

The Ratio of Activity and Profitability to Capital Structure of Mining Companies on the Indonesia Stock Exchange

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ABSTRACT

The purpose of this study was to examine the effect of the Activity Ratio as measured by Total Asset Turn Over (TATO) and Profitability as measured by Sales Growth on Capital Structure as measured by the Debt to Equity Ratio. This type of research is causality research. The population in this study used 58 Mining Sector companies listed on the Indonesia Stock Exchange during the 2018-2020 period using a purposive sampling technique to obtain a sample of 49 companies whose observation period was 3 years with a total of 147 data observations. Testing research data using panel data regression analysis. The results showed that the Activity Ratio (TATO) partially had a positive and significant effect on Capital Structure (DER). Meanwhile, the Profitability Ratio (SG) partially has no significant effect on Capital Structure (DER) in Mining Sector companies listed on the Indonesia Stock Exchange for the 2018-2020 period.

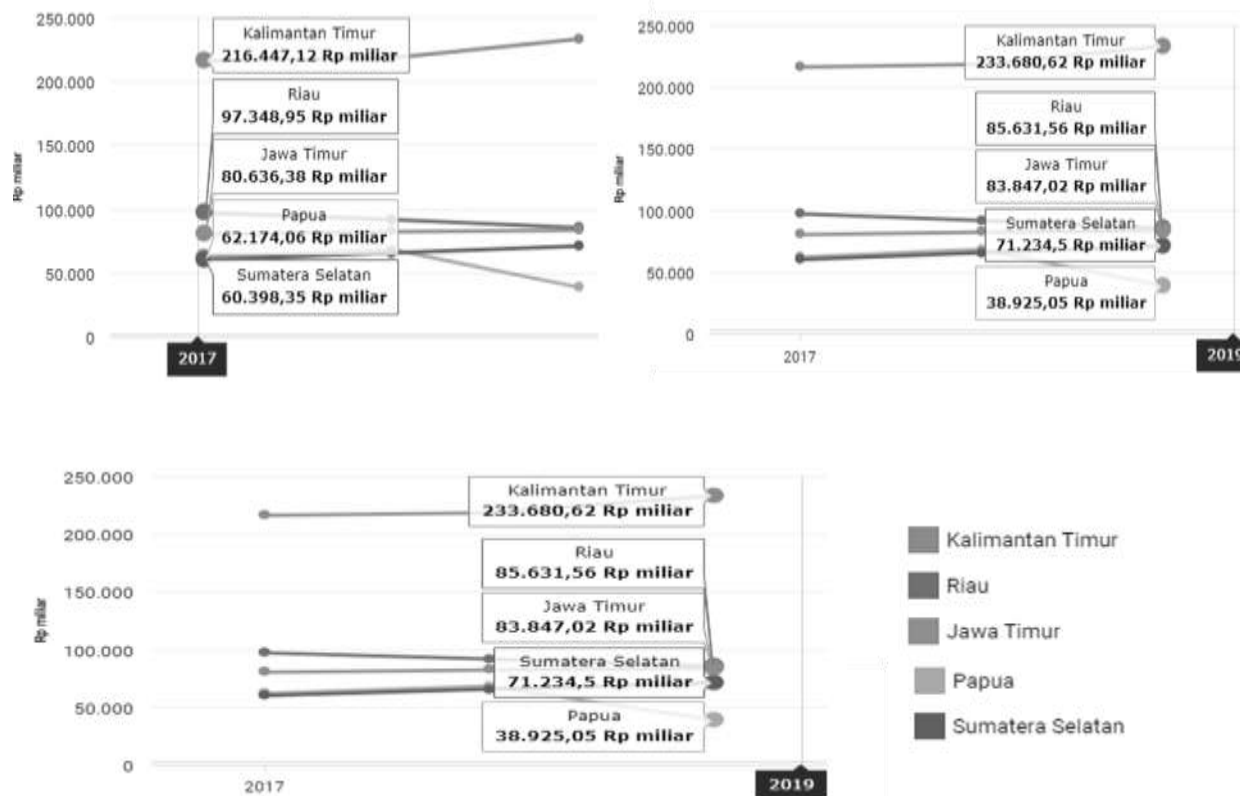
Keywords: Total Asset Turn Over; Sales Growth; Debt to Equity Ratio.

INTRODUCTION:

The capital structure is a company decision regarding the company's financial activities related to the composition of debt and equity used by the company as a source of funds chosen by the company. Capital structure decisions determined by the company not only affect the company's operational activities, but also affect the risks borne by the company itself (Fatoni et al., 2013). The company's capital structure can come from internal and external funds. The company's external funds in this case can be seen from the debt owned by the company. Debt is an obligation that must be paid off by the company to creditors by issuing something such as handing over goods or services such as handing over a sum of money owned by the company at maturity according to the agreement (Jumingan in Zahara and Zannati, 2018).

Companies with a larger proportion of their capital structure coming from debt have a more aggressive capital structure and a greater level of risk to investors or companies. The ideal ratio of total debt to assets is 40%, but in good financial conditions the level of debt can be high because it is expected to generate high operating profit (Utari, 2015). So in this case, the company must consider the financial condition in managing the level of debt it has. Large debts are caused by large capital requirements from companies, such as the mining industry which is known as a capital-intensive industry where each activity requires substantial funds due to exploration activities to obtain data on commodities to be mined up to production operations, processing and purification.

The mining industry itself is a sector that is growing rapidly in the third quarter of 2021, this is the highest growth since the Suharto era. This growth was due to commodity prices and global demand which continued to increase. There are five provinces that have the highest mining and quarrying trends since 2017-2019, as shown in the following graph.



