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EFFECT OF CAPITAL ADEQUACY RATIO AND ACTIVITY RATIO ON NON-PERFORMING LOAN WITH COMPANY SIZE AS MODERATING VARIABLE

ВПЛИВ КОЕФІЦІЄНТА ДОСТАТНОСТІ КАПІТАЛУ ТА КОЕФІЦІЄНТА АКТИВНОСТІ НА НЕПРАЦЮЮЧИЙ КРЕДИТ З УРАХУВАННЯМ РОЗМІРУ КОМПАНІЇ ЯК МОДИФІКУЮЧОЇ ЗМІННОЇ

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Джессіка Лім, Роберт Туа Сірегар, Дарвін Лі, Еллі Ромі. Вплив коефіцієнта достатності капіталу та коефіцієнта активності на непрацюючий кредит з урахуванням розміру компанії як модифікуючої змінної. Науково-методична стаття.
Дослідження аналізує вплив коефіцієнта адекватності капіталу (CAR) та показників ділової активності на рівень непрацюючих кредитів (NPL) у компаніях харчової промисловості Індонезії (2019-2022). Використано кількісний метод та шлях-аналіз у SmartPLS 4. CAR та активність не мають значного впливу на NPL. Натомість розмір компанії прямо та позитивно впливає на рівень проблемної заборгованості. Встановлено, що розмір підприємства не виконує роль модератора для CAR та показників активності (P-Value > 0,05). Для менеджменту харчової галузі ключовим чинником кредитного ризику є саме масштаб компанії, тоді як капіталізація та активність у цей період виявилися другорядними.
Ключові слова: коефіцієнт достатності капіталу, коефіцієнт активності, непрацюючі кредити, розмір компанії

Jessica Lim, Robert Tua Sibarani, Darwin Lie, Elly Romy. Effect of Capital Adequacy Ratio and Activity Ratio on Non-Performing Loan with Company Size as Moderating Variable. Scientific and methodical article.
The study analyzes the impact of the capital adequacy ratio (CAR) and business activity indicators on the level of non-performing loans (NPL) in Indonesian food industry companies (2019-2022). A quantitative method and path analysis in SmartPLS 4 were used. CAR and activity do not have a significant impact on NPL. Instead, the size of the company has a direct and positive impact on the level of non-performing debt. It was found that the size of the enterprise does not act as a moderator for CAR and activity indicators (P-Value > 0.05). For food industry management, the key factor in credit risk is the size of the company, while capitalization and activity were found to be secondary during this period.
Keywords: capital adequacy ratio, activity ratio, non-performing loan, company size

The manufacturing industry is one of the main pillars of the Indonesian Stock Exchange (IDX) economic structure. This sector has a significant impact on national economic growth and stability. Manufacturing companies not only act as job creators but also as catalysts in enhancing national productivity and competitiveness. Therefore, maintaining the financial health of manufacturing companies is crucial for sustaining overall economic stability and growth.

Amid their operational dynamics, manufacturing companies are inherently exposed to credit risks that could threaten their financial stability. The Non-Performing Loan (NPL) ratio serves as a crucial indicator in evaluating how well companies can manage and reduce credit risk. As a fundamental component in economic and financial literature, a deep understanding of the factors that can influence the Non-Performing Loan (NPL) ratio is essential for building corporate resilience against unexpected economic fluctuations.

Macroeconomic indicators have a significant impact on the value of Non-Performing Loans. Some of these indicators include inflation, which is a sustained increase in prices across the board, as well as dynamic fluctuations in the rupiah exchange rate. These indicators can take the form of fundamental financial ratios that provide in-depth information on the assessment of capital adequacy, profitability, credit risk, market risk, and liquidity. Two

key factors identified as potentially influencing the level of Non-Performing Loans (NPL) are the Capital Adequacy Ratio (CAR) and the Activity Ratio. The CAR serves as the primary indicator in assessing a company's capacity to withstand risk, reflecting how effectively the company can protect itself from potential credit losses. On the other hand, the Activity Ratio illustrates the efficiency of asset utilization by the company, playing a crucial role in optimizing financial performance.

It is important to understand that banking regulations covering capital requirements such as CAR also have a significant impact on the financial practices of manufacturing companies. The application of these provisions plays a central role in shaping the operational conditions of companies and can serve as a determining factor in their financial health.

Although previous research has highlighted the relationship between Capital Adequacy Ratio, Activity Ratio, and Non-Performing Loan, there remains a lack of understanding regarding moderating aspects, particularly related to company size. Company size, as a moderating variable, is considered to have the potential to moderate the impact of the Capital Adequacy Ratio and Activity Ratio on the level of Non-Performing Loans, given that companies of different scales may face diverse challenges and opportunities in credit risk management.

