

**THE INFLUENCE OF CREDIT RISK AND LIQUIDITY RISK ON
THE PERFORMANCE OF BANKS LISTED ON
THE INDONESIAN STOCK EXCHANGE**

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Abstract

In recent years, the banking sector in Indonesia has attracted significant attention due to its role in the country's economic development. As a vital component of the financial system, banks play a crucial role in allocating funds, supporting economic activities, and ensuring financial stability. Amidst the evolving landscape of financial markets and regulatory changes, understanding the factors that influence the performance of conventional banks has become a pertinent area of research. This study aims to test and analyze the effect of credit risk, measured by non-performing loans, and liquidity risk, measured by liquid assets to total assets, as well as control variables such as bank size, gross domestic product, and inflation on bank performance, measured by return on assets in 39 conventional banks listed on the Indonesia Stock Exchange for 5 years (2016 - 2020). This study employs a quantitative approach, utilizing panel data analysis – a blend of time series and cross-sectional data. The results of the analysis show that non-performing loans have a negative and significant effect on return on assets. Liquid assets to total assets also have a negative and significant effect on return on assets. The control variable of bank size has a positive and significant effect on return on assets. Similarly, the control variable of gross domestic product has a positive and significant effect on return on assets. Additionally, the inflation control variable has a positive and significant effect on return on assets.

Keywords: Bank Performance, Credit Risk, Liquidity Risk

1. INTRODUCTION

Banking has a strong influence on a country's economic system as it plays a vital role in promoting economic growth. Economic growth leads to development with the objective of enhancing the quality of life for the community. A well-functioning bank contributes to better economic conditions in the country it operates in. The size of the bank and the involvement of various stakeholders, such as depositors, creditors, and shareholders, also play a crucial role in the country's economy. The overall health of the banking sector significantly impacts the strength of a country's economy (Abbas et al., 2019).

Banking has a broad scope and involves a large potential risk compared to other sector companies due to its involvement in the credit business. As financial service providers, banks play a crucial role in the economy and are closely tied to economic growth. One of the ways to accelerate a country's economic growth in the long term is by channeling bank credit to the public (Al-Husainy & Jadah, 2021). Credit risk clearly has a negative effect on the role of banks as intermediaries for economic growth. The higher

the level of credit risk, the greater the likelihood of banks experiencing losses or financial crises, which ultimately impacts the bank's performance (Kingu et al., 2018).

Loans given by banks to debtors must be carefully analyzed to ensure that the credit provided can be repaid in accordance with the agreed-upon terms by both parties. Banking activities involving the collection and distribution of funds often experience discrepancies, both in terms of the amount of funds and the maturity period. If the amount of funds raised is smaller than those channeled, it can lead to a situation where the bank is unable to provide funds when it needs to fulfill its obligations. Banks mostly raise funds in the short term, while lending is done in the long term. This mismatch can cause banks to experience liquidity risk (Badawi, 2017). Insufficient liquidity will reduce profitability as it hinders the availability of cash to meet additional costs. Effective liquidity management is crucial to increase the stability and health of banking companies in meeting their liquid assets and to avoid the risk of bankruptcy (Al-Husainy & Jadah, 2021). Liquidity risk is important because it can affect the performance of a bank, where the bank will act as a dominant financial intermediary (Citra et al., 2021). The higher liquidity risk in a bank can indicate that the amount of funds channeled to third parties, in the context of debtors, in the form of credit is also considered to be greater.

