 2012). Bank specific factors. Bank specific factors are factors that fall under the umbrella of general banks (Chimkono et al., 2016). Problematic credit. A loan becomes non-performing when the loan term has passed, and after that period, the bank is unable to receive the principal amount of the loan and interest payments (Hamza, 2017).

Financial Performance is the ability to generate profits from the assets working within it. This financial performance is measured using the following formula:

ROA = $\frac{EAT}{TA}$

ROE = $\frac{EAT}{Ekuitas}\ x\ 100\%$

Credit risk is the ability to identify credit problems where the borrower is unable to fulfill the obligation to pay the borrowed funds in full at maturity. This credit risk is measured using the following formula:

Ratio NPL = $\frac{Problem\ Credit}{Total\ Credit}\ x\ 100\%$

Ratio CAR = $\frac{Ekuitas}{ATMR}\ x\ 100\%$

A bank-specific factor is the ability to determine internal influences on the bank. These bank-specific factors are measured using the following formula:

CER = $\frac{Total\ Operational\ Costs}{Total\ income}$

ALR = $\frac{NIM}{TA}$

LR = $\frac{Loan\ Amount}{Amount\ of\ Savings}$

Bank Size = TA (total assets)

Inflation = Inflation Annual rate stated by BI

Age = Bank age

ROA (Y) = $\alpha + \beta 1\ NPL + \beta 2\ CAR + \beta 3\ CER + \beta 4\ ALR + \beta 5\ LR$

Information: ROA = Return on company assets

B = Coefficients from regression

NPL = Total bad debts

CAR = Capital Adequacy Ratio

CER = Cost Efficiency Ratio

ALR = Average loan interest rate

LR = Liquidity Ratio

Data analysis method

This research analyzes the relationship between credit risk, bank-specific factors, and FP. The data analysis method used in this research is a quantitative data analysis method, this research is panel data regression using Eviews software. Generalized moment method (GMM) can be used in this research. The general moment method has advantages over the least squares

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method and in other research the general moment method is very applicable. Perhaps by adding a fixed effects method, this method can solve the problem by introducing several instrumental variables.

According to Barros et al. (2020) panel data regression has two significant problems: autocorrelation and endogeneity, and these problems arise because of fixed effects. Therefore, this study examines two basic assumptions of ordinary least squares. The panel data method is a collection of cross data and quarterly data, where cross data units are measured at different times. Meanwhile, panel data is individual data viewed over a certain period of time. Other types of data are: using quarterly data (time-series data) and cross-sectional data. In quarterly data, one or more variables will be observed in a certain time series. Meanwhile, cross data can be interpreted as observations from several observation samples at one time.

Classic assumption test

Autocorrelation Test

CLRM is data free from autocorrelation. Indicates the relationship between two different error terms must be zero; it means that there is no autocorrelation between the error terms. There are different tests to test autocorrelation, but Durbin Watson test is used in this study to test autocorrelation.

It can be seen that the p-value from Durbin Watson is zero, so that means all p-values are limited to 0.05. Which means rejecting the null hypothesis and the null hypothesis is that this data does not experience autocorrelation, but the results show that this data has an autocorrelation problem.

Multicollinearity Test

Multicollinearity can occur if there is a perfect or almost perfect linear relationship between several independent variables in the regression model. Aims to test whether the regression model found any correlation between independent variables. Multicollinearity occurs if the tolerance value is smaller than 0.1, which means there is no correlation between independent variables whose value is more than 95% and for VIF values greater than 10, if it is less than 10 then it can be said that the independent variables used are reliable and objective.

Heteroscedasticity Test

A regression model is said to experience heteroscedasticity if there is an imbalance in the residual variance from one observation to another observation. If the variance of the residuals and observations from one observation to another is constant, it is called heteroscedasticity. The presence of heteroscedasticity can make the estimates in the model inefficient. In general, heteroscedasticity problems occur more frequently in cross section data compared to time series data, probability results are said to be significant if they are above the 5% confidence level.

Normality test

The Normality Test aims to test whether the independent variable, dependent variable or both are normally distributed or not. One way to see the normality of residuals is to use the Jarque-Bera (JB) method. If the JB value is smaller than 2 then the data is normally distributed or if the probability is greater than 5% then the data is normally distributed.