Analysis of recent researches and publications

Capital Adequacy Ratio.

According to Dendawijaya (2009), Capital Adequacy Ratio (CAR) is a ratio that shows how much the amount of all bank assets that contain elements of risk, be it loans, investments, securities or other bank bills, is financed from the bank's own capital, in addition to obtaining funds from sources outside the bank.

According to Kuncoro and Suhardjono (2011), Capital Adequacy Ratio is capital adequacy that shows the bank's ability to maintain adequate capital and the ability of bank management to identify, measure, monitor, and control emerging risks that can affect the amount of bank capital.

Cashmere (2016) explains that CAR is the ratio between bank capital to Risk Weighted Assets (ATMR). CAR is used to ensure that the bank has enough capital to cover the risks associated with its assets, including loans and securities. According to him, this ratio is important to maintain the stability and financial health of the bank as well as to protect depositors and other stakeholders.

Gitman (2012) states that the activity ratio measures how efficiently a company uses its assets to generate sales. This ratio includes inventory turnover, accounts receivable turnover, and fixed asset turnover.

According to Kieso, Weygandt, and Warfield in their 2016 book, the activity ratio is used to evaluate how effectively management manages and uses the company's assets. Some of the ratios included in this category are inventory turnover ratio, accounts receivable turnover ratio, and fixed asset turnover ratio. Brigham and Houston (2015) state that the activity ratio is a ratio that shows the relationship between the level of sales and certain assets, which is used to measure the company's efficiency in managing these assets.

According to Cashmere (2012: 321), "Non-Performing Loan or credit risk ratio for the risk of loans disbursed by comparing bad debts with the amount disbursed".

According to Darmawi (2014: 16), "Non-Performing Loan or credit risk is providing credit to its customers. Healthy credit distribution has implications for the smooth return of credit by customers on loan principal and / or interest expense".

Fahmi (2018) reveals that company size is important in financial statement analysis because it can provide an overview of the scale of operations and the company's ability to generate profits. Company size also affects capital structure and growth strategy.

The main part

Activity Ratio.

Brigham and Houston (2015) state that the activity ratio is a ratio that shows the relationship between sales and certain assets, which is used to measure a company's efficiency in managing those assets.

Wild, Subramanyam, and Halsey (2014): They state that the activity ratio assesses how well a company manages its various assets, such as accounts receivable and inventory, to generate sales and profits.

The activity ratio is important in financial analysis because it provides insight into a company's operational efficiency. By monitoring this ratio, companies can identify areas where they can improve their use of assets to generate more sales and increase profitability.

Kieso, Weygandt, and Warfield argue that the activity ratio is vital because it provides insight into the effectiveness of management in managing the company's assets. By analyzing this ratio, management can assess operational performance and make more informed decisions regarding asset management.

The importance of activity ratios according to Gitman is explained as follows:

1. Evaluation of Asset Utilization Efficiency: Activity ratios, such as inventory turnover ratio and accounts receivable turnover ratio, indicate how quickly a company can convert its assets into sales. A high ratio indicates that the company is able to use its assets efficiently.

2. Inventory Management: A high inventory turnover ratio indicates that a company is able to manage its inventory well, avoiding excess inventory that can increase storage costs and obsolescence risk.

3. Accounts Receivable Management: A high accounts receivable turnover ratio indicates that a company is able to manage its accounts receivable effectively, reducing the risk of uncollectible accounts and accelerating cash inflows.

4. Fixed Asset Optimization: The fixed asset turnover ratio helps companies understand how well-fixed assets, such as buildings and equipment, are used in daily operations to generate revenue.

Non-Performing Loan.

According to Darmawi (2014:16) "Non-performing loans or credit risk is giving credit to customers. Healthy credit distribution means customers can smoothly pay back the principal and/or interest on their loans".

According to Ali in Barus (2016), Non-Performing Loan (NPL) is a ratio that compares the total amount of problematic loans to the total amount of loans disbursed, expressed as a percentage. NPL can be used as an indicator of credit risk, where the lower the NPL ratio, the lower the level of problematic loans, which means the better the condition of the bank, and conversely, the higher the NPL ratio, the greater the credit risk borne by the bank.

Based on the opinions of the experts above, it is concluded that the Non-Performing Loan Ratio is used to measure a bank's ability to cover the risk of loan repayment by borrowers.

