International Journal of Application on Economics and Business (IJAEB)
Volume 1, Issue 4, 2023. ISSN: 2987-1972

THE IMPACT OF CREDIT RISK ON THE FINANCIAL PERFORMANCE OF INDONESIAN STOCK EXCHANGE-LISTED BANKS

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Submitted: 08-08-2023, Revised: 03-10-2023, Accepted: 07-11-2023

ABSTRACT

The important role of banks as financial institutions tasked with collecting and distributing funds in the form of loans to the public aims at economic growth and the improvement of social welfare. In the big bank war, public trust is needed to save money in banks whose health is the top priority. To examine the health of your bank, you can use the Nonprofit Lending Ratio (NPL) analysis. The following applies. The lower the bad debt amount, the lower the credit risk borne by the bank and the better the financial performance of the bank. The purpose of this study is to empirically prove how the level of credit risk as measured by NPL ratio reduces or increases the financial performance of Bank Indonesia as measured by ROA and ROE. The study design is a descriptive quantitative approach. The study population includes all banking companies listed on the IDX for the period 2018-2021. The study sample used a sampling technique using a targeted sampling technique with a sample of 176 observations. This study uses panel data regression starting with model testing, classical assumption testing, and statistical testing. Statistical t-test results show that high bank credit risk can affect financial performance. Our contribution is for Management can work to raise the bank's health level by increasing third party funds (DPK), which will encourage clients to maintain their money in the institution, so raising the bank's health level to a healthy condition. Banks employ a variety of techniques, such as developing new innovations to boost customer security while also paying close attention to the issue of customer accessibility to raise customer pleasure, which in turn has an impact on boosting customer loyalty.

Keywords: *Credit risk, ROA, ROE*

1. PREFACE

Background

The banking industry has an important role in efforts to increase economic growth and community welfare. This is because banks are financial institutions whose task is to collect and distribute funds to the community in the form of loans (UU RI No.12, 1998). The task of banking must be supported by public trust in depositing funds in banks where the bank's health level is the main thing to consider. To determine the health level of a bank, Non-Profit Loan (NPL) financial ratio analysis can be used, namely the ratio used to measure credit risk which is associated with the possibility of a client failing to pay its obligations or the risk that the debtor will not be able to pay off its obligations (Ekinci & Gulden, 2019); (Irawati et al., 2019). Apart from that, NPL is a risk that describes the ability of bank management to manage problem loans (Nurkhofifah et al., 2019). The smaller the NPL, the smaller the credit risk borne by the bank, thereby improving banking financial performance (Nurkhofifah et al., 2019). Where in this research, Return on Assets (ROA) and Return on Equity (ROE) are used.

There has been a lot of research conducted with inconsistent results regarding banking credit risk on financial performance, so the background for this research is to use two proxies (ROA and ROE) for measuring banking financial performance to see the sensitivity analysis.

The aim of this research is to prove empirically how the level of credit risk proxied by the Non-Profit Loan (NPL) ratio affects financial performance, proxied by ROA and ROE, in banking sector companies in Indonesia.

Our Contribution

Management can work to raise the bank's health level by increasing third party funds (DPK), which will encourage clients to maintain their money in the institution, so raising the bank's health level to a healthy condition. Banks employ a variety of techniques, such as developing new innovations to boost customer security while also paying close attention to the issue of customer accessibility to raise customer pleasure, which in turn has an impact on boosting customer loyalty.

2. LITERATURE REVIEW

Signaling Theory

According to Brigham and Houston (2006: 46), the signal or signal is an action done by the management of the company that provides hints to investors about how management regards the prospect of the company. Companies with bright futures will strive to avoid selling shares and will look for any additional cash through other means, such as using debt that exceeds the standard capital structure targets. The signal theory is predicated on the idea that each party does not get the same information. In other words, information asymmetry is an issue of signal theory. Information asymmetry between the management company and the parties with an interest in the information is present, according to signal theory. To that aim, management must release financial statements that contain the information that interested parties seek. Based on signal theory, information on bank health levels, which is proxied by NPL, can maintain customer trust (customer loyalty) towards the bank. The impact is that banks can collect funds from customers so that they can improve their financial performance.

