

## ANALYSIS OF THE EFFECT OF NON PERFORMING LOAN AND LIQUIDITY ON PROFITABILITY IN BANKING SECTOR COMPANIES PERIOD 2017 – 2021

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### Abstract

This study supposed to examine and analyze the effect of non performing loan and liquidity on profitability in banking sector companies for the period 2017-2021. The research method used in this study uses quantitative research methods with descriptive quantitative research types that are explanatory research. The population of this study is the entire banking sector companies listed on the Indonesia Stock Exchange amounted to 46 companies, the sample of this study as many as 20 companies with purposive sampling technique. The method of data analysis used is multiple linear regression. The results of the F test research where  $F$  counts  $8.215 > F$  table  $3.09$  with a significant level of  $0.001 < 0.05$  show that simultaneously bad loans and liquidity have a significant effect on profitability in banking sector companies listed on the Indonesia Stock Exchange for the period 2017-2021. The results of the t test where only bad loans that have a positive and significant effect on profitability while the remaining liquidity has no effect on profitability. The results of the analysis of the coefficient of determination obtained Adjusted R2 value of  $0.174$ , meaning that the variable variation of bad debts and liquidity is equal to  $17.4\%$ , while the remaining  $82.6\%$  is explained by other variables.

Keywords: Non Performing Loan, Liquidity, Profitability

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### 1. Introduction

Bank is a financial institution that provides services where the activities of its business is to collect funds from customers and redistribute the funds to customers as well. The role of banks in supporting the economic activities of the community is very important. One of them is in the form of credit. In a developing country, the role of credit has a dominant role in developing economic potential (Rinanda, 2021).

Loans granted by banks are not easy. Before providing a loan to the customer, the bank will provide several requirements for the loan applicant and these requirements must be met. However, if the loan applicant has been said to be feasible and the required requirements have been met, the bank will not necessarily also provide credit (Tampubolon, 2022). The process of analysis and research on the condition of the loan applicant must be carried out in advance by the bank. This is done in an effort to prevent the risk of default or bad credit (Lestari, 2019).

Liquidity is a ratio that takes into account the relationship of a company's cash and other current assets to its current liabilities (Nasib, 2019). The effect of liquidity on profitability is that if the company's liquidity value is too high a negative impact on the company's ability to earn profits due to idle funds or show excess working capital required, this excess will reduce the opportunity to earn profits or profits of the company thus, the possibility of the relationship of the current ratio with ROA is

negative (Laoli, 2022). The higher the current ratio, the lower the ROA level. This shows that there is a significant negative relationship between liquidity (current ratio) to profitability.

**Table 1: NPL, Liquidity, Profitability**

<b>Company</b>	<b>Year</b>	<b>NPL</b>	<b>Current Ratio</b>	<b>Profitability</b>
PT. Bank Central Asia Tbk	2017	0.202	9.735	0.029
	2018	0.288	9.906	0.030
	2019	0.078	9.940	0.192
	2020	0.194	9.708	0.193
	2021	0.456	9.969	0.186
PT. Bank Negara Indonesia (Persero) Tbk	2017	0.166	11.510	0.051
	2018	0.230	11.522	0.108
	2019	0.100	11.536	0.043
	2020	0.107	11.697	0.688
	2021	0.274	11.779	0.000
PT. Bank Syariah Indonesia Tbk	2017	0.113	10.975	0.300
	2018	0.751	11.111	0.385
	2019	0.142	11.081	0.443
	2020	0.396	11.125	0.382
	2021	0.164	11.514	0.265

Based on table 1.1 above it can be seen that the non performing loan at PT. Bank Central Asia Tbk in 2018 amounted to 0.288 decreased in 2019 to 0.078 while the company's existing profitability increased which in 2018 amounted to 0.030 increased in 2019 to 0.192. Liquidity in 2018 amounted to 11,522 increased to 11,536 in 2019 while profitability decreased where in 2019 it was 0.108 decreased to 0.043.

