

## Credit Risk, Liquidity, and Capital Adequacy Levels on Profitability in Conventional Banks on the Indonesian Stock Exchange

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### ABSTRACT

*Profitability is the ability of a bank to generate or obtain profits effectively and efficiently. The study aims to test the impact of Credit Risk, Liquidity, and Level of Capital Fulfillment on Profitability in Conventional General Banks listed on the Indonesian Stock Exchange. The research population is a Conventional General Bank Company that exists in Indonesia and is listed on the Indonesian Stock Exchange in 2019-2022 a total of 47 companies. The sample in this study consisted of 39 Conventional General Banks determined by purposive sampling. The total of observations in this study is 156 observations. The analytical technique used to test the hypothesis is double linear regression analysis. The results show that Credit Risk (NPL) and Capital Satisfaction Rate (CAR) have no impact on profitability. Liquidity (LDR) has a positive and significant impact on profitability. Further research can use and develop other free variables such as: solvency, financial distress, company size and others.*

**Keywords:** *Credit Risk, Liquidity, Capital adequacy level, Profitability*

### Risiko Kredit, Likuiditas dan Tingkat Kecukupan Modal Terhadap Profitabilitas Pada Bank Konvensional Di Bursa Efek Indonesia

### ABTRAK

Profitabilitas adalah kemampuan bank untuk menghasilkan atau memperoleh keuntungan secara efektif dan efisien. Penelitian ini bertujuan untuk menguji pengaruh Risiko Kredit, Likuiditas, dan Tingkat Kecukupan Modal terhadap Profitabilitas pada Bank Umum Konvensional yang terdaftar di Bursa Efek Indonesia. Populasi penelitian adalah Perusahaan Bank Umum Konvensional yang ada di Indonesia yang terdaftar di Bursa Efek Indonesia tahun 2019-2022 sejumlah 47 perusahaan. Sampel dalam penelitian ini sebanyak 39 Bank Umum Konvensional yang ditentukan berdasarkan metode purposive sampling. Total pengamatan pada penelitian ini adalah 156 pengamatan. Teknik analisis yang digunakan untuk menguji hipotesis adalah analisis regresi linier berganda. Hasil penelitian menunjukkan bahwa Risiko Kredit (NPL) dan Tingkat Kecukupan Modal (CAR) tidak berpengaruh terhadap Profitabilitas. Likuiditas (LDR) berpengaruh positif dan signifikan terhadap Profitabilitas. Penelitian selanjutnya dapat menggunakan dan mengembangkan variabel bebas lainnya seperti: solvabilitas, financial distress, ukuran perusahaan dan lainnya.

**Kata kunci:** *Risiko Kredit; Likuiditas; Tingkat Kecukupan Modal; Profitabilitas*

### INTRODUCTION

A bank is a financial institution whose main purpose is to collect funds and channel funds to the public in the form of credit and provide services. The banks in operation use

more funds from the public than their own capital from the owners or shareholders. According to the Act No. 21 of 2008, a conventional bank is a bank that carries out

its business activities conventionally and according to its type consists of the conventional general bank and the people's credit bank. (BPR). Some examples that include conventional public banks are BNI, BRI, BTN, Mandiri and many more.

According to the Decree of the Director of Bank of Indonesia of 2004 No.6/10/PBI/2004 on the system of assessment of the level of health of banks, the CAMEL (Capital, Asset Quality, Management, Earning, Liquidity) method is used to assess the health of the bank and is added with sensitivity to market risk. The sound financial performance of a bank can be seen through the profitability obtained by a bank (Rinofah et al., 2020). The greater the profitability, the better the company's performance as the rate of return on assets increases (Riyadi, 2022).

Profitability is the ability of a bank to generate or obtain profits effectively and efficiently. Return on Asset (ROA) focuses on the ability of a company to generate income from the company's operations through the use of assets. In this study, ROA is used as a measure of the performance of a bank. The main operational objective of the bank is to the maximum level of profitability. Profitability is influenced by several factors including credit risk, liquidity, and the level of adequacy of capital.