Determination of the Estimation Model

The regression model estimation method using panel data can be carried out using three approaches, including:

ISSN 2721-0960 (Print), ISSN 2721-0847 (online)

Common Effect Model (CEM)

CEM is the simplest panel data model approach because it only combines time series and cross section data. This model does not pay attention to time or individual dimensions so it is assumed that the behavior of company data is the same in various time periods. This method can use the Ordinary Least Square (OLS) approach or least squares technique to estimate panel data models. For panel data models, it is often assumed that ßit = ß, that is, the effect of changes in X is assumed to be constant over time in the cross-section category. In general, the form of linear model that can be used to model panel data is:

Yit = Xitßit + eit

Information:

Yit = Observation from the i-th unit and observed in the t-th time period (dependent variable, namely panel data).

Xit = Independent variable from the ith unit and observed in the period time t. It is assumed that Xit contains a constant variable.

eit = Is an error component which is assumed to have a mean value of 0 and its variation is homogeneous in time and is an independent variable with Xit.

Fixed Effects Model (FEM)

This model assumes that differences between individuals can be reduced from intercept differences. Fixed Effects Model (FEM) is a panel data estimation technique using dummy variables to capture intercept differences. Interception between different companies Interception can occur due to differences in work culture, managerial and incentives. In addition, this model also assumes that the regression coefficient is constant between companies and time. This approach with dummy variables is known as least squares dummy variables (LSDV). The Fixed Effects Model (FEM) equation can be written as follows:

Yit = Xitß + Ci + …… + eit

Information:

Yit = Observation from the i-th unit and observed in the t-th time period (dependent variable, namely panel data).

Xit = Independent variable from the ith unit and observed in the period time t. It is assumed that Xit contains a constant variable.

eit = Is an error component which is assumed to have a mean value of 0 and its variation is homogeneous in time and is an independent variable with Xit.

Ci = Dummy variable

Random Effect Model (REM)

This model estimates panel data where obstacle variables can be interconnected over time and between individuals. In the Random Effect Model, intercept differences are facilitated by the error term for each company. The advantage of using the Random Effect Model is that it eliminates heteroscedasticity. This model is called the Generalized Least Square (GLS) technique. As an estimator, here is the form of the equation:

Yit = Xitß + Vit

Information:

ISSN 2721-0960 (Print), ISSN 2721-0847 (online)

Vit = Ci + Di + eit

Ci = Has independent properties and is identically distributed (iid) normally with mean 0 and variance Ϭ2 C (cross section component).

Di = Has normal ID properties with a mean of 0 and Ϭ2D variation (time series error component).

Eit = Has iid properties with mean 0 and variance Ϭ2 e.

Data Analysis Model Specification Test

To analyze panel data, model specification tests are required to describe the data, here are several types of model specification tests:

Hausman test

The Hausman test is a test used to select the best model between the Fixed Effects Model or Random Effect Model. Brooks (2014) shows that the probability of Hausman test results can be used to test endogeneity, and the null hypothesis of this test is that the errors are uncorrelated. H0 from the Hausman test is a Random Effect Model and H1 is a Fixed Effects Model. The Hausman test is carried out by looking at the probability (p-value), if the probability is smaller than the real level (alpha) then the Fixed Effects Model is more appropriate, and conversely if the probability value (p-value) is greater than the real level (alpha) then the Random Effect The model is more precise. This comparison was carried out with the following hypothesis:

H0 = Using the Random Effect Model, if the p-value > real level (alpha).

H1 = Using the Fixed Effects Model, if the p-value < real level

(alpha).

Test Chow

The Chow test is a test that aims to determine which model to choose between the Common Effects Model or the Fixed Effects Model. The chow test can be carried out by looking at the probability (p-value) for the chow test hypothesis as follows:

H0 = Using the Common Effect Model. if the p-value > real level (alpha).

H1 = Using the Fixed Effects Model, if the p-value < real level (alpha).

Legrange Multiplier Test

This test is used to compare whether the Random Effect Model is better than the Common Effect Model. For the legrange multiplier test hypothesis as follows:

H0 = Using the Common Effect Model. if the p-value > real level (alpha).

H1 = Using the Random Effect Model, if the p-value < real level (alpha).