Jumingan (2014: 245) states that the Non-Performing Loan Ratio is used to measure a bank's ability to withstand the risk of loan default by creditors and can be calculated using the following formula:

$$\text{Non-Performing Loan} = \frac{\text{bad debt}}{\text{total loan}}.$$

The Theory of the Influence of Capital Adequacy Ratio on Non-Performing Loans.

According to Syamsuddin (2008: 119), if a company is unable to pay its financial obligations, it is likely that the company will not be able to continue its business because creditors who feel insecure will be able to force the company to pay interest and principal immediately.

According to Kasmir (2012:152), a company with a high solvency ratio may face a greater risk of loss.

According to Brigham and Houston (2012:143), creditors prefer a low debt ratio because the lower the debt ratio, the greater the protection for creditors against losses in the event of liquidation.

The Theory of the Influence of Activity Ratio on Non-Performing Loans.

Puspitaningtyas (2017) found that the activity ratio has a significant effect on NPL. Low operational efficiency, as reflected in a low activity ratio, tends to increase NPL due to poor management of assets and liabilities.

Haryono and Yuliana (2019) stated that activity ratios such as credit turnover ratio and total asset turnover ratio can affect the NPL level. A low credit turnover ratio indicates that banks have problems in loan collection, which can lead to an increase in NPL.

Ahmad and Ariff (2007) emphasize the importance of operational efficiency in credit risk management. They found that banks with high activity ratios tend to have lower NPLs because they are more efficient in loan management and risk control.

From the above description, it can be concluded that the activity ratio has a significant effect on NPLs.

The Theory of the Influence of Capital Adequacy Ratio on Company Size.

Pandey (2010), in his book entitled "Financial Management", states that companies with a high Capital Adequacy Ratio (CAR) usually have better financial stability. This allows companies to expand and make larger investments, which ultimately increases the size of the company.

In their study titled “Capital Regulation and the Size of Financial Intermediaries,” Rindi, Tamborini, and Gatti (2017) found that a high Capital Adequacy Ratio helps companies maintain the trust of investors and creditors. This improves the company's ability to access capital, which is important for the growth and expansion of manufacturing companies.

The Theory of Non-Performing Loans' Impact on Company Size.

According to research conducted by Putu Khanti and I Made Dana (2019), non-performing loans (NPLs) have a significant impact on company size in the banking sector. Effective management in credit risk management can reduce NPL levels. Conservative credit policies can lower the risk of non-performing loans. Macroeconomic conditions, such as inflation rates, interest rates, and economic growth, also influence NPL levels.

In their research, it was found that larger companies tend to have better capabilities in managing NPLs, as they have more resources to manage risks and absorb losses.

Materials and Methods.

The research approach used in this study is a quantitative method that emphasises its analysis on numeric data (numbers) processed by statistical methods. And basically, this quantitative approach researchers do in order to propose a hypothesis and realise the conclusion of the results on a probability of error will be obtained significant relationship between the variables being studied.

The research approach used in this research is a quantitative method that emphasises its analysis on numeric data (numbers) processed by statistical methods. And basically, this quantitative approach researchers do in order to propose a hypothesis and realise the conclusion of the results on a probability of error will be obtained significant relationship between the variables being studied.

The data used in this study are secondary data, namely data that has been processed by other parties and through literature studies that still have something to do with the problems faced and researched and presented in the form of information while the data source comes from the Financial Statements of the Indonesia Stock Exchange taken from the site (www.idx.co.id). According to Sugiyono (2012: 193), secondary data is data that supports primary data obtained from documentation studies to support research.

The companies selected as samples of this study were as many as companies taken from a population of 42 companies and the total number of samples to be studied was 84 observations.

Results and Discussion.

Inner Model Evaluation (Structural Model). The results of testing the Inner model are as follows:

Table 1. R-Square test results (R2)

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.484[a]	.234	.219	3.05434

Source: authors' own elaboration

Based on the results of the table above, it can be explained that the adjusted R-square value is 0.148. This shows that only 0.148% of the variation in the Non-Performing Loan variable can be explained by the Capital Adequacy Ratio, Activity Ratio and Company Size variables, while 99.852% is explained by other variables outside this study.

Hypothesis Test Results.

In hypothesis testing, researchers use path analysis to obtain hypothesis testing results, this analysis is carried out by comparing the T-table value with the T-Statistics value generated from bootstrapping in PLS. The hypothesis is accepted if the T-Statistics value is higher than the T-table value (1,995) with a significance level of 5% or through the P-value α = 5%. The results of the PLS bootstrapping process can be seen in table 2.