The first factor that can affect profitability is credit risk. Credit risk arises as a result of the granting of credit to a customer who is unable to pay in accordance with the time period specified by the bank. Credit risk or non-performing loan is a financial ratio that shows the ability of the bank management in managing troublesome loans issued by banks in such a way that the higher the credit troubles, the worse the credit quality of the banks (Manda, 2021). This was reinforced by some previous research carried out by Damayanti & Susila (2022), (Rinofah et al., 2020), Hafidah et al., (2022), Sembiring (2021), and Suryana & Manda (2022) which indicates that credit risk (NPL)

has a negative and significant impact on profitability. The opinion of this study contradicts the results of previous research carried out by Ardiansyah et al., (2022), Imaama (2019) shows that credit risk has a positive and significant impact on profitability while Mukaromah & Supriono (2020) indicates that credit risk (NPL) has no impact on profitability (ROA).

The second factor that can affect profitability is liquidity. Liquidity is a company's ability to meet its short-term obligations on time. The larger the volume of assets compared to the liquid liabilities, the greater the confidence in the short term payments. The statement is supported by the research carried out Mukaromah & Supriono (2020), Nursalim (2021), Damayanti & Susila (2022), Imaama (2019) stating that liquidity has a positive and significant impact on profitability, unlike the findings of the study Suryana & Manda (2022) stated that liquidity has a negative and significant impact on profitability (ROA), as well as research Hafidah et al., (2022) stated that liquidity does not affect profitability.

The last factor that can affect profitability is capital sufficiency. (Riyadi, 2022) states that the level of capital adequacy is one of the necessary foundations in a banking company that can pose a risk on any credit or productive asset. The capital of a bank functions as the primary source of financing for operational activities. Measurement of a Capital in the banking can be seen from the Capital adequacy ratio (CAR). The statement is supported by research carried out by Munggar & Mari (2021), Nugroho et al., (2019), Riyadi (2022), Imaama (2019), shows that the level of capital adequacy has a positive and significant impact on profitability. Different from research Nafi (2020) stated that the CAR has a negative and significant impact on profitability, and Sembiring (2021) stated that the level of capital adequacy has no effect on profitability.

**Table 1. Average ROA, NPL, LDR and CAR**

Description	Year			
	2019	2020	2021	2022
ROA (%)	2,47	1,59	1,85	2,45
NPL (%)	2,47	3,06	3,00	2,44
LDR (%)	94,43	82,54	77,49	78,98
CAR (%)	23,40	23,89	25,66	25,59

Source: Indonesian Banking Statistics (2022)

Based on Table 1, the Revenue on Asset (ROA) of the General Conventional Bank in 2019 to 2022 has fluctuated for four consecutive years, the credit risk projected with non-performing loans (NPLs) has fluctuated from 2019 to 2.47% and then by 2020 to 3.06% which indicates that the credit return on third parties is not very good. But then in 2021 it fell again to 3.00% and in 2022 it dropped again to 2.44%. While the liquidity ratio projected with the Loan to Deposit ratio (LDR) fluctuated from 2019 by 94.43% then fell in 2020 to 82.54%, then fell again to 77.49% in 2021, but rose back to 78.98% by 2022.

The capital adequacy rate variable projected with the Capital adequacy ratio (CAR) in Table 1 shows that the CAR value was 23.40% in 2019 then had an increase in 2020 was 23.89% then had a decrease in 2021 to 25.66% and then had another decline at 25.62% in 2022. This shows that CAR from year to year is still fluctuating.

The phenomenon in this study is the occurrence of fluctuations and inconsistencies in the relationship between the ratio of credit risk, liquidity and capital adequacy to the profitability ratio (ROA), as well as in the previous research there are still many differences in the results of the research. Based on such description, there is still a difference and phenomena that occur so this research is made to know by re-testing the impact of credit risks, liquidities, and levels of capital adequation on profitability in the

Conventional General Bank listed on the Indonesian Stock Exchange..

