

Banking Financial Performance as Influenced by Credit Risk, Liquidity and Bank Size In Conventional Banks Listed On The Indonesian Stock Exchange For The Period 2014 - 2023

Kiki Muntaqiah¹, Akhmadi^{2*}

^{1,2} Faculty of Economics and Business, Universitas Sultan Ageng Tirtayasa
e-mail: muntaqiahk@gmail.com

Abstract

This study aims to empirically examine the impact of credit risk, liquidity, and bank size on the financial performance of conventional banks listed on the Indonesia Stock Exchange (IDX) during the period 2014-2023, with a particular focus on the COVID-19 pandemic period. The research variables used include the Non-Performing Loan (NPL) ratio, Loan to Deposit Ratio (LDR), and bank size, while Return on Assets (ROA) is used as a financial performance indicator. This study uses the purposive sampling method to select a sample from 138 banks listed on the IDX, resulting in 9 banks that meet the established criteria. Data analysis was conducted using panel data regression with the Fixed Effect Generalized Least Square (GLS) model to address the issues of autocorrelation and heteroskedasticity found in classical assumptions. The research results show that credit risk (NPL) has a significant negative impact on ROA, while bank size and liquidity (LDR) have a significant positive impact on ROA during the pandemic. These findings highlight the importance of managing credit and liquidity risks as well as optimizing bank size to improve financial performance amid the challenging economic conditions caused by the pandemic. This study also suggests that the financial performance of banks can be more stable if supported by appropriate risk management strategies and good operational efficiency. The limitations of this study include a sample restricted to conventional banks in Indonesia and the specific conditions during the COVID-19 pandemic, which may affect the generalization of the results.

Keywords: *Credit Risk, Liquidity, Bank Size, Financial Performance*

BACKGROUND

The banking industry contributes significantly to Indonesia's economic growth by allowing capital flows and offering financial services to the country's citizens (Indonesia, 2020). Indonesian banking is currently facing quite challenging challenges, especially from 2014 to 2023, which include global unrest and sectoral risks. Thus, a deep

understanding of the key components that affect the performance of the banking industry is required. The main focus of the study is Non-Performing Loan (NPL), Loan to Deposit Ratio (LDR), and Bank Size towards Financial Performance (ROA).

By 2020, an infectious coronavirus disease known as acute respiratory syndrome corona virus 2 (Sars-CoV-2) has emerged in Indonesia. The virus was first discovered in Wuhan, the capital of China's Hubei Province, in December 2019, and then spread around the world, causing a 2019-2020 coronavirus pandemic. The government has recorded a total of 1,511,712 Covid-19 cases in Indonesia as of March 31, 2021, counted since President Joko Widodo announced the first case on March 2, 2020. (Covid.go.id, 2020). In a situation like this, the economic sector is one of the most affected and suffering a significant impact (Sumarni, 2020).

In view of the current situation and supporting the economic recovery at the Bank of Indonesia, it is expected to strengthen policy synergies and support further policies aimed at building optimism in the national economy. These include opening up productive and secure economic sectors from COVID-19, accelerating fiscal stimulus, distributing bank credit on the supply and demand side, continuing monetary and macroprudential stimuli, speeding up economic digitalization, and more monetary, macroprudential stimulus. The Bank of Indonesia has established regulations on performance measurements to assess the level of bank health in this regard. (Haryati & Widyarti, 2016)

Financial performance is an indicator of the success of a bank in carrying out its operations. The most commonly used indicator of financial performance to measure the success of banks is Return on Assets/ROA (Dewi & Yadnyana, 2019); (Yulianto et al., 2018). Return On Asset (ROA) is a ratio used to see the level of effectiveness of the use of assets in generating profits (Badawi, 2017). The high ROA indicates that banks have good asset management so it can be said that when the ROA is large, the bank's profit will also be large (Yuniari & Badjra, 2019). Furthermore, financial performance is also an analysis in the financial field that is implemented in order to improve the performance of previous years by using analysis to obtain a financial position that reflects the actual condition of the company. (Sari et al., 2016).