Circular letter No.1/SEOJK03/2019 issued by the Financial Services Authority states that in banking there are six risks, including credit risk, operational risk, compliance risk, liquidity risk, reputation risk, and strategic risk. With regard to this research, the author only focuses on two main risks that are directly related to the activities carried out by banks, namely credit risk and liquidity risk. Bank Indonesia reported that credit risk began to increase in the first quarter of 2020 with a percentage of credit risk of 11.6%. The figure rose dramatically to 20.66% in the second quarter of 2020 and reached a peak of 23.38% in the third quarter of 2020. Credit risk began to decline to 23.38% in the fourth quarter of 2020. The figure also increased its decline to 23.29% in the first quarter of 2021 and in the second quarter of 2021 it stopped at 22.67%. On the other hand, the Deposit Insurance Corporation (LPS) also said that banking liquidity is still loose at 78.0%. The loose liquidity is reflected in the high liquidity assets which are dominated by placements in Government Securities and at Bank Indonesia. The liquidity risk percentage ratio stated in Bank Indonesia Regulation No. 15/7/PBI/2013 states that liquidity risk has a lower limit of 78%, while the upper limit for liquidity risk is 92% - 100%.

Research conducted by (Jagtiani & John, 2018), found that credit risk has a significant influence on profitability and bank performance. The high credit risk causes bank performance to decline so that effective financial intermediation is needed, especially on loan disbursements. (Huong et al., 2021) stated that liquidity risk has a positive effect on bank performance. Good performance has high liquidity risk under normal conditions.

Previous research conducted by (Al-Husainy & Jadah, 2021), in banking companies listed on the Iraq Stock Exchange for the period 2010-2020 regarding the effect of credit risk and liquidity risk on bank performance is a reference in making the research conducted. Researchers intend to conduct research in Indonesia using similar variables, namely independent variables using credit risk and liquidity risk variables, dependent variables, namely bank performance variables, and control variables are bank size, gross

domestic product, and inflation. This study aims to analyze the effect of credit risk and liquidity risk on the performance of banks listed on the Indonesia Stock Exchange.

2. LITERATURE REVIEW

2.1. Bank Performance

Bank performance is a reflection of the success or achievement obtained through activities that have been carried out by banks in managing financial resources which in this case includes financial performance. Financial performance is an analysis made to assess how a company can apply the rules in financial implementation appropriately. Bank performance describes the financial condition of the bank as a collector and distributor of customer funds in a certain period. Research conducted by (Danish et al., 2021), mentioned that financial performance is measured by the Return on Asset profitability ratio which is calculated by entering total net income divided by total assets. Return on Asset can be described as the quality of management that shows the bank's ability to operate banking activities whether it runs efficiently and effectively (Koju et al., 2018). Return on Asset as a key indicator of bank performance that can be used to monitor changes in asset efficiency over time.

2.2. Credit Risk

According to the regulation of the Financial Services Authority Number/POJK.04/2019, credit risk is a risk that occurs due to the bank's negligence in not properly calculating the potential for default or failure to deliver to its counterparty, namely the debtor. In the context of banking, if the bank lends too much, the bank will have a greater credit risk, making it difficult for the bank to meet the demands of depositors. Credit risk indicates the risk of delay or failure in loans or interest owed, where the lender is in a state of financial difficulty after losing capital and interest to return deposits to their owners or pay other obligations (Al-Husainy & Jadah, 2021). Research conducted by (Saleh & Abu Afifa, 2020), stated that credit risk is a risk that has the potential for loss to the bank because the borrower is unable to fulfill debt obligations. Credit risk requires special attention to be handled by banks because it affects the sustainability of bank operations and growth. Good handling of credit risk will have an impact on increasing bank performance and increasing profitability, while poor handling of credit risk will have an impact on decreasing bank performance, which will also have an impact on decreasing bank profitability.

2.3. Liquidity Risk

Banks are significantly vulnerable to liquidity risk. Liquidity risk is stated as the risk arising from banks that are unable to fulfill obligations to depositors originating from fund disbursement activities (POJK.04/2019). High liquidity risk tends to occur in banks due to the potential for customers to withdraw funds excessively at the same time. Liquidity risk occurs as a result of the bank's inability to cover its short-term liabilities from unexpected funding needs. Liquidity risk is characterized as the possibility that a bank is unable to meet its maturing obligations (Al-Husainy & Jadah, 2021). Liquidity risk causes banks to face the risk of excess and shortage of cash. Banks that have a lot of

cash will face high interest costs and can reduce the level of profitability of the bank, while if the bank experiences a cash shortage, the bank will try to increase the cash balance through the issuance of long-term debt (Saleh & Abu Afifa, 2020).