Bank Credit Risk

Credit risk is defined as losses faced by banks when borrowers fail to fulfill debt obligations on the given due date or when the loan matures and can lead to bankruptcy, if not managed properly (Saleh & Afifah, 2020). Banks use loans as their main income base, which is simultaneously vulnerable to several risks that can threaten operational activities if they are not properly analyzed and managed by the bank's credit (Saleh & Afifah, 2020).

Credit risk can be calculated using the non-performing loan formula divided by the total liabilities owned by the bank (Ekinci & Gulden, 2019). According to Bank Indonesia, a bank is in good health when its NPL value is below 5%. And if the NPL value exceeds 5%, it can be concluded that the profit received by the Bank will decrease (Saleh & Afifah, 2020).

Financial Performance (ROA and ROE)

Return on Assets (ROA) is a ratio that shows how much assets contribute to creating net profit (Husna & Satria, 2019); (Utami & Hasan, 2020). The ROA ratio is formulated as net profit divided by the number of assets owned by the bank. Return on Equity (ROE) is a proportion that shows how much value is added to produce overall profits (Pointer & Khoi, 2019) ;

(Mudzakar et al., 2021). The ROE ratio can be calculated by dividing net profit by the amount of capital owned by the bank.

Hypothesis Development

In research results, (Isah, 2018) proves that high bank credit risk can reduce the financial performance of banks in Uganda. According to (Isah, 2018); (Ghenimi et al., 2017) that with a high level of credit risk, credit is considered problematic which can cause banks to be hit by major liquidity and financial crises. Isah's research supports the research of (Muriithi et al., 2016) found that bank credit risk has a significant negative impact on the financial performance of commercial banks in Kenya in the short and long term. Apart from that, research results from (Nurkhofifah et al., 2019) on Turkish banks also show that high levels of credit risk can reduce bank financial performance. This means that when the NPL value of banks in Turkey increases, the capital used by the bank to invest decreases, which has an impact on decreasing company profits (financial performance).
H1a: Banking credit risk has a negative effect on banking performance (ROA).
H1b: Banking credit risk has a negative effect on banking performance (ROE).

3. RESEARCH METHODS

Population and Samples

The population used in this research is all banking companies for the 2018-2021 period listed on the Indonesia Stock Exchange (BEI). In this research, not all companies were used, only companies with predetermined criteria could be used as samples. The sample of banking companies in this research can be seen from the website www.sahamok.com and data on the companies concerned can be obtained from the official website of the Indonesia Stock Exchange (BEI), namely www.idx.co.id. The sampling technique uses a purposive sampling method, with the aim of obtaining samples in line with predetermined criteria.
The following are several criteria that will be used as research samples: (1) Listed on the Indonesia Stock Exchange (BEI) continuously during the 2018-2021 period; (2) The financial reports use the rupiah currency (symbol: IDR); (3) Not conducting an IPO in the 2018-2021 period; (4) Not experiencing delisting from the Indonesian Stock Exchange (BEI) in the 2018-2021 period

Data Analysis Technique

In this study, a quantitative method is used with a descriptive design. Panel regression data analysis techniques were utilized in this study's quantitative data analysis to process financial data. By laying out specific hypotheses, panel regression is used to test a theory. Data is then gathered to either support or deny the hypothesis based on statistical data (t test and F test) (Muriithi et al., 2016); (Creswell, 2014).

Variables and Measurement

Table 1 The Operationalization of Variables

Variables	Measurement
1. Dependent	
Return On Equity (ROE) (Fahmi, 2014)	$ROE = \frac{\text{Net Income}}{\text{Total Equity}}$
Return On Assets (ROA) (Fahmi, 2014)	$ROA = \frac{\text{Net income}}{\text{Total Assets}}$
2. Independent	
Credit Risk (Ramazan Ekinci dan Gulden Poyraz, 2019)	*Non-performing loan (NPL)*
3. Control	
Bank Size Dang et al. (2019)	Logarithm of the company's capitalization value.
Liquidity Afriyeni, A. (2017)	$LDR = \frac{\text{Total loans}}{\text{Total Deposit}} x100\%$

Regression Equation

$$ROA_t = a_{it} + bRISK_{it} + cLDR_{it} + dSIZE_{it} + e_{it} \quad (1)$$
$$ROE_t = a_{it} + bRISK_{it} + cLDR_{it} + dSIZE_{it} + e_{it} \quad (2)$$