Currently, empirical data recorded by the OJK on the development of profitability with ROA as a measure of financial performance shows the evolution of the profitability of Indonesian banks during the period from 2014 to 2023, measured in percentages that indicate significant fluctuations in bank profitability, with notable changes at several key points. In 2014, profitability peaked at 7.20%, followed by a sharp decline in 2015 to 2.32%, and a relatively stable period from 2016 to 2019, with profitability ranging

between 1.39% and 1.49%. Then a sharp decline occurred in 2020, reaching a low of 4.21%, likely reflecting the adverse impact of the COVID-19 pandemic. After that, profitability rebounded in 2021 to 1.69%, indicating a recovery. In the following years, profitability continued to increase, reaching 2.40% in 2022 and further rising to 2.74% in 2023. This trend indicates that the Indonesian banking sector has experienced substantial volatility in profitability, influenced by external economic conditions and potential internal banking sector dynamics. The decline in 2020 marked a period of economic pressure, while the subsequent recovery highlighted the resilience and adjustments in the sector (Otoritas Jasa Keuangan, n.d.).

However, there was a decrease in ROA from 2017 to 2019 by 0.26%, followed by a sharp decline in 2019-2020, reaching a low of -3.04%. This period of declining profitability reflects the challenging economic conditions, especially during the COVID-19 pandemic, which impacted bank financial health. The figure highlights the need for effective management of factors influencing bank performance, prompting further investigation in the study into elements like credit risk, liquidity, and bank size.

Financial performance of banks can be influenced by several factors including internal and external factors (Yulistiani & Suryantini, 2016), inflation, capital, credit risk, liquidity risk, (Anam, 2018); (Margaretha & Letty, 2017); (Ruwanti, 2011), and leverage, bank size, efficiency, as well as bopo (Haryati & Widyarti, 2016); (Margaretha & Letty, 2017) and solvency, good corporate governance (Sari et al., 2016). From some of these factors, the researchers decided to use major free variables as determinants of bank financial performance, including credit risk, liquidity, bank size, and plus control variables.

Credit risk is the risk arising from the failure of the debtor or other party to meet the obligations of the bank (Anam, 2018; Badawi, 2017). Previous research that has tested such factors is (Anam, 2018; Annisa, 2018; Muliana & Karmila G, 2019; Yulianto et al., 2018) which concluded that credit risk has a significant positive impact on financial performance. That means the smaller the credit risk, the better the bank's financial performance. Other researchers found similar results that low credit risk can improve performance (Badawi, 2017) instead there are research results that show that credit risk does not affect the improvement of financial performance (Haryati & Widyarti, 2016) because credit risk has a positive impact on bank performance.

Another factor that determines performance is financial liquidity. Financial liquidity is a ratio that demonstrates the ability of the company to meet short-term financial obligations on time (Haryati & Widyarti, 2016; Ososoga & Diana, 2020; Utami & Pardanawati, 2016; Yuniari & Badjra, 2019). However, previous research found that liquidity is not a

significant determinant of financial performance. (Annisa, 2018; Margaretha & Letty, 2017; Thaibah & Faisal, 2020; Yulianto et al., 2018).

Similarly, the bank size factor (bank size) is also one of the determinants of financial performance. The size of the bank is a large proportion of the small assets owned by the banking company. (Nirmayana et al., 2018; Thaibah & Faisal, 2020) The researchers found that the size of the bank had a significant impact on financial performance. Instead, other researchers concluded that the size of the bank had a positive but non-significant influence on financial performance. (Purnamasari, 2020; Thaibah & Faisal, 2020; Yuniari & Badjra, 2019).

Based on the above analysis, it was found that the linkage of the variables of credit risk, liquidity, and size of banks with the financial performance of the bank still exists inconsistency of earnings. Therefore, the author intends to test the influence of credit risk variables, liquidity, and bank size on banking financial performance during the Covid-19 pandemic. The aim is to add research findings that are consistent with the theory. Besides, the use of such variables in a study is still rarely used by previous researchers. The results of this study are expected to produce the findings that the variables of credit risk, liquidity and bank size have a significant influence on financial performance during the Covid-19 pandemic.