Testing Hypotheses

To test the statistical hypothesis that will be used in this research as follows:

t Test (Partial)

In the t statistical test, it shows how far the influence of an individual independent variable is as a variation of the dependent variable. This test uses a significance level (a = 5%) or 0.05. To determine whether a hypothesis is accepted or rejected, these include the following: (a) If the significant value is > 0.05 then the hypothesis is rejected (the regression coefficient is not

ISSN 2721-0960 (Print), ISSN 2721-0847 (online)

significant). This means that partially the independent variable does not have a significant influence on the dependent variable; (b) If the significance value is ≤ 0.05 then the hypothesis is accepted (significant regression coefficient). This means that partially the independent variable has a significant influence on the dependent variable.

Coefficient of Determination Test (R2)

To see the quality of the regression equation, you can see the determination value of R2. Systematically, the determination value is the square of the correlation coefficient (r). Because R2 values are often overestimated, some statistical software will calculate a corrected R2. The determination value provides information on how big a role the independent variable plays in determining the dependent variable. The determination value is between 0% and 100%. The closer it is to 100%, the better the determination of the regression equation.

The fundamental weakness in using the coefficient of determination is that it causes bias in the number of independent variables included in the model. To overcome this problem, other appropriate feasibility measures have been developed. The measure is a modification of R2 that provides a penalty for adding explanatory variables that do not reduce the residual significantly. This measure is called adjusted R2.

Results and Discussion

Autocorrelation Test

The autocorrelation test is a classic assumption test to evaluate whether there is a correlation between the values of a variable and the variables used in research in the previous period. This research's autocorrelation test was carried out using Durbin Watson. The following are the results of the autocorrelation test that has been carried out:

Table 1. Autocorrelation Test Results

Dependent Variable: LROA				
Method: Least Squares				
Date: 12/19/23 Time: 16:40				
Sample (adjusted): 1 119				
Included observations: 66 after adjustments				
HAC standard errors & covariance (Bartlett kernel, Newey-West fixed bandwidth = 4.0000)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	-5.326018	0.705121	-7.553343	0.0000
NPL	0.641242	0.326739	1.962551	0.0543
LCAR	-0.036881	0.456129	-0.080857	0.9358
LCER	-0.308782	0.322047	-0.958810	0.3415
ALR	-1.052362	0.797419	-1.319711	0.1919
LLR	-0.109096	0.282409	-0.386304	0.7006
R-squared	0.070454	Mean dependent var		-5.025060
Adjusted R-squared	-0.007008	S.D. dependent var		0.966733
S.E. of regression	0.970115	Akaike info criterion		2.863703
Sum squared resid	56.46736	Schwarz criterion		3.062763
Log likelihood	-88.50221	Hannan-Quinn criter.		2.942361
F-statistic	0.909535	**Durbin-Watson stat**		**0.590373**
Prob(F-statistic)	0.481028	Wald F-statistic		1.955857
Prob(Wald F-statistic)	0.098366			

ISSN 2721-0960 (Print), ISSN 2721-0847 (online)

Source: Results of e-views data processing

Based on the results of the analysis above, it shows that the Durbin Watson value is 0.590373. Therefore, this research can be concluded to be free from autocorrelation because the Durbin Watson value obtained is between -2 and +2.

Multicollinearity Test

The multicollinearity test is a classic assumption test used to evaluate the level of correlation between two or more independent variables used in research regression models. The multicollinearity test can be seen based on the VIF (Variance Inflation Factor) value obtained. The following are the results of the multicollinearity test that was carried out:

Table 2. Multicollinearity Test Results

Variance Inflation Factors			
Date: 12/19/23 Time: 16:24			
Sample: 1 128			
Included observations: 66			
Variable	**Coefficient Variance**	**Uncentered VIF**	**Centered VIF**
C	0.346356	24.28960	NA
NPL	0.572503	1.213269	1.055087
LCAR	0.122981	17.04713	1.094731
LCER	0.127607	9.401131	1.117713
ALR	0.601071	1.684283	1.106820
LLR	0.117098	2.012076	1.085576

Source: Results of e-views data processing

Based on the analysis table above, it shows that the overall VIF value of the variables is less than 10 (VIF < 10). This shows that the regression model used meets the criteria for the multicollinearity test and can be categorized as free from symptoms of multicollinearity so that it can be used in research.