Based on research from (Darma et al., 2021) with title The effect of non-performing loans (NPL) and liquidity (LDR) on the level of profitability (ROA) at PT Bank Rakyat Indonesia Agroniaga Tbk in 2010-2019, which in its research stated that the t test results showed that the NPL non-performing loans variable had a significant negative effect on profitability, and the LDR liquidity variable had a negative insignificant effect on credit disbursement. Based on research from (Darma et al., 2021) with title The effect of credit risk and liquidity risk on Bank profitability Case Study on state – owned banks for the period 2008-2017 which in its research stated that partially credit risk affects profitability while liquidity risk does not affect profitability.

Based on research from (Agustini et al., 2017) with title The effect of capital adequacy and credit risk on profitability: liquidity as a mediator in people's credit banks in Bandung Regency which in his research states that credit risk affects profitability.

Based on the background of the above problems, the authors are interested in conducting research to determine the effect of non performing loan and liquidity on profitability in the banking sector listed on the Indonesia Stock Exchange. Therefore, the authors are interested in creating a study with title "analysis of the effect of bad debts and liquidity on profitability in banking sector companies for the period 2017-2021"

**Problem's identify**

1. An increase in non performing loan is not always followed by a decrease in profitability in the banking sector companies for the period 2017-2021.
2. An increase in liquidity is not always followed by an increase in profitability in banking sector companies for the period 2017-2021.
3. The increase in non performing loan and liquidity is not always followed by profitability in the banking sector companies for the period 2017-2021.

**2. Theoretical Background****Non Performing Loan Theory**

Statute number 10 of 1998 (Banking statute) (Perubahan atas Undang-Undang Nomor 7 Tahun 1992 tentang Perbankan, 2023) defines credit as the provision of money or bills that can be equated with it, based on an agreement or agreement between the bank and another party that requires the borrower to pay off the debt after a certain period of time with the provision of interest. According to (Zainal, 2017) "credit is the delivery of goods, services or money from one party (creditor or lender) on trust to another party (debtor or debtor) with the promise of paying from the recipient of the credit to the creditor on a date agreed by both parties. According to (Darmawi, 2018) the calculation of Non-Performing Loan (NPL) is presented in the formula as follows:

$$\text{Non Performing Loan} = \frac{\text{Non Performing loan}}{\text{Total Outstanding Loan}}$$

**Liquidity Theory**

According to (Sujarweni, 2019) the Liquidity Ratio or it can be called the working capital ratio is a ratio used to measure how liquid a company is. According to (Yulda Elfandani F., 2019) liquidity ratios describe the ability of a company to settle its short-term liabilities. According to (Kashmir SE., 2019), the formula for finding the current ratio or current ratio can be used as follows:

$$\text{Current Ratio} = \frac{\text{Aktiva Lancar (Current Assets)}}{\text{Utang Lancar (Current Liabilities)}}$$