The problem is that there is a decline in profits allegedly caused by credit risk, the role of banking performance in stabilizing the economy during the Covid-19 pandemic is still not optimal, liquidity resilience in meeting short-term needs has a declining trend, and there has been a shift in bank asset management due to the transfer of funds to cover liquidity. The aim of this study is to find out the impact of credit risk, liquidity and bank size on bank financial performance during the Covid-19 pandemic on conventional public banks listed on the Indonesian Stock Exchange.

METHODOLOGY

1. Hypotehsis Development

Effect of Credit Risk on Financial Performance

In his research, (Anam, 2018; Badawi, 2017) stated that credit risk is the danger resulting from the debtor's inability to meet the bank's commitments. According to earlier studies, credit risk negatively affects financial performance (Annisa, 2018; Muliana & Karmila G, 2019; Yulianto et al., 2018). However, because credit risk had a beneficial impact on financial performance, other researchers claimed that credit risk had no bearing on better financial performance (Haryati & Widyarti, 2016). The following hypothesis can be developed from the description given above:

Ha1: The financial performance (ROA) and credit risk (NPL) are significantly influenced by one another.

Liquidity's Impact on Financial Performance

The ratio known as liquidity indicates a bank's capacity to pay short-term obligations (Utami & Pardanawati, 2016). According to the study, financial performance was significantly impacted by liquidity. Thus, the presumption. theory. transient is:

Ha2: There is a notable flow of liquidity and an influence (ROA)

Bank size's effect on financial performance

(Nirmayana et al., 2018) define bank size as a comparison of the amount of assets possessed by a financial institution. According to the study, a bank's size positively affects its financial performance. The following is the hypothesis based on the description given above:

Ha3: The size of the bank (Sized) has a considerable impact on its financial performance (ROA).

2. Methods

In order to prepare for this associative study, a quantitative research method with the following characteristics was employed: data financial statements of banking companies at conventional general banks, where 138 active bank companies are listed on the Indonesian Stock Exchange, were obtained and collected. The sample for this study was chosen based on the following criteria:

- 1) Banks that are listed between 2014 and 2023 on the Indonesia Stock Exchange (EIB)
- 2) Banking institutions with substantial assets between 2014 and 2023
- 3) Banks that disclose their triviality from 2014 to 2023

These accounts satisfy the requirements, and 40 bank firms' financial reports are used as an example study. These include Cross Section (i): Nine financial institutions (2014Q1–2023Q N4) = Times Series (t) = $40 \times i = 40 \times 9$ Out of all the results, 360 panel data were gathered from the number of individual banking businesses and compared, or roughly 40 times, with quarterly financial reporting data of 40 series. (t)

RESULTS AND DISCUSSION

A statistical explanation The statistical explanation that addresses the mean, standard deviation, minimum, maximum, and quantity of observations is provided in this section. See the following table for further clarification:

Tabel 1 Statistical Descriptions					
	ROA	ROA	NPLN	LDR	Size
Mean	2.369138889	2.369138889	1.01	87.54908333	19.79378502
Standard Deviation	1.041846755	0.944255269	0.679344268	14.33054528	0.812101825
Minimum	0.02	0.03	0.01	0.88	18.3678285
Maximum	5.02	5.01	3.83	114.24	21.33044586
Count	360	360	360	360	360

Source: Data Processing Results (2024)

Analysis Statistics Descriptive

The financial performance variable, as determined by ROA, has an average value of 2,369, according to the table above. This finding makes sense given the company's generally poor capacity to develop all of its assets in order to increase (acquire) earnings. The average value of non-performing loans (NPLs), which represent business credit risk, is 1,01 and 2,669, respectively. According to this method, general banks' average credit risk is 2.67% < maximum limit of 5%, indicating that credit risk is still relatively low. The calculation of liquidity variables (LDRs) yields a ratio of 87.549, indicating that 87.55% of the acquired liquidity is available for use. The average bank size as determined by (SIZE) then produced a value of 19.793 of 19.79%. This outcome indicates that a bank's size has a reasonably high value, indicating that it is not a factor that determines the bank's financial success.