Heteroscedasticity Test

The heteroscedasticity test is an analysis carried out to determine whether there are variations in errors (residuals) in the regression model that are not constant across all independent values. The following are the results of the heteroscedasticity test that has been carried out:

Table 3. Heteroscedasticity Test Results

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
Null hypothesis: Homoskedasticity			
F-statistic	0.677534	Prob. F(5,60)	0.6421
Obs*R-squared	3.527283	Prob. Chi-Square(5)	0.6193
Scaled explained SS	2.208999	Prob. Chi-Square(5)	0.8195

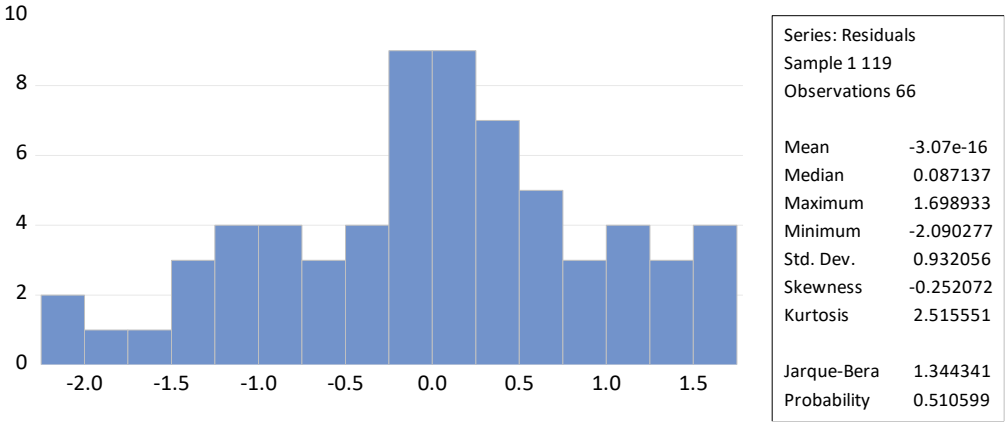
Source: Results of e-views data processing

Based on the table above, it shows the value of Prob. Chi Square is 0.6193 which is greater than 0.05. This shows that the model in this study does not contain heteroscedasticity because the analysis test results meet the heteroscedasticity test.

ISSN 2721-0960 (Print), ISSN 2721-0847 (online)

Normality test

The Normality Test aims to test whether the independent variable, dependent variable or both are normally distributed or not. One way to see the normality of residuals is to use the Jarque-Bera (JB) method. If the JB value is smaller than 2 then the data is normally distributed or if the probability is greater than 5% then the data is normally distributed. The following are the results of the normality test that was carried out in this study:



Graph 1. Normality Test Results

Source: Results of e-views data processing

Based on the output table above, the JB value is 1.344 < 2 so it can be categorized as normally distributed data because the probability is 0.510 > 0.05 and meets the normality test criteria.

Determination of the Estimation Model

The regression model estimation method using panel data in this research was carried out using three approaches. The following are the results of the analysis of three approaches to determining the estimation model:

Test Chow

The Chow Test is a statistical test used to evaluate whether there are significant differences between two regression models. The following are the results of the Chow test analysis that was carried out in this research:

Table 4. Chow Test Results

Redundant Fixed Effects Tests			
Equation: Untitled			
Test cross-section fixed effects			
Effects Test	**Statistic**	**d.f.**	**Prob.**
Cross-section F	4.513380	(22,40)	0.0000
Cross-section Chi-square	83.596561	22	0.0000

Source: Results of e-views data processing

Based on the results of the analysis above, it shows that the probability value for cross section F is 0.0000. This value is less than 0.05 so it can be concluded that the correct model to use is the Fixed Effect Model (FEM) and H0 is rejected.

ISSN 2721-0960 (Print), ISSN 2721-0847 (online)

Hausman test

The Hausman test is a statistical test used to evaluate whether there are statistically significant differences between two estimators. The Hausman test was carried out to determine the use of a better model between random effects and fixed effects. The following are the results of the Hausman test that was carried out in this research:

Table 4. Hausman Test Results

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	6.794372	4	0.1472

Source: Results of e-views data processing

Based on the results of the analysis above, it shows a p-value of 0.1472 > real level 0.05. It can be concluded that the best model in regression uses a random effects model.