2.4. Bank Size

Bank size is an indicator that reflects the size of the assets owned by the bank to carry out its operational activities (Lestari, 2020). The size of the bank generally determines the level of operational efficiency that the bank is able to achieve, which places the bank's position in economies of scale. (Sahyouni & Wang, 2019) The category of bank size is seen from the assets it has. Banks are categorized as large if they have large total assets, while small banks lead to banks that have small total assets (Makkar & Hardeep, 2018). Bank size in this study uses the natural logarithm of the bank's total assets. Lee, (Lee et al., 2015), in his research states that bank size can also be described as the health of a bank, where the size of the bank is calculated from the total assets of the bank. The amount of assets owned by the bank reflects the high public trust in the bank so that the amount of public funds collected in the form of savings, current accounts, and deposits will be greater and can be channeled into credit, where from these credit activities the bank will generate interest income, so that bank profitability increases.

2.5. Inflation

Inflation is a condition in a country where there is a circulation of money that is too high in the community so that it reduces the value of the nominal money. Some things that can affect the increase in the inflation rate include the amount of money in circulation, money demand and monetary balance. Inflation in its spread not only affects the real sector but also the financial sector (Ali et al., 2018). Unexpectedly high inflation rates can lead to a decline in bank profitability, especially if not projected by the bank's management. A high inflation rate results in the involvement of a country's economic boom, resulting in a high increase in economic activity including the demand for loans to banks by debtors (Bolarinwa & Soetan, 2019).

2.6. Gross Domestic Product

Gross Domestic Product is the sum of all the value of goods and services produced by a country within a certain time, including the production of goods and services by companies owned by residents of the country and also residents of other countries living in the country concerned (Ibrahim, 2016). Gross Domestic Product is the sum of the additional value generated by all business units in a country in a given year. Gross Domestic Product can be useful to provide an overview regarding the level of prosperity of the country by dividing it by the population, as well as can be used to analyze the level of social welfare of the community, and can reflect the level of productivity of a country. Economic growth is measured using gross domestic product growth or the level of gross domestic product (Messai & Jouini, 2013). Hasil perhitungan produk domestik bruto menggunakan tingkat pertumbuhan tahunan produk domestik bruto (Hamid Mohsin Jadah et al., 2016) An increase in annual gross domestic product growth represents the growth of economic activity which can be seen as a macroeconomic determinant of bank profitability. The amount of business results obtained by the state will affect the per capita

income of the community, so that when income increases, the desire of the community to save funds to banks is also getting higher.

2.7. The Effect of Credit Risk on Bank Performance

Credit risk is said to be a loss that will be experienced by the bank, which is related to the failure of the debtor to fulfill obligations when payments are due to the bank. The ratio of non-performing loans or non-performing loans is the basic measure to calculate credit risk. Non-performing loans refer negatively, which means that if non-performing loans increase, the profitability of banking companies will decrease. This statement is justified by research conducted by (Kingu et al., 2018), which found that non-performing loans have a negative effect on return on assets. The results of this study are also in accordance with research conducted by (Dewi & Badjra, 2020) which stated that non-performing loans have a negative and significant effect on return on assets.

Herry, (2015) in his research stated that non-performing loans have a positive effect on return on assets. It is stated that if the non-performing loan ratio is still below the tolerance required by the Financial Services Authority, which is less than 5%, the bank still has the opportunity to control credit risk. This means that bank profitability will increase. Based on the results of the above research, the following hypothesis can be formulated :

H₁ : Credit Risk affects Bank Performance

2.8. The Effect of Liquidity Risk on Bank Performance

Liquidity risk is the main focus that must be minimized by banks, considering that bank liquidity management has an impact on public trust that will help operational activities and bank existence. Research conducted by (Sanger et al., 2016), shows that the liquidity ratio of liquid assets to total assets ratio has a significant positive effect on the return on assets profitability ratio. Research conducted by (Al Nimer et al., 2015; Golubeva et al., 2019) supports this statement, stating that the liquidity ratio Liquid assets to total assets ratio has a significant positive effect on the return on assets profitability ratio. The high risk of bank liquidity will increase the bank's motivation to obtain profitability.