Notes:
ROA & ROE = Bank's Financial Performance
RISK = Credit Risk
LDR = Liquidity (Loan-to-Deposit Ratio)
SIZE = Bank Size
e = *Error*

4. RESULTS AND DISCUSSIONS

Descriptive Statistical Analysis

Table 2 Descriptive Statistics

	Risk	Liquidity	BS	ROA	ROE
Mean	0.039	0.902	31.25	0.012	0.020
Median	0.030	0.840	30.86	0.008	0.044
Max.	0.308	7.614	35.08	0.272	0.312
Min.	0.000	0.123	27.22	-0.16	-0.95
Std.Dev	0.042	0.581	1.798	0.044	0.183
Prob.	0.000	0.000	0.104	0.000	0.000
Observation	176	176	176	176	176

Source: EViews 12 Output

From the table above, it can be explained that the average banking credit risk is 3.9%, which means it is still safe because it is below Bank Indonesia's regulations, namely 5%. In terms of the size of banks in Indonesia, the average size is 31.25.

Hypothesis Testing Results

This research uses two models with financial performance (Y1) measured by ROA and financial performance (Y2) measured by ROE. Both research models were model tested. Model 1 was tested using the Chow test to produce a common model, then carried out the Lagrangian multiplier test and a random effect model was produced, with a probability value of less than 5% (0.0486). Model 2 was tested using the Chow test to produce a common effect model, and continued with the Lagrangian multiplier test which produced a probability value of more than 5% (0.9854) so that model 2 used a common effect model.

Next, a classical assumption test was carried out on the data. According to Central Limit Theory assumptions, if the research data exceeds 30, the next step is to carry out a multicollinearity test where the results are:

Table 3 Multicollinearity

	Risk	**Liquidity**	**Bank Size**
Risk	1.0000	-0.0253	0.1109
Liquidity	-0.0253	1.0000	-0.1302
Bank Size	1.0000	-0.0253	0.1109

Source: EViews 12 Output

From Table 3, it can be concluded that the data does not experience multicollinearity because the data between independent variables shows a correlation below 0.9, so it is concluded that there is no multicollinearity relationship (Ghozali, 2013).

The next step is to carry out a heteroscedasticity test using the Glejser test. The results of the Glejser test show that both research models experience heteroskedasticity, so they require treatment using the inverse, not logarithms, because the ROA and ROE data are negative.

Table 4 Model 1 After Inverse Treatment

Variable	**Coefficient**	**t-Stats**	**Prob.**
C	-0.00322	-0.52137	0.6030
D(Risk)	0.293034	3.141900	0.0021
D(BS)	0.008168	2.670239	0.0086
D(Liquidity)	0.005826	0.688191	0.4926
Adjusted R^2	0.130826	DW stats.	3.2173
F-stats.	7.572621		
Prob.(F-stats.)	0.000106		

Source: EViews 12 Output

Table 5 Model 2 After Inverse Treatment

Variable	Coefficient	t-Stats	Prob.
C	0.00619	0.303233	0.7622
D(Risk)	-0.6478	-2.10099	0.0376
D(BS)	0.04824	4.770938	0.0000
D(Liquidity)	0.01072	0.383173	0.7022
Adjusted R^2	0.16024	DW stats.	3.11418
F-stats.	9.33265		
Prob.(F-stats.)	0.00001		

Source: EViews 12 Output

The next step is the Autocorrelation test and the results are for both autocorrelation-free models as shown in the table below:

Table 6 Autocorrelation Model 1

R-squared	0.154380	Mean dependent var	0.012609
Sum squared residual	0.294465	Durbin-Watson stats.	2.195165

Source: EViews 12 Output

Table 7 Autocorrelation Model 2

R-squared	0.173247	Mean dependent var	0.020453
Sum squared residual	4.855756	Durbin-Watson stats.	1.918802

Source: EViews 12 Output

Based on the Autocorrelation Table with data k is 3 independent variables and the number n is 176, the du value is 1.7881. In conclusion, for research model 1 with a dW value of 2.195165, there is no autocorrelation because based on the formula, namely du< DW< 4- du, where the statistical dw value is between 1.7881 < 2.1951 < 2.2119. For research model 2 with a dW value of 1.918802, there is no autocorrelation because it is based on the formula, namely du<dW<4- du, where the statistical dW value is between 1.7881 < 1.918802 < 2.2119.