Legrange Multiplier Test

The Legrange Multiplier test is a statistical test carried out to test the existence of certain functional relationships in a model. The LM test is carried out to assess whether a variable or group of variables can be included in the research regression model. The following are the results of the LM test that was carried out in this research:

Table 5. Lagrange Multiplier Test Results

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	14.93660	1.334754	16.27135
	(0.0001)	(0.2480)	(0.0001)
Honda	3.864790	-1.155316	1.915887
	(0.0001)	(0.8760)	(0.0277)
King-Wu	3.864790	-1.155316	0.320156
	(0.0001)	(0.8760)	(0.3744)
Standardized Honda	4.265048	-0.916255	-1.552171
	(0.0000)	(0.8202)	(0.9397)
Standardized King-Wu	4.265048	-0.916255	-2.354626
	(0.0000)	(0.8202)	(0.9907)
Gourieroux	--	--	14.93660
			(0.0002)

Source: Results of e-views data processing

Based on the results of the analysis above, it can be concluded that by using the Random Effect Model, a p-value of 0.0001 < real level 0.05 is obtained.

Testing Hypotheses

ISSN 2721-0960 (Print), ISSN 2721-0847 (online)

Hypothesis testing in this research was carried out in several stages. The following are the results of hypothesis testing that has been carried out in the research:

t Test (Partial)

The partial t test is a statistical test used to assess the individual significance of a regression parameter in the linear regression model used in research. The t test is carried out to determine whether the independent variable has a significant influence on the dependent variable. The following are the results of the t test that was carried out:

Table 6. Partial t test results

Dependent Variable: LROA				
Method: Panel Least Squares				
Date: 12/19/23 Time: 17:09				
Sample: 2019 2022				
Periods included: 4				
Cross-sections included: 23				
Total panel (unbalanced) observations: 68				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	0.142874	0.038699	3.691894	0.0005
LNPL	0.065471	0.037816	1.731312	0.0884
LCAR	-0.068532	0.045409	-1.509226	0.1363
LCER	0.061751	0.063507	0.972359	0.3347
LALR	0.081350	0.036027	2.257999	0.0275
LLR	-0.158120	0.037226	-4.247556	0.0001

Source: Results of e-views data processing

Based on the table of analysis results above, several conclusions can be obtained, including: (1) The LNPL variable has a significance value of 0.0884 which is greater than 0.05 and the calculated t value is smaller than the t table. This shows that LNPL does not have a significant effect on financial performance; (2) The LCAR variable has a significance value of 0.1363 which is greater than 0.05 and the calculated t value is smaller than the t table. This shows that LCAR does not have a significant effect on financial performance; (3) The LCER variable has a significance value of 0.3347 which is greater than 0.05 and the calculated t value is smaller than the t table. This shows that LCER does not have a significant effect on financial performance; (4) The LALR variable has a significance value of 0.0275 which is smaller than 0.05 and the calculated t value is greater than the t table. This shows that LALR has a positive and significant effect on financial performance; (5) The LLR variable has a significance value of 0.0001 which is greater than 0.05 and the calculated t value is smaller than the t table. This shows that LLR has a negative and significant effect on financial performance.

Coefficient of Determination Test (R2)

The coefficient of determination test is an analytical test carried out to describe the level of variability of the dependent variable which can be explained by the regression model used. The following are the results of the coefficient of determination test that has been carried out:

Table 7. Coefficient of Determination Test Results

R-squared	0.162454
Adjusted R-squared	0.092658

Source: Results of e-views data processing

ISSN 2721-0960 (Print), ISSN 2721-0847 (online)

Based on the analysis results table above, it can be concluded that the influence of all research variables is 0.092658 or 9.26% in predicting financial performance and the remainder is influenced by other factors outside the regression model used.

The Effect of NPL on Bank Financial Performance

Based on the results of the analysis and hypothesis testing that has been carried out, it shows that NPLs have no effect on the financial performance of banks that go public. This is because LNPL has a significance value of 0.0884 which is greater than 0.05 and the calculated t value is smaller than the t table.