Research conducted by (Saif-Alyousfi et al., 2018) stated different things, in his research it was stated that the liquidity ratio of liquid assets to total assets ratio had a significant negative effect on the profitability ratio of return on assets. The high liquidity risk reflects the poor financial liquidity of the bank, so that it can eliminate public confidence to save and borrow funds at the bank. Based on the results of the above research, the following hypothesis can be formulated:

H₂ : Liquidity Risk affects Bank Performance

2.9. Effect of Bank Size on Bank Performance

The size of the bank shows that the bank has a large amount of assets, where these assets can finally be utilized as resources which will then be used maximally and efficiently to obtain and achieve profits, this is because the bank has sufficient funding to finance its operational activities. One of the main activities is to provide selective credit to debtors, so that as a result of the provision of credit the bank will get a return which

has an effect on increasing bank profits. This statement is in line with research conducted by (Nyarko-Baasi & Forson, 2018) which found that company size has a positive influence on profitability. This statement is supported by research from (Hamid Mohsin Jadah et al., 2016), which also states that bank size has a positive influence on bank financial performance, which also affects the profitability obtained. Based on the results of the above research, the following hypothesis can be formulated:

H3 : Bank Size affects Bank Performance

2.10. The Effect of Growth Domestic Product on Bank Performance

Growth domestic product growth is generally used to measure total economic activity that can affect the demand and supply of banking services. Petria, (Petria et al., 2015), stated in his research that GDP growth has a positive effect on bank financial performance. A good economic environment will help banks to increase profits. The research results and statements are in line with the research conducted by (I. Hasan & Xie, 2013; Riaz & Mehar, 2013), which found that the growth of growth domestic product has a significant positive effect on bank financial performance. On average, developing countries have a high level of credit demand, so that from the credit demand, the bank will set higher interest rates as well, so that the effect on the bank will be an increase in profitability.

These results are different from the testing and analysis conducted by (Kiganda et al., 2017), where in his research found that growth domestic product has a negative effect on return on assets. This is because economic growth causes banks to experience lower demand acceptance in financial services. Based on the results of the above research, the following hypothesis can be formulated:

H4 : Growth Domestic Product affects Bank Performance

2.11. The Effect of Inflation on Bank Performance

Inflation is stated to have a positive influence on bank financial performance based on research conducted by (Landajuela et al., 2021). This statement is in line with research conducted by Hoosyahri & MaghnoI, (2015), which also states that rising inflation has a positive effect on bank profitability because it increases loan demand. Other research conducted by (Jadah et al., 2020), expressed a different opinion. Inflation is stated to have a significant negative effect on the achievement of bank profitability, where an increase in inflation will have an impact on banks having to reduce the value of bank interest rates, so that bank profitability will also decrease. Based on the results of the above research, the following hypothesis can be formulated:

H5: Inflation affects Bank Performance

3. RESEARCH METHODS

The research method used in this study is a quantitative approach, specifically employing panel data analysis. Panel data analysis is a combination of time series and cross-sectional data, which allows for the examination of both individual and time-specific effects. This approach is suitable for studying the relationships between variables

over multiple periods and across different entities, in this case, 39 banking financial sector companies listed on the Indonesia Stock Exchange.

The study utilizes purposive sampling to select the sample units, which are the 39 conventional banks listed on the Indonesia Stock Exchange during the period from 2016 to 2020. Purposive sampling is a method of selecting samples based on specific criteria, ensuring that the chosen banks meet the requirements for the research objectives.

The main variables under investigation are credit risk, liquidity risk, bank size, inflation, GDP, and bank performance, which is measured by return on assets. Credit risk is typically measured using non-performing loans, while liquidity risk is assessed by the proportion of liquid assets to total assets.