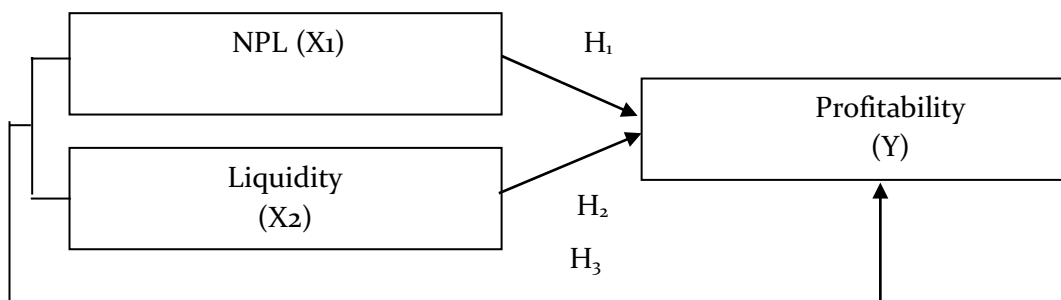
**Profitability Theory**

In this study, to measure the profitability ratio, the return on assets ratio is used to measure it, which according to (Tetriani & Gurusinga, 2022), The Return on assets is a ratio that shows how much the contribution of assets in creating net profit. According to (Fahmi, 2014) Return on Assets is a ratio to measure the effectiveness of management as a whole shown by the size of the level of profits earned in relation to sales and investments. The better the profitability ratio, the better describes the ability of the company's high profit. According to (Harahap, 2016), this ratio is important for management to evaluate the effectiveness and efficiency of company management in managing all company assets. The greater the Return on assets, means the more efficient use of company assets or in other words with the same amount of assets can be generated greater profits, and vice versa. The Return on assets (ROA) formula can be calculated as follows:

$$\text{Return On Asset} = \frac{\text{Net Income}}{\text{Total Assets}}$$

### Conceptual Research

Conceptual research is a framework that connects between variables in a study. Where the relationship is trying to explain the relationship between the independent variable and the dependent variable, in this case the independent variable of non performing loan and liquidity with the dependent variable is profitability. The conceptual framework in this study as follows:



**Picture 1: Conceptual Research**

### Hypothesis

H1: Non performing loan affect the profitability of the company sector Banking Period 2017-2021.

H2: liquidity affects the profitability of the banking sector companies Period 2017-2021.

H3: NPL affects profitability in banking sector companies for the period 2017-2021.

### 3. Methods

#### Types Of Research

The research approach used is a quantitative approach because this study has a clear and regular flow. The type of research used is quantitative descriptive research and the nature of this research is explanatory research.

#### Population and Sample

The population used in this study is the banking sector companies totaling 46 companies. Sampling technique in this study using Purposive Sampling. Some criteria that must be met by the company in order to be used as a sample IE.

**Table 2: Sample Selection Criteria**

No	Description	Total
1	Banking sector companies listed on the Indonesia Stock Exchange in 2017-2021	46
2	Banking sector companies that do not publish their financial statements from 2017-2021	(18)
3	Banking sector companies that have negative profits from 2017-2021	(14)
	Total of companies selected into the research sample	14

The Total number of sample data used in this study is 70 samples taken from a sample of 14 companies multiplied by the research period of 5 years (14 X 5).

**The data collection technique**

(Gozali, 2018) The data collection technique in this study was obtained through documentation studies, by searching for supporting data or theories through books, journals and articles related to the problem under study to be able to describe the problem under study and collect secondary data from the Financial Statements of banking sector companies published on the official website of the Indonesia Stock Exchange for the period 2017-2021.

**Data Analysis Technique****Classical Assumption Test**

According to (Sugiyono, 2012) Classical assumption test is a statistical requirement that must be met in multiple linear regression analysis based on ordinary least square (OLS). The purpose of testing this classical assumption is to provide certainty that the regression equation obtained has accuracy in estimation, unbiased and consistent. Classical assumption test used in this study is normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test. Simple Linear regression or called simple linear regression, is a linear regression with one independent variable and one dependent variable.

**Hypothesis Test****Multiple Linear Regression Analysis**

According to Santoso (2018: 369) states that, “in multiple regression, there is one dependent variable and two or more independent variables.” Multiple linear regression analysis is a common statistical method used to examine the relationship between a dependent variable and several independent variables. The multiple linear regression equation is as follows:

$$Y = a + b_1X_1 + b_2X_2 + e$$

**Testing Coefficient of Determination (R<sup>2</sup>)**

According to (Gozali, 2018) the coefficient of determination (R<sup>2</sup>) essentially measures how far the model's ability to explain the variation of the dependent variable. The value of the coefficient of determination is between zero and one.

**Simultaneous Hypothesis Testing (F-Test)**

According to (Gozali, 2018) “the F statistical test basically shows whether all independent or free variables included in the model have an influence together on the dependent or bound variable.