Testing the parameters of the analysis and the traditional assumptions—such as residual normality tests, multicollinearity tests, autocorrelation tests, and heteroskedasticity tests—is necessary to generate an efficient and effective model. Nonetheless, the following parts will be used to evaluate the traditional assumptions:

Test for normalcy In essence, tiny data sets are the only ones for which such test normality or residual normality should be used. To test for residual normality or normalcy, more data than n = 30 must be used if the central limit theorem is applied. The researchers in this study did not run a normality test on the data (n = 360 and greater

than $n = 30$). A normal distribution of the data is assumed by applying the central limit theorem.

To ascertain whether there is a link between any variable—both free and bound variables—the multicollinearity test is utilized. Finding the estimated result's Variance Inflation Factor (VIF) can be used to screen for multi-linearity symptoms.

Tabel 2 Multicollinearity test results with VIF

Variable	VIF	1/VIF
npln	2.30	0.435342
nplg	2.16	0.463698
ldr	1.45	0.687833
size	1.21	0.826340
Mean VIF	1.78	

Source: Data Processing Results (2024)

There is no multi-linearity between the independent variables if the VIF value is less than 0.10, and multi-collinearity exists if the value is greater than 0.10. Porter and Gujarati, 2012). The tolerance values of 0.435342 (NPLN), 0.463698 (NPLG), 0.687833 (LDR), and 0.826340 (Size) > 0.1 and at the VIF value of $1.78 < 10$ can be observed from the above table. Thus, it can be said that the four independent variables have a multicollinearity issue.

Tabel 3 Autocorrelation Test Results

Wooldrige test for autocorrelation in panel data		
H0:	no first-order autocorrelation	
	F(1, 8) =	62.092
	Prob > F	0.0000

Source: Data Processing Results (2024)

It is clear from Table 3 above that there is no auto-correlation issue with the regression model. An inequality of variations of error for all observations of each free variable in a linear regression model is known as the heteroskedasitistas problem. This test looks for a substantial connection between the residual and some free variables in the regression equation within a regression model.

Regression models with this issue lead to estimates that are skewed and inefficient. In this investigation, the Breus-Pagan/Coo-Weisberg test will be employed.

The test criterion states that the regression model is free of the heteroskedastisity issue if the value $(Prob > chi2) > 0.05$.

Tabel 4 Heteroscadastisity test			
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity			
Ho:	Constant Variance		
Variables:	Fitted values of roa		
	chi2 (1)	=	13.05
	Prob > chi2	=	0.0003

Source: Data Processing Results (2024)

The aforementioned table indicates that the Breus Pagan / Co-Weisberg test was used in this investigation. If the value $(Prob > chi2) > 0.05$ indicates that there are no heteroscedasticity issues in the regression model, then that meets the test criteria. Prior to utilizing unbalanced panel data regression for an evaluation, an estimating strategy that is appropriate for the goals of the study and the most suitable model must be chosen. The Chow Test and Hausman Test are used to choose estimates using an unbalanced panel in order to determine which model is appropriate or optimal for analysis.

Tabel 5 Panel Data Regression Results (Independent Variable = Financial Performance (ROA))

Variabel	Model CE	Model FE	Model RE
NPLG	.000	0.000 ^a	0.000
NPLN	.000	0.011*	0.005
LDR	.236*	0.000	0.000
Size	.000	0.560***	0.045
Konstanta	.000	0.970***	0.167
Obs.	360	360	360
R ²	520	0.1189	0.2955
F-stat/Wald chi2	96.186	23,98	97.29
Prob(F-stat)	.000	0.0000	0.0000
Uji Chow	-	0.0000	-
Uji Hausman	-	0.0000	-