The data collection process involves gathering relevant financial data and economic indicators for the selected banks and the corresponding time periods. These data are then processed and analyzed using statistical software, such as *Eviews* 10.0, to test the formulated hypotheses and draw meaningful conclusions about the impact of the independent and control variables on bank performance.

4. RESULTS AND DISCUSSION

4.1. Research Results

4.1.1. Descriptive Statistical Analysis

Table 1. Descriptive Statistical Analysis Results

Variabel	N	Minimum	Maximum	Mean	Std. Dev
Return On Asset	195	-0.095800	0.111500	0.013761	0.018925
Non- Performing Loan	195	-0.033000	0.099200	0.020097	0.015176
Liquid Asset to Total Asset	195	0.596700	0.996400	0.933361	0.045891
Bank Size	195	13.21410	30.28140	20.09628	4.387962
GDP Growth	195	-2.069543	5.174292	3.645153	2.865225
Inflation	195	1.680000	3.610000	2.832000	0.644941

Source: Eviews 10.0 Data Processing Results

The table of descriptive statistical analysis depicts the following:

1. Return On Asset (ROA) shows a maximum value of 0.111500, which belongs to Bank Of India Indonesia Tbk in 2016. This indicates that the net income achieved a profit of 11.1500% of the total assets held by the bank. The minimum value of -0.095800 is from Bank Banten Tbk in 2016, meaning that the net income resulted in a loss of -9.5800% of the total assets. The average (mean) value is 0.013761, with a standard deviation of 0.018925.
2. Non-Performing Loan (NPL) has a maximum value of 0.099200, owned by Bank Neo Commerce Tbk in 2018. This implies that the maximum troubled credit risk faced by the bank is 9.92% of the total loans given, which could result in a decrease in profit due to the credit risk exceeding the acceptable threshold

of 5%. The minimum value of -0.033000 is from Bank Amar Tbk in 2019, indicating that the troubled credit risk faced by the bank is -3.3% of the total loans given, allowing the bank to still achieve profit as the credit risk is below the acceptable threshold of 5%. The average (mean) value is 0.020097, with a standard deviation of 0.015176.

3. Liquid Asset to Total Asset (LTA) shows a maximum value of 0.996400, which belongs to Bank Ina Perdana Tbk in 2016. This means that the liquid assets used for operational liquidity of the bank are sufficient, amounting to 99.64% of the total assets. The minimum value of 0.596700 is from Bank Capital Indonesia Tbk in 2020, indicating that the bank utilizes liquid assets for operational activities only to the extent of 59.67% of the total assets. The average (mean) value is 0.933361, with a standard deviation of 0.045891.
4. Bank Size (BSIZE) has a maximum value of 30.28140, held by Bank Mestika Dharma Tbk, and a minimum value of 13.21410, owned by Bank Amar. The average (mean) value is 20.09628, with a standard deviation of 4.387962.
5. Gross Domestic Product Growth (GDPG) shows a maximum value of 5.174292 and a minimum value of -2.069543. The average (mean) value is 3.645153, with a standard deviation of 2.865225.
6. Inflation (INFL) has a maximum value of 3.610000 and a minimum value of 1.680000. The average (mean) value is 2.832000, with a standard deviation of 0.644941.

4.1.2. Chow Test

Tabel 2. Chow Test Result

Dependent Variable	Chi-Square	Probability	Decision
Return On Asset	71.514901	0.0008	H0 rejected so Ha was accepted. The selected model is Fixed Effect

Source: Eviews 10.0 Data Processing Results

Based on the Chow Test results table, Return On Asset has a cross-section chi square probability value of 0.0008 < 0.05. This means that the decision obtained is that H0 is rejected so that the most appropriate model to use is the fixed effect. Determination of the fixed effect requires the Hausman Test to be carried out to see whether the next model used is fixed effect or random effect.