Discussion

This research uses two models which are processed using panel data tests to produce the following research model:

Research Model 1 *Random Effect* :
ROA = -0.003 + 0.293*D(Risk) + 0.008*D(BS) + 0.005*D(Liquidity)

Research Model 2 *Common-Effect* :
ROA = 0.006 - 0.647*D(Risk) + 0.048*D(BS) + 0.010*D(Liquidity)

Coefficient of Determination Test

Based on Table 4, the adjusted R^2 value is 0.130826. This means that the variables credit risk, bank size and liquidity statistically influence bank financial performance by 13.08%, and the remaining 86.92% is explained by other variables not examined in this research. Meanwhile, based on table 5, the adjusted R^2 value is 0.16024, which means that the variables credit risk, bank size and liquidity statistically influence the bank's financial performance by 16.02%, and the remaining 83.98% is explained by other variables not examined in this research.

F-Test

The results of the F-statistical test can be seen in Tables 4 and 5 where both show significant results with alpha values below 5%, namely 0.000106 and 0.00001. The results of the F-test show that the variables bank credit risk, bank size and bank liquidity can increase / decrease the financial performance of banks listed on the IDX.

t-Test

The statistical t-test results based on Tables 4 and 5 prove that H1a and H1b are accepted with probability values of less than 5% (0.0021) and (0.0376). This means that a high level of banking credit risk can reduce financial performance. The reason is because the credit risk level is high, credit is considered problematic which can cause banks to be hit by major liquidity and financial crises (Isah, 2018). In addition, a high level of bank credit risk can reduce the bank's financial performance, causing the capital used by the bank to invest to decrease, which has an impact on reducing company profits/financial performance (Ghozali, 2013).

The bank size control variable in Tables 4 and 5 gives the same results, namely that it can improve banking financial performance. This is because larger banks can provide more information for investment purposes, because large banks receive more public attention, resulting in more accurate reporting (John & Olagunju, 2013); (Aprianingsih & Yushita, 2016). Different results for the liquidity control variable give results that have no effect on banking financial performance with a probability value of more than 5% in tables 4 and 5. This may be because banks do not want to set liquidity levels that are too high or too low. Bank Indonesia has set a standard liquidity level of between 80% and 110%. Bank liquidity levels that are below standard indicate a lack of bank effectiveness in distributing credit. On the other hand, a bank's liquidity level that is above standard will increase the bank's liquidity risk (Purwoko & Sudiyatno, 2013); (Natalia, 2015).

The implication of the research results for banking is that bank management must pay attention to every risk that could hamper the company's credit risk. Banks must manage credit risk as best as possible in order to reduce credit risk which hinders companies from making profits. One way to increase bank profits is to increase the bank interest rate. A higher interest rate increases the bank's profit, because a higher interest rate increases the bank's profit. In addition, bank management must concentrate more on their intermediation function, namely distributing credit; banks need to increase their assets to benefit from economies of scale, one way is by increasing the amount of credit disbursed; and managing credit risk by conducting a comprehensive credit analysis and being more careful in disbursing credit.

5. CONCLUSIONS AND RECOMMENDATIONS

On average, Indonesian banks have a credit level that is still safe under BI regulations, namely 5% NPL. So, the level of credit risk can improve banking financial performance. If the level of banking credit risk is high, it is considered problematic credit, which can cause the bank to be hit by major liquidity and financial crises. The novelty of this research is using two proxies (ROA and ROE) for measuring banking financial performance to see the sensitivity analysis, whether high or low levels of credit risk can increase/decrease bank financial performance as proxied by ROA and ROE. The bank size variable as a control variable proves that the results can improve bank performance. Different results are proven by the liquidity control variable not being able to improve banking financial performance. This research provides suggestions for further research, namely conducting research on factors other than credit risk that can influence bank financial performance (apart from bank size and level of liquidity). Suggestions for management are to increase the principle of prudence and objective follow-up on customer credit applications.

ACKNOWLEDGMENT

This project has received financial support from Universitas Tarumanagara, represented by the Institute for project and Community Service, in order to be finished on schedule, i.e. between January and June 2023.

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