### **Literature Review**

#### ***Signalling Theory***

Signal theory is an action taken by the management of the company to give investor guidance on how to view the company's future prospects. Signal theory explains that companies have an incentive to provide information to external parties. Signalling theory is a theory that looks at signs of circumstances that describe a company. According to signal theory, a high-quality company deliberately sends a signal to the market so that it is expected that the market can distinguish between a high quality company and a low quality company. Signalling theory is used by companies to distribute signals of information contained in the company in the form of financial reports to bank users, the public or investors so that they can see the development of the bank, when the financial performance looks good then the public and investors will be able to trust the banking authorities.

#### **Profitability**

Profitability The profitability refers to the ability of a company to generate profits or profits over a certain period. In this case, it measures the company's capacity to produce profits by the Return on Asset (ROA), using the total asset (wealth) that the company has after adjusting to the costs to finance the asset (Rinofah et al., 2020).

**Credit Risk**

Credit risk is the result of credit grant to a customer who is unable to pay in accordance with the period of time specified by the bank. In banking business credit risk arises due to failure of the debtor to fulfil its obligations (Rinofah et al., 2020). The non-performing loan is measured by the ratio of the problem credit to the total credit granted. A non-performing loan (NPL) can also be understood as a loan that has difficulty in settlement due to the presence of an arbitrary factor or due to an external factor beyond the debtor's measurable capacity of collectibility (Manda, 2021).

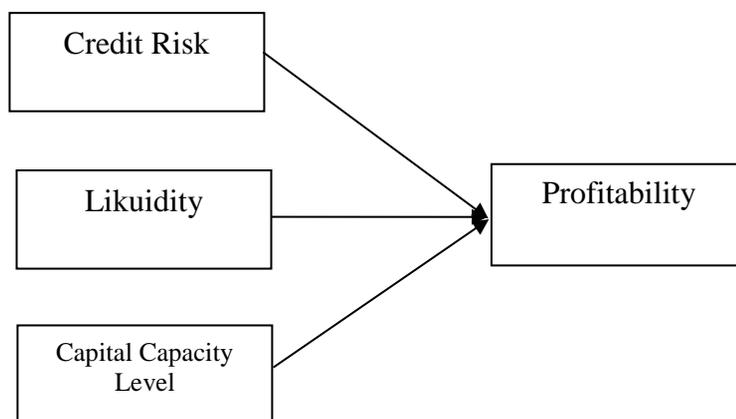
**Likuidity**

Likuidity is the ownership of sufficient funds for all requirements and liabilities that are due. Simply put, likuidity is the ability of a bank to meet its debt obligations, to repay all its deposits and to meet a loan request without delay. The Bank of Indonesia has set an LDR ratio of 110% or more given a value of 0 which means that the bank's likuidity is assessed as unhealthy. The

LDR ratio below 110% is given a credit rating of 100, which means the bank's likuidity is rated healthy.

**Capital Capacity Level**

Capital sufficiency describes the ability of a bank to maintain sufficient capital to cover the risk of losses that may arise from investing funds in risk-bearing productive assets, as well as for financing in fixed assets and investments. The Capital Adequacy Ratio (CAR) is a capital adequacy ratio that functions to cover the risk of losses that a bank is likely to face. The higher the CAR, the better the bank's ability to bear the risk of any credit or productive asset at risk. CAR is a comparison between the ratio of capital to risk-weighted assets and according to government regulations. According to the regulation of the Bank of Indonesia No.10/25/PBI/2008 on the obligation of minimum capital provision of the general bank, that each bank is obliged to provide a minimum capital of 8% of the assets weighted by risk.