**Partial hypothesis testing (t-test)**

According to (Gozali, 2018) “the T statistical test basically shows how far the influence of one explanatory/independent variable individually in explaining the variation of the dependent variable.” to determine whether the proposed hypothesis is accepted or rejected, it is done by comparing the t count with the table at a confidence level of 5% ( $\alpha=0.05$ ) with the provision that if the t count < t table then Ho is accepted and Ha is rejected

#### 4. Results and Discussion

##### Descriptive Statistical Analysis

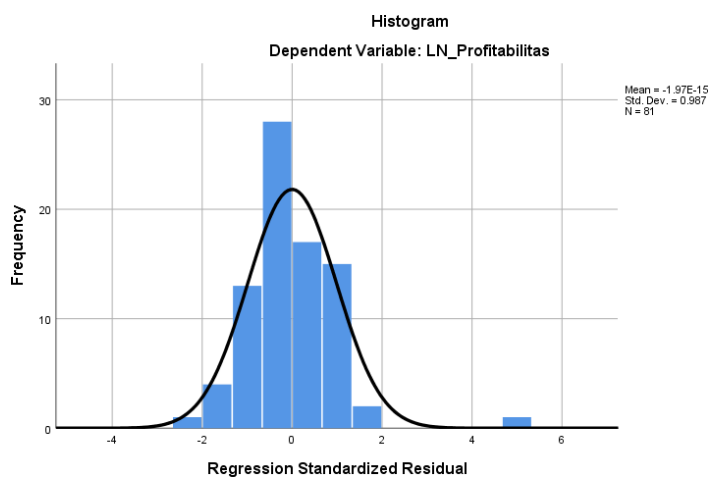
**Table 3: Descriptive Statistical Analysis test**

	N	Minimum	Maximum	Mean	Std. Deviation
NPL	100	.00	.45	.0759	.08371
LDR	100	.00	1005691.15	19765.3001	139037.74770
Profitabilitas	100	-92.33	6.99	-1.7203	12.65152
Valid N (listwise)	100				

Source: data processed by the author using SPSS V. 25 2023

The table above shows the minimum value, maximum value, average value (mean), and standard deviation of the variable non performing loan (X1), liquidity (X2), and profitability (Y) with details of the variable non performing loan have a sample of 100, with a minimum value of 0.00 and a maximum value of 0.45 while the average value (mean) 0.0759 with a standard deviation of 0.08371. Liquidity variables have a sample of 100, with a minimum value of 0.00 and a maximum value of 1005691.15 while the average value (mean) 0.19765.3001 with a standard deviation of 139037.74770. The profitability variable has a total of 100 samples, with a minimum value of -92.33 and a maximum value of 6.99 while the average value (mean) -1.7203 with a standard deviation of 12.65152.

##### Normality Test



**Picture 2: Normality test**

The image above, shows that the results are bell-shaped and do not run to the left or to the right. These results indicate that the data are normally distributed in this study.

**Multicollinearity test****Table 4 : Multicollinearity test**

Model		Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Collinearity Statistics	
		B	Std. Error				Tolerance	VIF
1	(Constant)	-6.471	.401		-16.120	.000		
	LN_NPL	-.460	.114	-.415	-4.016	.000	.993	1.007
	LN_LDR	-.053	.060	-.091	-.877	.383	.993	1.007

Source: data processed by the author using SPSS V. 25 2023

In Table 3 obtained the value of VIF on bad loans variable is 1.007 and liquidity is 1.007 which is less than 10 and Tolerance value for bad loans variable is 0.993 and liquidity is 0.993 which is more than 0.10. This indicates that there are no indication of multicollinearity.

**Autocorrelation test****Table 5: Autocorrelation test**

Test Value <sup>a</sup>	-15687
Cases < Test Value	40
Cases >= Test Value	41
Total Cases	81
Number of Runs	42
Z	.113
Asymp. Sig. (2-tailed)	.910

Source: data processed by the author using SPSS V. 25 2023

Based on Table 4 above, it can be seen that the results of the test run test in the significant value can be above 0.05 which is 0.910 which means that the results do not show any indication of autocorrelation.