4.1.3. Hausman Test

Table 3. Hausman Test Results

Dependent Variable	Chi-Square	Probability	Decision
Return On Asset	93.823941	0.0002	H0 is rejected so Ha is accepted

Source: Eviews 10.0 Data Processing Results

Based on the Hausman Test table, Return On Asset has a cross-section statistic probability value of $0.0002 < 0.05$. This means that the decision obtained is that H_0 is rejected. The most appropriate model to use is fixed effect.

4.1.4. F Test

Table 4. F Test Result

Dependent Variable	F-Statistic	Probability	Decision
Return On Asset	2.170040	0.000320	H0 rejected

Source: Eviews 10.0 Data Processing Results

Based on the F Test results table, Return On Asset has an f-statistic probability value of $0.000320 < 0.05$. This means that the decision obtained is H_0 rejected, so that the independent variables consisting of credit risk (non-performing loans) and liquidity risk (liquid assets to total assets) as well as control variables consisting of bank size, gross domestic product, and inflation have an influence on return on assets. The test results mean that this study has a regression model that is feasible to use.

4.1.5. Goodness of Fit Test (R^2)

Table 5. Goodness of Fit Test Results (Adjusted R^2)

Dependent Variable	R-Square	Adjusted R-Square
Return On Asset	0.901760	0.871060

Source: Eviews 10.0 Data Processing Results

Based on the Goodness of Fit Test results table, Return On Asset has an adjusted R-square value of 0.871060. This means that the independent variables consisting of credit risk (non-performing loans) and liquidity risk (liquid assets to total assets) as well as control variables consisting of bank size, gross domestic product, and inflation are able to explain variations in the dependent variable, namely return on assets by 87.1060% and the remaining 12.894% can be influenced by other factors not contained in the research model. The test results explain that the relationship between the independent variables consisting of credit risk (non-performing loans) and liquidity risk (liquid assets to total assets) as well as control variables consisting of bank size, gross domestic product, and inflation on the dependent variable return on assets is relatively strong.

4.1.6. Multiple Regression Analysis

This study uses regression analysis which aims to examine the effect of independent variables of credit risk (non-performing loans) and liquidity risk (liquid assets to total assets) as well as control variables (bank size, gross domestic product, and inflation) on the dependent variable of bank performance (return on assets). The results of the regression equation in this study are as follows:

$$ROA_{it} = - 0.009521 - 0.204163NPL_{it} - 0.025411LTA_{it} + 0.002078BSIZE_{it} + 0,000023GDPG_{it} + 0.003272INFL_{it}$$

Based on the equation, it can be seen that:

1. Return on Asset model equation, the constant value of 0.009521 means that the variables of non-performing loans, liquid assets to total assets, bank size, domestic product growth, and inflation have a negative relationship with return on assets worth - 0.009521.
2. The non-performing loan variable regression coefficient of - 0.204163 indicates a negative effect of non-performing loans on return on assets.
3. The regression coefficient of the liquid asset to total asset variable of - 0.025411 indicates a positive effect of liquid assets to total assets on return on assets.
4. The regression coefficient of the bank size variable of 0.002078 indicates a positive effect of bank size on return on assets.
5. The regression coefficient of the gross domestic product growth variable of 0.000023 indicates a positive effect of gross domestic product growth on return on assets.
6. The regression coefficient of the inflation variable of 0.003272 shows that there is a positive effect of inflation on return on assets.

4.1.7. T Test

Table 6. T Test Results

Independent Variable	Dependent Variable		
		Return On Asset	
	Coefficient	Profitability	Conclusion
Constanta	- 0.009521	-	-
NPL	- 0.204163	0.0091	Negative Significant
LTA	- 0.025411	0.0000	Negative Significant
BSIZE	0.002078	0.0051	Positively Significant
GDPG	0,000023	0.0484	Positive Significant
INFL	0.003272	0.0324	Positively Significant

Source: Eviews 10.0 Data Processing Results

Based on the T test results table in Table 6, the interpretation of the regression analysis results of the independent variables and the control variables on the dependent variable can be described as follows:

1. The independent variable non-performing loan has a probability value of 0.0091, which is smaller than 0.05 (< alpha 5%), with a coefficient value of -0.204163 (negative). This means that for every one unit increase in the non-performing loan variable, there will be a reduction of -0.204163 in the return on asset variable. The conclusion drawn is that non-performing loan has a negative and significant effect on return on asset.
2. The independent variable liquid asset to total asset has a probability value of 0.0000, which is smaller than 0.05 (< alpha 5%), with a coefficient value of - 0.025411 (negative). This means that for every one unit increase in the liquid asset to total asset variable, there will be a reduction of -0.025411 in the return on asset

- variable. The conclusion drawn is that liquid asset to total asset has a negative and significant effect on return on asset.
3. The control variable bank size has a probability value of 0.0051, which is smaller than 0.05 ($< \alpha$ 5%), with a coefficient value of 0.002078 (positive). This means that for every one unit increase in the bank size variable, there will be an addition of 0.002078 in the return on asset variable. The conclusion drawn is that bank size has a positive and significant effect on return on asset.
 4. The control variable gross domestic product growth has a probability value of 0.0484, which is smaller than 0.05 ($< \alpha$ 5%), with a coefficient value of 0.000023. This means that for every one unit increase in the gross domestic product growth variable, there will be an addition of 0.000023 in the return on asset variable. The conclusion drawn is that gross domestic product growth has a positive and significant effect on return on asset.
 5. The control variable inflation has a probability value of 0.0324, which is smaller than 0.05 ($< \alpha$ 5%), with a coefficient value of 0.003272. This means that for every one unit increase in the inflation variable, there will be an addition of 0.003272 in the return on asset variable. The conclusion drawn is that inflation has a positive and significant effect on return on asset..

4.2. Discussion

4.2.1. The Effect of Credit Risk on Bank Performance

The regression test results in this study state that the independent variable non-performing loan has a significant negative effect on the dependent variable return on assets obtained by conventional banks in Indonesia. The high ratio of non-performing loans indicates the high non-performing loans that the bank will face, therefore it can prevent the bank from obtaining profitability. The results of this study are relevant or not contradictory to research conducted by (Al-Husainy & Jadah, 2021) which states that non-performing loans affect return on assets negatively and significantly. This statement is justified by research conducted by (Kingu et al., 2018), which found that non-performing loans have a negative effect on return on assets. The results of this study are also in accordance with research conducted by (Dewi & Badjra, 2020) which stated that non-performing loans have a negative and significant effect on return on assets.

The results of this study are not in line with research conducted by Herry (2015), which proves the positive and significant effect of non-performing loan variables on return on assets. It is stated in his research that non-performing loans that are below the tolerance of less than 5% as required by the Financial Services Authority, indicate that there is still a possibility for banks to be able to control credit risk that can occur, so that bank profitability will continue to increase.

4.2.2. The Effect of Liquidity Risk on Bank Performance

The regression test results in this study state that the independent variable liquid assets to total assets has a significant negative effect on the return on assets obtained by conventional banks in Indonesia. Banks that have too high a level of liquidity will result in the bank obtaining low profits, this is due to the accumulation of idle cash so that it is considered less productive. Research conducted by (Saif-Alyousfi et al., 2018) stated the

same thing, in his research it was stated that the liquidity ratio liquid asset to total asset ratio has a significant negative effect on the return on asset profitability ratio. The results of this study are also in line with research conducted by (Ojha, 2018) and (Al-Homaidi et al., 2020) which states that the liquid asset to total asset ratio has a significant negative effect on the return on asset profitability ratio.

The results of this study contradict research conducted by (Al-Husainy & Jadah, 2021) which stated that liquid assets to total assets affect return on assets positively and significantly.

4.2.3. The Effect of Bank Size on Bank Performance

The regression test results in this study state that the control variable bank size has a significant positive effect on the dependent variable return on assets obtained by conventional banks in Indonesia. The larger the size of the bank indicates that the bank has a high income so that the assets owned are also getting bigger. The larger the size of a bank indicates that the bank has ownership of a large number of assets, this will encourage customer interest in applying for credit loans, so that banks can generate profits from these credit transactions.