**Figure 1. Research Model**

**Hypothesis development**

**Impact of Credit Risk on Profitability**

Credit risk is the risk of loss in relation to a borrower who is unable or unwilling to fulfil his obligation to repay the borrowed funds in full at or after the due date. The higher the non-performing loan (NPL) ratio, the worse the credit quality of the bank,

which causes the amount of credit in trouble, the greater the likelihood of a bank in a trouble (Sembiring, 2021). This will create problems in likuidity which will cause the worse profitability due to the loss of an opportunity to earn income from the credit given otherwise, the lower the credit risk, the higher the profitability obtained. It is

supported by research carried out by Damayanti & Susila, (2022), Hafidah et al., (2022), Sembiring, (2021), Silitonga & Manda (2022), Suryana & Manda (2022) and Rinofah et al., (2020) which states that credit risk has a negative and significant impact on profitability. Therefore the hypothesis ( $H_1$ ) is expressed as follows:

$H_1$ : Credit risk has a negative and significant impact on profitability.

### **The Effect of Liquidity on Profitability**

Liquidity is the ownership of sufficient funds for all requirements and liabilities that are due. Simply put, liquidity is the ability of a bank to meet its debt obligations, to repay all its deposits and to meet a loan request without delay. Liquidity shows the willingness of banks to lend credit to the public. When a banking company is able to lend large amounts of money to the public, the bank gains the public's trust, thereby attracting public interest and making loans or investments to the bank whose income can increase the profit or profitability of the bank. In research Hendrawati & Djamaludin (2020), Damayanti & Susila (2022), Mukaromah & Supriono (2020), Rahmawati & Sapari (2021), dan Wildan Nursalim, Anwar (2021) stated that liquidity has a positive and significant impact on profitability. Therefore the hypothesis ( $H_2$ ) is expressed as follows:

$H_2$ : Liquidity has a positive impact on profitability.

### **Impact of the Level of Capital Capacity on Profitability**

Capital is the most important instrument for running and developing a

business. The measurement of a capital on the bank can be seen from the Capital adequacy ratio (CAR) (Nafi, 2020). The capital of a bank functions as the primary source of financing for operational activities. (Riyadi, 2022) stated that capital adequacy is one of the most needed foundations in a banking corporation that potentially has the risk of any credit or productive asset. The higher the CAR, the better the bank's ability to bear the risk of any credit or productive asset at risk and can contribute to profitability and increase profitability. It's supported by research Imaama (2019), Nugroho et al., (2019), Riyadi (2022), Munggar & Maria (2021), and (Rinofah et al., 2020) stated that the level of capital adequacy has a positive and significant impact on profitability. Therefore, the hypothesis ( $H_3$ ) is expressed as follows:

$H_3$ : The level of capital adequacy has a positive impact on profitability.

### **METHODE**

In this study, the objects to be examined are credit risk, liquidity, and the level of capital adequacy to profitability in conventional banks listed on the Indonesian Stock Exchange in 2019-2022. The population in this study was 47 companies with a sample of 39 companies meeting the criteria with a total of 3 years of observation of 156 observations. The technique used in this research is purposive sampling. The data analysis method used in this study is double linear regression.

**Table 2. Variables and Indicators**

Variables	Measurement	Formula
Credit Risk	<i>Non Performing Loan</i>	$\frac{\text{Credit Clogged}}{\text{Total Credit}} \times 100\%$
Likuidity	<i>Loan to Deposit Ratio</i>	$\frac{\text{Credit}}{\text{Third Party Funds}} \times 100\%$
Capital Capacity Level	<i>Capital Adequacy Ratio</i>	$\frac{\text{Capital}}{\text{ATMR}} \times 100\%$
Profiability	<i>Return On Asset</i>	$\frac{\text{Profit Before Tax}}{\text{Average asset}} \times 100\%$

**RESULT AND DISSCUSION**

**Descriptive statistics**

The distribution of observation data related to the minimum value, maximum mileage, mean, and standard deviation of Credit Risk (NPL), Liquidity (LDR), Capital Adequacy

Level (CAR), Rentability (ROA) using descriptive parameters is presented in the Table 3.