**Heteroscedasticity Test****Table 6: Uji Glejser**

Model		Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Collinearity Statistics	
		B	Std. Error				Tolerance	VIF
1	(Constant)	.833	.267		3.122	.003		
	LN_NPL	-.006	.076	-.010	-.085	.933	.993	1.007
	LN_LDR	.029	.040	.082	.725	.470	.993	1.007

Source: data processed by the author using SPSS V. 25 2023

From Table 5 it can be seen that the value (Sig.) for all dependent variables have results in accordance with the criteria so that it is declared to pass the test which means that no symptoms of heteroscedasticity occur.

### Multiple Linear Analysis Test

**Table 7: Multiple Linear Analysis Test**

Model	Unstandardized Coefficients		Std. Error	Standardized Coefficients Beta	t	Sig.
	B					
1	(Constant)	-6.471	.401		-16.120	.000
	LN_NPL	-.460	.114	-.415	-4.016	.000
	LN_LDR	-.053	.060	-.091	-.877	.383

Source: data processed by the author using SPSS V. 25 2023

Based on the table above, the results of the multiple linear regression equation are as follows:

$$\text{Profitability} = -6.471 - 0.460 \text{ NPL} - 0.053 \text{ Liquidity}$$

1. The constant value of -6,471 means that if non performing loan and liquidity and are considered constant, then the profitability of the banking sector companies for the period 2017-2021 decreased by 6,471.
2. The value of the coefficient of non performing loan of -0.460 states that every increase in NPL one unit of profitability will decrease by 0.460.
3. The value of the liquidity coefficient of -0.053 states that every increase in one unit of liquidity, profitability will decrease by 0.053.

### Coefficient Of Determination (R<sup>2</sup>)

**Table 8 : Coefficient Of Determination test**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.417 a	.17 4	.153	1.1766 1	2.187

Source: data processed by the author using SPSS V. 25 2023

Based on the table above, the value obtained from the third column is 0.148, which means that the variation of NPL (X1) and liquidity (X2) can explain the variation of profitability by 17.4% and 82.6%, explained by others such as total asset turnover, working capital turnover.



**Simultaneous Test (F Test)****Tabel 9: Simultaneous Test ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.747	2	11.373	8.215	.001b
	Residual	107.984	78	1.384		
	Total	130.731	80			

a. Dependent Variable: LN\_Profitabilitas

b. Predictors: (Constant), LN\_LDR, LN\_NPL

Source: data processed by the author using SPSS V.25 2023

Based on the table above obtained  $F_{hitung}$  of 8.215 while the  $f_{table}$  of 3.09  $f_{table}$  of 0.55 obtained so that it can be concluded that the variables of NPL and liquidity simultaneously have a significant effect on profitability variables.

**Partial Test (T test)****Table 10: partial test Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
		B	Std. Error			
1	(Constant)	-6.471	.401		-16.120	.000
	LN_NPL	-.460	.114	-.415	-4.016	.000
	LN_LDR	-.053	.060	-.091	-.877	.383

Dependent Variable: LN\_Profitabilitas

Source: data processed by the author using SPSS V.25 2023

Based on the table above partial test results obtained the following results :

1. The non performing loan test (X1) has a calculated t-value of  $-4.016 < -t_{table} - 1.98447$  or a Sig value of  $t (0.000) < \alpha (0.05)$  so that it can be concluded that non performing loan have a negative and significant effect on profitability (Y) in banking sector companies for the period 2017-2021
2. The liquidity test (X1) has a calculated t-value of  $-0.877 > -t_{table} - 1.98447$  or a Sig value of  $t (0.383) > \alpha (0.05)$  so that it can be concluded that liquidity does not have a significant effect on profitability (Y) in banking sector companies for the period 2017-2021