The research results regarding NPL (Non-Performing Loans) have no effect on financial performance, which can be caused by several factors. NPL is a loan that is unable to fulfill its interest payment obligations according to a predetermined schedule. However, based on the results of the analysis that has been carried out, this does not affect the bank's financial performance because the impact can be overcome. If banks have a well-diversified credit portfolio, then credit risk can be divided among various sectors. The existence of a well-diversified credit portfolio is able to create positive performance in banking. Another factor that is the reason why NPLs have no effect on banking performance is related to improving the quality of credit risk management at the relevant banks. Banking that has effective credit risk and is accompanied by good risk control can minimize the impact of NPLs on banking financial performance. In addition, NPLs cannot cause a significant decrease or increase in banking financial performance because banks have effective loss allowance policies which can help banks prepare sufficient fund reserves to overcome credit risks that occur.

If linked to banking financial performance, NPLs have an impact on the interest income generated by banks which can reduce banking net profits. However, currently, banks are implementing various policies to anticipate the impact caused by NPLs. This is able to minimize losses due to NPLs so that NPLs do not affect banking financial performance. This is in line with research conducted by (Sannino et al., 2021).

The Effect of Capital Adequacy Ratio (CAR) on Financial Performance

Based on the results of the analysis and hypothesis testing that has been carried out, it shows that the capital adequacy ratio (CAR) has no effect on the financial performance of banks that go public. This is because CAR has a significance value of 0.1363 which is greater than 0.05 and the calculated t value is smaller than the t table.

The research results related to the capital adequacy ratio (CAR), which has no effect on banking financial performance in this study, can be influenced by several conditions. The first condition that causes CAR to have no effect on financial performance is related to the lack of efficient use of capital in banks. The lack of efficient use of capital in banks despite a high level of capital adequacy can result in less effective business activities carried out to generate income. This resulted in limited banking financial performance. Apart from that, the influence of the composition of capital owned by the bank is an important factor. The capital owned by a bank is divided into several parts. If the CAR owned by a bank is high but the main composition is core capital which has high risk, it can have a negative impact on the bank's financial performance. The next condition that causes CAR to have no effect on banking financial performance is because the overall business environment is unpredictable. During an economic recession, all banks will experience pressure which can affect banking financial performance even though the bank's CAR is high. However, this does not affect the condition of banking financial performance.

ISSN 2721-0960 (Print), ISSN 2721-0847 (online)

When related to banking financial performance, CAR is one of the indicators used to measure the level of capital adequacy in banks to face future risks. CAR in banking is able to reflect the level of security and stability of the bank and is able to provide protection against risks that occur. This is because if a bank has an adequate level of capital, it will be better prepared to face potential losses that occur due to credit, operational and market risks. However, based on the results of research conducted on banks that have gone public in 2019-2022, it shows that CAR has no effect on banking financial performance. This is in line with research (Yusuf & Ichsan, 2021) which states that CAR has no effect on banking financial performance.

The Effect of Cost Efficiency Ratio (CER) on Financial Performance

Based on the results of the analysis and hypothesis testing that has been carried out, it shows that the cost efficiency ratio (CER) has no effect on the financial performance of banks that go public. This is because CER has a significance value of 0.3347 which is greater than 0.05 and the calculated t value is smaller than the t table.

The research results show that the cost efficiency ratio (CER) has no effect on banking financial performance. This statement is based on research results and can be influenced by several factors and conditions related to the reason that the cost efficiency ratio (CER) has no effect on banking financial performance. Economic conditions and market situations are the main reasons related to their relationship with banking financial performance so that if there is economic uncertainty, banks will face significant challenges to their financial performance. This of course has an impact on CER which has no effect on financial performance. In addition, banks that went public in 2019-2022 and operate on a smaller scale have a relatively high CER because their fixed operational costs per unit are higher. However, this does not reflect low banking financial performance because if banks are able to take advantage of opportunities and other advantages it can have an impact on increasing financial performance without being influenced by CER.

When related to banking financial performance, the cost efficiency ratio (CER) is a ratio used to measure the level of efficiency of a bank in managing its costs to generate income. The lower the CER value, the more efficient the bank is in managing its costs. However, based on this research, CER does not affect banking financial performance because there are other conditions and factors that cause financial performance to increase or decrease. This is in line with research (Siddique et al., 2021) which states that CER has no effect on banking financial performance.