**Table 3. Results of Descriptive Statistical Analysis**

	N	Minimum	Maximum	Mean	Std. Deviation
NPL	156	0,000	32,581	0,708	3,122
LDR	156	0,003	190,904	2,152	15,541
CAR	156	0,000	1,929	0,066	0,213
ROA	156	-18,337	16687,348	139,479	1339,767
Valid N (listwise)	156				

Source: Data processed (2023)

Based on Table 3, the results of descriptive statistical analysis showed that N or data sum of each variable amounted to 156, out of 156 NPL sample data, during the period 2019-2022 had a minimum value of 0,000 and a maximum value of 32,581, an average value of 0,798 and a standard deviation value of 3,122. LDR, has a minimum value of 0,003 and a maximum value of 190,904, an average value of 2,152 and a standard deviation value of 15,541. CAR for the period 2019-2022 has a minimal value of 0,000 and a max value of 1,929, a median value of 0.066 and a default deviation of 0.213. ROA has a minimum value of -18,337 and a maximal value of 16687,348, a mean value of 139,479 as well as standard deviations of 1339,767.

**Classical Assumption Test**

The purpose of classical assumption testing is to provide certainty that the obtained regression equation has accuracy in non-biased estimates and consistency. The classical assumption test consists of a normality test, a multicollinearity test, an heteroskedastisity test and an autocorrelation test. The results of the normality test with reference to the Kolmogorov-Smirnov method, showed that for a normality test of the characteristics of a company with a total of 43 data, then with a significance value of  $0.451 > 0.05$  means that the data used in this study is normal-distributed data. VIF values on each variable were obtained for NPL variables of 2,087, LDR variable of 2,447, and CAR variable 2,624. It can then be concluded that the data used in the regression equation test is data that does not experience the symptoms of multicoloniality. The autocorrelation test showed that the DW (Durbin Watson) value of 1,822 is greater

than the  $DL = 1,3663$  and smaller than the  $4 - DU (4 - 1,6632 = 2,3368)$  meaning that the data used does not have autocorrelation symptoms. Thus, the data used spread randomly so that there were no autocorrelation symptoms in this study. The Heteroskedastisity test obtained significant values of  $0.505$  for the credit risk variable,  $0.513$  for the liquidity variable and  $0.254$  for the capital suitability variable. Significant values for all the free variables (credit risk, liquidity and capital adequacy rate greater than  $0.05$ , so it can be concluded that this study has no symptoms of heteroskedasty.

**Determination coefficient and F test**

Based on the results of the test, the Adjusted R Square score was  $0.778$ , which means that credit risk, liquidity and capital adequacy can provide information of  $77.8\%$  on profitability, while the remaining  $22.2\%$  is explained by other variables not studied in this study. Then the independent and dependent variables have a correlation value of  $0.891$  or  $89.1\%$ , which means the degree of correlations is very strong. Based on the test results F yields a significance value of  $0,000$  smaller than  $\alpha (0.05)$ , which means that the model used in this study has been valid (fit),

thus the research model used is valid and the proof of the hypothesis can be continued. This indicates that there is a simultaneous influence between the Credit Risk, Liquidity and Capital Satisfaction variables on the Profitability variable.

**Hypothesis testing**

The credit risk variable significance of  $0.376$  is greater than  $\alpha (0.05)$  with a positive beta coefficient of  $4.792$  so that  $H_1$  is rejected, which means that credit risk does not affect the profitability of Conventional Banks listed on the Indonesian Stock Exchange. The significance of the liquidity variable of  $0,000$  is smaller than  $\alpha (0.05)$ , with a positive beta coefficient of  $4,237$  so that  $H_2$  is accepted, which means that liquidity has a positive impact on the profitability of Conventional Banks Listed on the Indonesian Stock Exchange. The significance of the capital adequacy variable of  $0.596$  is greater than  $\alpha (0.05)$  with a positive beta coefficient of  $124,463$  so that  $H_3$  is rejected, which means that capital adequation does not affect the profitability of the Conventional General Bank Listed on the Indonesian Stock Exchange.