**Discussion****Effect of Non Performing loans on profitability**

Based on the results of the hypothesis test, it is known that the variable of bad loans has a negative and significant effect on profitability (Y) in banking sector companies for the period 2017-2021. ROA is the ratio used to measure the ability of banks to obtain gross profit from asset management owned. ROA obtained by calculating the ratio earning before tax to total assets. The higher the ROA, the more productive the assets that generate

net profit. When the money is transferred to the lender bad credit, then the bank will not be able to return funds to investors or people who have saved at the bank. Because the bank's ability to return funds is influenced by the customer's ability to repay the loan amount that has been disbursed by the bank. this research was supported by the journal (Nurkhofifah et al., 2019) which states that problem loans have a significant effect on profitability in a negative direction. This means that non-performing loans will have an impact on reducing the company's profitability. and supported by the journal (Nurkhofifah et al., 2019) mention in his research that Net Performing loans have a significant negative effect on return on assets (ROA)

### **Effect of liquidity on profitability**

Based on the results of the hypothesis test, it is known that liquidity does not have a significant effect on profitability (Y) in banking sector companies for the period 2017-2021. ROA is a ratio used to measure performance finance. ROA is also used to measure the effectiveness the company in making a profit by utilizing its assets. This means that if the bank has a high ROA indicates that the bank has a great ability to improve operating profit when associated with funds from profits collected. The Financing to Deposit Ratio (FDR) financing channeled by the bank with the amount of third party funds (DPK) received by the bank. This means that the bank can provide financing to customers by exceeding the amount of successful third party funds collected, but not exceeding the limit set by BI of 110%. The greater the funds disbursed in the form of financing compared with deposits or deposits of the public in a bank it will be able to resulting in greater risk borne by the bank, if the financing disbursed failure or problem, then the bank will have difficulty in returning funds entrusted to the community. This study is in line with research conducted (Amri & Nuraha, 2020) where in his research states that Liquidity is not effect on profitability at PT. Bank Syari'ah Mandiri period 2016-2020.

### **5. Conclusion**

Based on the results of research related to "Analysis of the Effect of Bad Loans and Liquidity on Profitability in Banking Sector Companies 2017-2021", conclusions were produced as follows: 1) Bad Credit Testing (X 1) has a value of  $-t_{\text{calculate}} -4.016 < -t_{\text{table}} -1.98447$  or Sig value  $t(0.000) < \alpha(0.05)$  so that it can be concluded that Bad Loans have a negative and significant effect on Profitability (Y) in Banking Sector Companies for the 2017-2021 Period. 2) Liquidity Testing (X 1) has a value of  $-t_{\text{calculate}} -0.877 > -t_{\text{table}} -1.98447$  or value of Sig  $t(0.383) > \alpha(0.05)$  so that it can be concluded that liquidity does not have a significant effect on profitability (Y) in banking sector companies for the 2017-2021 period. 3) F value is calculated at  $8.215 > 3.09$  and Sig  $F(0.001) < (0.05)$  so that Bad Loans (X<sub>1</sub>), and Liquidity (X<sub>2</sub>) have an effect and are significant on Profitability (Y) in Banking Sector Companies for the 2017-2021 Period

Based on the results of research related to "analysis of the effect of Non performing loan and liquidity on profitability in banking sector companies 2017-2021", the following conclusions are drawn 1) testing of non performing loan (X1) has a calculated t-value of  $-4.016 < -t_{\text{table}} -1.98447$  or Sig t value  $(0.000) < \alpha(0.05)$  and it can be concluded that bad loans have a negative and significant effect on profitability (Y) in banking sector companies for the period 2017-2021. 2) the liquidity test (X1) has a calculated t-value of  $-0.877 > -t_{\text{table}} -1.98447$  or Sig value of  $t(0.383) > \alpha(0.05)$  so that it can be concluded that liquidity does not have a significant effect on

profitability (Y) in banking sector companies for the period 2017-2021. 3) calculated F value of  $8.215 > 3.09$  and  $\text{Sig F } (0.001) < (0.05)$  so that NPL (X1), and liquidity (X2) have an effect and are significant to profitability (Y) in banking sector companies for the period 2017-2021

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