The results of this study are relevant or not contradictory to research conducted by (Al-Husainy & Jadah, 2021) which stated that bank size affects return on assets positively and significantly. The results of this study are also supported by research conducted by (Nyarko-Baasi & Forson, 2018) which proved that bank size has a positive and significant effect on return on assets. Other research that supports this statement is research conducted by (Hamid Mohsin Jadah et al., 2016), also states that bank size has a positive and significant effect on return on assets.

The results of this study are not in line with research conducted by Mirzae, et.al (2013) which states that bank size has a negative and significant effect on return on assets. The smaller the size of a bank, the smaller the maintenance costs that must be incurred so that the bank can obtain profitability.

4.2.4. The Effect of Growth Domestic Product on Bank Performance

The regression test results in this study state that the control variable gross domestic product has a significant positive effect on the dependent variable return on assets obtained by conventional banks in Indonesia. The results of this study are relevant or not contradictory to research conducted by (Al-Husainy & Jadah, 2021) which stated that gross domestic product affects return on assets positively and significantly. The results of this study are also supported by research conducted by (N. A. Hasan et al., 2013; Petria et al., 2015; Riaz & Mehar, 2013) which proved that gross domestic product has a positive and significant effect on return on assets. These studies state that gross domestic product can affect the demand and supply of banking services, especially in developing countries, such as Indonesia, the level of credit demand received tends to be high, so the level of profitability received by banks is also high. A good economic environment can also help banks earn high profits (Al-Husainy & Jadah, 2021).

The results of this study are not in line with (Kiganda, 2017), where in his research found that growth domestic product has a negative effect on return on assets. This is

because economic growth results in banks experiencing lower demand for financial services.

4.2.5. The Effect of Inflation on Bank Performance

The regression test results in this study state that the inflation control variable has a significant positive effect on the dependent variable return on assets obtained by conventional banks in Indonesia. The results of this study found similarities with research conducted by (Doan & Bui, 2021) which proved that inflation has a positive effect on return on assets. Other research that also supports this statement, namely research conducted by Hoosyahri & Maghnol (2015), also found that an increase in inflation causes an increase in bank profitability due to an increase in demand for credit applications by debtors, so that the effect of inflation on return on assets is significantly positive.

The results of the research conducted contradict the research (Al-Husainy & Jadah, 2021) which stated that inflation affects return on assets negatively and significantly. It is stated in his research that when inflation is predicted, banks will benefit by increasing interest rates at high inflation rates, but if banks do not increase interest rates at the right time, the bank's overhead costs will increase more than the inflation rate and result in a decrease in profit.

5. CONCLUSION

Based on the analysis and discussion conducted, the research findings indicate that Non-Performing Loan has a negative and significant effect on Return on Asset. Liquid Asset to Total Asset has a negative and significant effect on Return on Asset. The control variable Bank Size has a positive and significant effect on Return on Asset. The control variable Gross Domestic Product has a positive and significant effect on Return on Asset. The control variable Inflation has a positive and significant effect on Return on Asset.

Managerial implications of the research for the banking sector involve the need for bank managers to pay close attention to the risks in their operational activities, such as credit risk and liquidity risk, to improve bank performance. Managers should conduct further reviews related to customers who act as borrowers or depositors. Borrowers are closely related to loan transactions, so bank managers need to carefully consider potential credit risks from these borrowers. Bank managers are also expected to minimize liquidity risk by maintaining liquidity balance, thus optimizing profitability and maintaining good relationships with depositors.

For investors, their decisions to invest or engage in deposit and lending activities at a bank should focus on the bank's performance and profitability level. Investors can analyze the banking risks, the information of which can be obtained through the financial statements of each bank. Investors are encouraged to choose banks with low credit risk and liquidity risk to avoid banks with less optimal performance. A bank with good financial performance reflects its ability to provide benefits to its investors, increasing the investment opportunities available.

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