**Table 4. Results of the Hypothesis Test**

Hypothesis	Koefisien Regresi	Sig	Description
$H_1 : \text{Credit Risk} \rightarrow \text{Profitability}$	4,792	0,376	Not significant
$H_2 : \text{Likuidity} \rightarrow \text{Profitability}$	4,237	0,000	Significant Positive
$H_3 : \text{Capital Capacity Level} \rightarrow \text{Profitability}$	124,463	0,596	Not significant

Source: processed data (2023)

**Impact of Credit Risk on Profitability**

Based on the test results, the hypothesis suggests that the credit risk does not affect the profitability of the Conventional General Bank listed in the

Indonesian Stock Exchange. This is because the research results of the average value of NPLs obtained at  $2.74\%$  or less than  $5\%$  so that the NPL yields do not affect profitability, because NPL values include low and banking

entry in the healthy category, so Credit Risk (NPL) can not affect Rentability (ROA) Conventional General Bank listed on the Indonesian Stock Exchange (BEI) period 2019-2022 has high capital. The results of this study are in line with the empirical study carried out by Nurwita (2021), Pinasti & Mustikawati (2018), and Agustian & Priyanto (2022) stated that credit risk has no influence on profitability.

### **The Effect of Liquidity on Profitability**

Based on the test results, the hypothesis suggests that liquidity has a positive impact on profitability of the Conventional General Bank listed on Indonesian Stock Exchange. This is because the bank has a stable financial condition so that the ability to finance debt or short-term liabilities can be paid in accordance with the debt it holds. The results of this study are in line with the theory proposed by Kasmir, (2017:128) That liquidity is the ability of the bank to meet its debt obligations, to repay all its deposits and to meet the credit demands made without delay.

The statement is in line with the empirical study carried out by Hendrawati & Djamaludin (2020), Mukaromah & Supriono (2020), Nursalim, Anwar (2021), Damayanti & Susila (2022), and Imaama (2019) stated that liquidity has a positive and significant impact on profitability.

### **Impact of the Level of Capital Capacity on Profitability**

Based on the test results, the hypothesis shows that capital adequacy does not affect the profitability of a Conventional Bank listed in the Indonesian Stock Exchange. The average value of the CAR during the period 2019-2022 is quite high, which is 24.63%. The high capital of this bank is expected to yield a high income for the bank, but the economic conditions of the people in that period of time has been declining due to the pandemic of Covid-19, so that the capital that the bank channeled to

the people is not returned fully because the people are not paying their obligations smoothly, as the society is unable to repay the funds borrowed and there is a deferral. So directly high CAR values can't affect profitability.

The results of this study are in line with the empirical study carried out by Sembiring (2021), Emawati & Elmawati (2020), and Widyastuti & Aini (2021) stating that the level of capital adequacy has no influence on profitability.

### **CONCLUSIONS**

Based on the results of analysis and analysis, research shows that credit risk has no influence on the profitability of Conventional Banks listed in the Indonesian Stock Exchange. The smaller or lower the credit risk, the less it affects profitability and banking into the healthy category. Liquidity has a positive impact on the profitability of conventional banks listed on the Indonesian Stock Exchange. This is because the bank has a stable financial condition so that the ability to finance debt or short-term liabilities can be paid in accordance with the debt it holds. Capital sufficiency does not affect the profitability of a Conventional Bank listed on the Indonesian Stock Exchange. This is because the capital that the banks channeled to the public is not fully returned because the society is not paying its obligations smoothly so there is a deferral.

It is advisable for investors to make predictions of the size of ROA using the Liquidity Ratio (LDR) since such independent variables have a positive and significant impact on Profitability (ROA) and before choosing an investor company it is also advisable to review the financial statements of the company so that it can predict the magnitude of the value of Profitability (ROA) in order to get maximum profit, so that the investors' goals can be achieved. For future researchers, it is expected that the sample used will be different from the current sample. For

example, the next researchers will be able to use the Company's Compass 100 sample because the researchers are now unable to use that sample due to time and cost constraints, so it is hoped that the next researcher will be capable of perfecting the shortcomings faced by the current researchers. As well as future researchers are expected to be able to develop free variables such as: solvency, financial distress, size of the company and others, this is done to find out the other impact it has on profitability.

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