Table 2. Model Summary Test Results Sub Model I

Model Summary					
Model	Original Sample (o)	Sample Mean (M)	Std. Deviation (STDEV)	T Statistic	
Activity ratio ->NPL	0.115	0.115	0.102	1.121	0.262
CAR/equity --> NPL	3.928	4.453	2.064	1.904	0.057
Company size --> NPL	-1.381	-1.583	0.564	2.446	0.014
Company size x CAR --> NPL	-1.328	-1.495	0.731	1.817	0.069
Company size x Activity ratio --> NPL	-0.153	-0.146	0.174	0.875	0.382

Source: authors' own elaboration

From table 2 it can be seen that the P-Values between the effect of Activity Ratio on Non-Performing Loan, Capital Adequacy Ratio (Equity) on Non-Performing Loan means no effect. The P-Values value between the effect of company size on Non-Performing Loan means a significant effect in the positive direction.

Company size is not able to moderate the effect of Capital Adequacy Ratio (Equity) and Activity Ratio on Non-Performing Loan because the P-Values are above 0.05%.

1. Hypothesis 1: Activity Ratio affects Non-Performing Loan.

Based on the analysis results in table 4.3, it can be seen that the results of the path analysis test between the Activity Ratio and Non-Performing Loan have an original sample value of 0.115 with a T-statistics value of 1.121 < 1.96 and a P-value of 0.262 > 0.05. This shows that the Activity Ratio has no effect on Non-Performing Loan. Thus hypothesis 1: Activity Ratio affects Non-Performing Loan is rejected.

2. Hypothesis 2: Capital Adequacy Ratio (Equity) affects Non-Performing Loan.

Based on the analysis results in table 4.3, it can be seen that the results of the path analysis test between the Capital Adequacy Ratio (Equity) and Non-Performing Loan have an original sample value of 3.928 with a T-statistics value of 1.904 < 1.96 and a P-value of 0.057 > 0.05. This shows that the Capital Adequacy Ratio has no effect on Non-Performing Loan. Thus hypothesis 2: Capital Adequacy Ratio affects Non-Performing Loan is rejected.

3. Hypothesis 3: Company size has an effect on Non-Performing Loan.

Based on the analysis results in table 4.3, it can be seen that the results of the path analysis test between Company Size and Non-Performing Loan have an original sample value of -1.381 with a T-statistics value of 2.446> 1.96 and a P-value of 0.2014 <0.05. This shows that Company Size has an effect on Non-Performing Loan. Thus hypothesis 3: Company size affects Non-Performing Loan is accepted.

4. Hypothesis 4: Company size can moderate the effect of Capital Adequacy Ratio on Non-Performing Loan.

Based on the analysis results in table 4.3, it can be seen that the results of the path analysis test between the Capital Adequacy Ratio and Non-Performing Loan with Non-Performing Loan as a moderator variable have an original sample value of -1.328 with a T-statistics value of 1.817 < 1.96 and a P-value of 0.069> 0.05. This shows that Company Size cannot moderate the effect of Capital Adequacy Ratio on Non-Performing Loan. Thus, the hypothesis: Company size is able to moderate the effect of Capital Adequacy Ratio on Non-Performing Loan is rejected.

5. Hypothesis 5: Company size can moderate the effect of Activity Ratio on Non-Performing Loan.

Based on the analysis results in table 4.3, it can be seen that the results of the path analysis test between the Activity Ratio and Non-Performing Loan with Non-Performing Loan as a moderator variable have an original sample value of -0.153 with a T-statistics value of 0.875 < 1.96 and a P-value of 0.382> 0.05. This shows that Company Size cannot moderate the effect of Activity Ratio on Non-Performing Loan. Thus, the hypothesis: Company size is able to moderate the effect of Activity Ratio on Non-Performing Loan is rejected.

Capital Adequacy Ratio has no effect on Non-Performing Loan.

This researcher argues that economic conditions, customers' ability to fulfil loan repayment commitments, and banks' credit risk management all have an impact on non-performing loans (NPLs). While well-capitalised banks are better equipped to withstand losses, this does not necessarily translate into improved loan portfolio quality or a reduction in the quantity of non-performing loans. As such, credit risk management and customer credit evaluation continue to be the primary strategies to lower non-performing loans (NPLs), even if capital adequacy is critical to maintaining the financial stability of the bank.

Furthermore, while having enough capital can help reduce losses from current non-performing loans (NPLs), it does not necessarily stop new NPLs from emerging.

Activity Ratio has no effect on Non-Performing Loan.