Keterangan: ***sig.=1%, **sig=5%, *sig=10%, a= $p\text{-value}$

Source: Data Processing Results (2024)

Table 5 above indicates that when the test results demonstrate that $\text{Prob}>\chi^2 = 0.0000 < 0.05$, the fixed effect model is the one that was chosen. Nevertheless, the fixed effect model's application has violated the assumptions of autocorrelation and heteroscedasticity, as demonstrated by the findings of the classical assumption test. Thus, in order to get around these issues, the researchers in this study chose to employ the GLS fixed effect model, which is an alternate approach. Therefore, the adoption of the fixed effect model is practical and efficient even in the presence of autocorrelation and heteroscedasticity. because these assumption issues can be resolved by this paradigm. Researchers employed the Generalized Least Square (GLS) Panel Regression model to investigate the impact of credit risk, liquidity, and bank size on the financial performance of commercial banks listed on the Indonesia Stock Exchange. It is well known that homoscedasticity, or $E\sim\epsilon T \square =\sigma^2I$, is one of the assumptions that are satisfied while estimating the Ordinary-Least-Square (OLS) technique. Generalized Least Square (GLS) is the approach used to forecast the coefficients if there is a trade-off between the assumptions and the variances. In order for this method to estimate the coefficient and meet the requirements of the OLS model, it must first transform the linear regression model. Researchers employed the Generalized Least Square (GLS) Panel Regression model to investigate the impact of credit risk, liquidity, and bank size on the financial performance of commercial banks listed on the Indonesia Stock Exchange. It is well known that homoscedasticity, or $E\sim\epsilon T \square =\sigma^2I$, is one of the assumptions that are satisfied while estimating the Ordinary-Least-Square (OLS) technique. Generalized Least Square (GLS) is the approach used to forecast the coefficients if there is a trade-off between the assumptions and the variances. In order for this method to estimate the coefficient and meet the requirements of the OLS model, it must first transform the linear regression model.

Tabel 6 Estimated results of fixed effect GLS

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NPLG	-.5969375	.0591588	-.7128866	0.000
NPLN	.1014404	.0848635	-.064889	0.232
LDR	.0218772	.0032005	.0156043	0.000
SIZE	.7633322	.0515148	.6623651	0.000

C	-13.16421	1.085279	-15.29132	0.000
R-squared	390.16			
Prob(F-statistic)	0.0000			

Source: Data Processing Results (2024)

An intercept value of -13.164 is produced by the estimation results of the GLS fixed effect model in Table 6. Assuming all other factors remain unchanged, these findings demonstrate that the financial performance (ROA) of commercial banks during the pandemic decreased by -13.16% in Indonesian banks during the Covid-19 pandemic. NPLG and NPLN, the credit risk variables, with coefficient values of -.596 and .1014, respectively. Under ceteris paribus, all commercial banks' financial performance (ROA) will rise if credit risk (NPL) drops by 1%. Additionally, bank size (SIZE) has a positive coefficient value of 0.7633. According to this finding, all commercial banks' financial performance (ROA) will rise by 0.763% for every 1% growth in bank size (SIZE) during the COVID-19 pandemic, ceteris paribus. In the meantime, the liquidity variable's (LDR) coefficient value is positive at 0.0218. This means that, assuming ceteris paribus, with every 1% increase in liquidity (LDR), all commercial banks' financial performance (ROA) will rise by 0.001% during the Covid-19 pandemic.

CONCLUSIONS

From the analysis results, it was found that credit risk, liquidity, and bank size have a significant impact on the financial performance of banks during the COVID-19 pandemic. In the difficult economic conditions caused by the pandemic, good credit risk management, stable liquidity, and larger bank size have proven to support the financial performance of banks. This research is limited to conventional banks listed on the Indonesia Stock Exchange, so the results may not be generalizable to other types of banks or periods outside the pandemic. In the future, this research can be expanded by including other external variables, such as government policies or global economic conditions, for a more comprehensive analysis of the factors affecting the financial performance of banks.

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