The Effect of Average Loan Interest Rates (ALR) on Financial Performance

Based on the results of the analysis and hypothesis testing that has been carried out, it shows that the average loan interest rate (ALR) has a significant effect on the financial performance of banks that go public. This is because ALR has a significance value of 0.0275 which is smaller than 0.05 and the calculated t value is greater than the t table.

The research results show that the average loan interest rate (ALR) influences banking financial performance. The average loan interest rate (ALR) can have an impact on bank revenues and costs. In addition, the average loan interest rate (ALR) is able to provide an overview of monetary policy strategy and the health of the loan portfolio. This can be attributed to when loan interest rates are high, banks can obtain greater interest income from loans given to their customers so that interest margins and net profits increase. However, if the loan interest rate is low then the risk given by the bank is low and you have to look for income from other sources outside of that. The influence of average loan interest rates on banking financial performance can influence banks' funding costs. Often, banks use funding sources from loans or other financial institutions so that interest rates on other funding sources can have an impact on bank

ISSN 2721-0960 (Print), ISSN 2721-0847 (online)

operational costs. In addition, average loan interest rates can describe overall financial market conditions. Fluctuations in interest rates can affect perceived risk, liquidity and capital availability. A bank that is able to flexibly adjust loan interest rates can better respond to market changes and mitigate the associated risks.

When related to banking financial performance, ALR is related to interest income, interest margin, funding costs, credit portfolio growth, competitiveness in the market, the influence of ROA and ROE, as well as the influence of regulations on banks. Therefore, the average loan interest rate (ALR) has a significant effect on banking financial performance. This is in line with research conducted by (Hamdillah et al., 2021) which states that ALR has a positive effect on banking financial performance.

The Effect of Liquidity Ratios (LR) on Financial Performance

Based on the results of the analysis and hypothesis testing that has been carried out, it shows that the liquidity ratio (LR) has a significant effect on the financial performance of banks that go public. This is because LLR has a significance value of 0.0001 which is smaller than 0.05 and the calculated t value is greater than the t table.

The research results show that the liquidity ratio (LR) has a significant effect on banking financial performance. This is proven by the ability of liquidity ratios to measure a bank's ability to fulfill short-term financial obligations using assets. The liquidity ratio of banks that go public in 2019-2022 reflects the level of bank readiness to face the financial obligations it has. A bank's high liquidity ratio means that most liquid assets can be converted into cash quickly. The higher the liquidity ratio a bank has, the more efficient the bank will be in overcoming challenges related to liquidity needs so that financial performance will increase. However, the lower the liquidity ratio, the lower the bank's ability to fulfill its financial obligations, thus affecting the decline in banking financial performance. In addition, liquidity ratios have an impact on customer reputation and trust. Customers will tend to choose banks that are considered stable and capable of meeting their financial obligations. Liquidity ratios also impact long-term financial health. Banks that are able to maintain the right balance between their liquid assets and short-term liabilities can avoid the risk of bankruptcy and gain better access to capital markets. Therefore, the liquidity ratio (LR) has a significant effect on banking performance (Wuave et al., 2020).

Liquidity ratios are closely related to banking financial performance because they reflect the bank's ability to pay its short-term debt. In addition, the liquidity ratio reflects the quality of liquidity management owned by the bank so that it can influence banking performance. This is in line with research conducted by Sannino et al. (2021) which states that LR influences banking financial performance.

Conclusion

Based on the results of the research that has been conducted, it can be concluded that NPLs have no effect on the financial performance of banks that go public. This is because LNPL has a significance value of 0.0884 which is greater than 0.05 and the calculated t value is smaller than the t table. The capital adequacy ratio (CAR) has no effect on the financial performance of banks that go public. This is because CAR has a significance value of 0.1363 which is greater than 0.05 and the calculated t value is smaller than the t table. The cost efficiency ratio (CER) has no effect on the financial performance of banks that go public. This is because CER has a significance value of 0.3347 which is greater than 0.05 and the calculated t value is smaller than the t table. The average loan interest rate (ALR) has a significant effect on the financial performance of banks that go public. This is because ALR has a significance value of 0.0275 which is smaller than 0.05 and the calculated t value is greater than the t table. The liquidity

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ratio (LR) has a significant effect on the financial performance of banks that go public. This is because LLR has a significance value of 0.0001 which is smaller than 0.05 and the calculated t value is greater than the t table.

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