Non-performing loans (NPLs) are not directly affected by activity ratios such as operating efficiency to operating income ratio or operating cost to operating income ratio. Credit risk management, customer ability, and the quality of credit provided by banks have a greater impact on non-performing loans (NPLs). Activity ratios do not illustrate the danger of consumer default on loans; rather they only show how well a bank manages its operating expenses in relation to its income.

The operational effectiveness of a bank is indicated by the activity ratio, but the level of NPLs is more influenced by other variables such as the quality of the loan portfolio, credit policy, and macroeconomic conditions. Even with a highly efficient bank, its operational efficiency may not prevent an increase in non-performing loans (NPLs) in the event of a recession or loose credit policies.

Company size affects Non-Performing Loan.

Diamond (1984) in his theory of delegated monitoring, where he explains that large companies have information advantages and are more trusted by creditors because of their capacity to monitor and manage risk. Due to their greater access to capital, large businesses can usually diversify their loan portfolio and lower credit risk. Furthermore, larger businesses often have more sophisticated risk management and monitoring systems, which can assist them in identifying and resolving possible credit issues before they turn into non-performing loans (NPLs).

As larger businesses usually have greater resources and better risk management, firm size can have an impact on non-performing loans (NPLs). Due to their greater access to capital, large businesses can usually diversify their loan portfolio and lower credit risk. Furthermore, larger businesses often have more sophisticated risk management and monitoring systems, which can assist them in identifying and resolving possible credit issues before they turn into non-performing loans (NPLs).

Company size is unable to moderate the effect of Capital Adequacy Ratio on Non-Performing Loan.

Berger and DeYoung (1997) Their research on "problem loans and cost efficiency" shows that factors such as management efficiency affect NPLs more than just firm size. This implies that size does not necessarily mitigate the relationship between CAR and NPL. An indicator of a bank's capacity to use capital to cover possible credit risk is the capital adequacy ratio. Banks should be better able to withstand losses from non-performing loans when CAR is high. Nonetheless, if firm size is not effective as a moderating factor, this suggests that bank size and capitalisation may not always result in a reduction or control of NPL levels.

The inability of firm scale to mitigate the impact of CAR on NPLs may be largely due to management and operational variables within the organisation. Large banks may have a more complicated organisational structure, which may hinder decision-making or reduce the efficacy of risk management. Furthermore, large banks are typically more exposed to a wide variety of credit products, which increases credit risk if managed inappropriately. As a result, even with firm size, controlling the impact of CAR on NPL will remain challenging without effective risk management.

Company size is not able to moderate the effect of Activity Ratio on Non-Performing Loan.

Non-performing loans (NPLs), or defaulted loans, are thought to be affected by the activity ratio, which measures how well a business uses its assets to generate revenue. However, a high activity ratio does not necessarily directly mean a decrease in non-performing loans (NPLs), although it does show that the business is able to manage its resources. This is due to the fact that a company's capacity to generate revenue does not always

match its credit risk management capabilities. More than just operational efficiency, NPLs are also affected by risk management, the quality of loans extended, and external variables such as prevailing economic conditions.

Conclusions

Capital Adequacy Ratio cannot be used to research in manufacturing companies because there is 1 indicator listed that is not available in manufacturing financial statements. So, if you want to examine the effect of the Capital Adequacy Ratio, look for banking companies as a research target.

Abstract

As a crucial element in economic and financial literature, a deep understanding of the factors that can affect the level of Non-Performing Loans (NPL) is essential for building a company's resilience to unexpected economic fluctuations. This study aims to examine the effect of Capital Adequacy Ratio (CAR) and Activity Ratio on Non-Performing Loans (NPL), with company size as a moderating variable in food and beverage manufacturing companies listed on the Indonesia Stock Exchange from 2019 to 2022.

The population analyzed in this study includes all manufacturing companies listed on the Indonesia Stock Exchange from 2019 to 2022. The method used is quantitative with path analysis techniques using SmartPLS 4 software. The results show that the Capital Adequacy Ratio and Activity Ratio do not significantly affect Non-Performing Loans. Conversely, company size has a significant positive effect on Non-Performing Loans. However, company size is unable to moderate the effect of Capital Adequacy Ratio and Activity Ratio on Non-Performing Loans, as indicated by a P-Value above 0.05. The conclusions of this study are: Capital Adequacy Ratio does not affect Non-Performing Loans; Activity Ratio does not affect Non-Performing Loans; Company size has a significant effect on Non-Performing Loans; Company size does not moderate the effect of Capital Adequacy Ratio on Non-Performing Loans; and Company size does not moderate the effect of Activity Ratio on Non-Performing Loans. This study provides important implications for company management in considering factors that can influence credit risk, particularly Non-Performing Loans, in the food and beverage industry.

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