Source: *katadata.co.id*

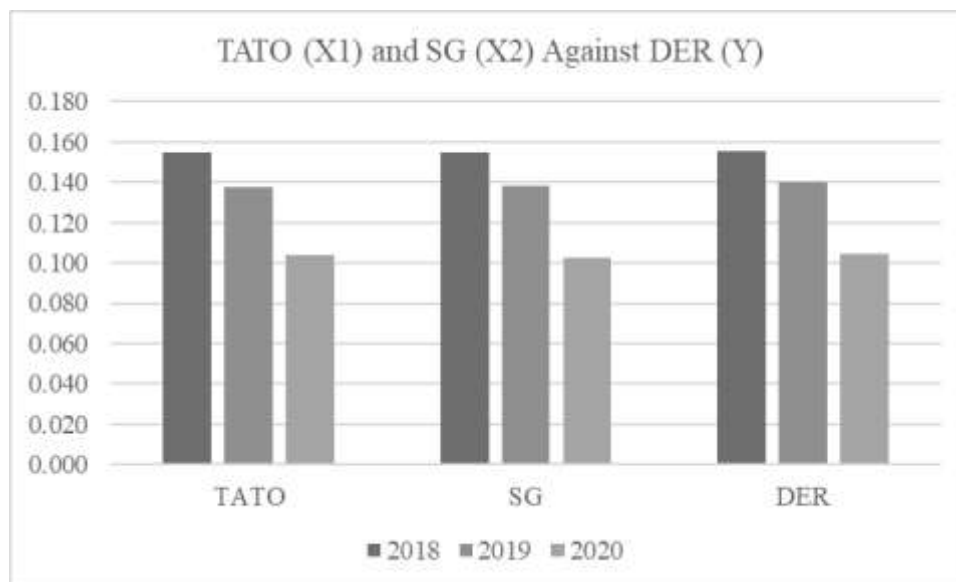
Figure 1. Mining and Quarrying GRDP Trends in the 5 Highest Provinces for the 2017-2019 Period.

Figure 1 shows how the level of Gross Regional Domestic Product (GRDP) from mining and quarrying from the 5 provinces that have the highest contribution during the 2017-2019 period. This high level of activity also requires large capital, so that in addition to using large internal funds, the company also requires substantial external funds. This is evident from the level of debt in the mining sector which in 2020 will reach IDR 100 trillion (Source:dunia-energi.com, 2020).

A high level of debt if not managed properly will have an impact on the survival of the company. So it is very important for companies to think carefully in deciding their capital structure. The importance of capital structure decisions for the condition of the company requires every company manager to know what factors need to be considered when making a capital structure decision. By knowing these factors, company managers will find it easier to make funding decisions, whether the additional capital needed for the development and growth of the company is obtained from debt or must issue new shares as an alternative (Fatoni et al., 2013). Among the many factors thought to affect the company's capital structure, in this study only two financial ratios were used which were predicted to affect the company's capital structure as measured using the Debt to Equity Ratio (DER), namely the activity ratio as seen from Total Asset Turnover and the profitability ratio as seen from Sales Growth.

The pecking order theory (Myers and Majluf, 1984) states the effect of the use of assets on the capital structure, that is, companies that operate effectively and efficiently have high profits, so they can save funds originating from sales revenue. So that the company will have sufficient funds to drive the company's activities and reduce the use of external funds originating from debt. Companies that have high profitability, which in this case is seen from the level of sales growth based on the pecking order theory developed by Myers and Majluf (1984), will prefer internal funding over external funding, because the use of internal funds will make companies are free from asymmetry (Hanafi, 2004). So it can be concluded that the ratio of

activity and profitability has a negative direction towards the company's capital structure derived from debt. However, in reality data from the average mining company listed on the Indonesia Stock Exchange during the 2018-2020 period shows a different direction. This can be seen in the following graphic image.



Source: Data processed by the author, 2020.

Figure 2. Graph of Average Total Asset Turnover (TATO), Sales Growth (SG) and Debt to Equity Ratio (DER)

Figure 2 shows the direction of the relationship between Total Asset Turnover (TATO), which is an indicator of the ratio of activity and Sales Growth (SG), an indicator of the measurement of the ratio of profitability to the company's capital structure as measured using the Debt To Equity Ratio (DER) which shows the direction positive, where when TATO and SG decreased for the 2019 and 2020 periods, DER also decreased in that period. So this causes a gap theory with field data. In addition, there are also gaps from empirical studies where the results were conducted by Serghiescu and Văidean (2014) which stated that there is a significant and positive effect of Total Asset Turnover (TATO) on capital structure. In contrast to the results of research conducted by Hartiwi et al. (2019) which states that there is no significant effect between asset turnover and the company's capital structure. In terms of sales growth, it was also found that there were differences in results as in the research conducted by Tornyeva (2013) Data et al. (2017), and Sha (2019) which show that there is a significant and positive relationship between sales growth and debt levels in the company's capital structure, while in the research of Ridloah (2010) and Cuong and Canh (2012) which states that sales growth has no effect significant to the capital structure of a company.

gap in theory and empirical studies causes researchers to be interested in conducting research on the Effect of Activity and Profitability Ratios on Capital Structure in Mining Sector Companies on the Indonesia Stock Exchange for the 2018-2020 period.

LITERATURE REVIEW:

Theoretical basis

Trade Off Theory explains the fact that every company's activities are generally partly financed by debt and partly from equity. The marginal benefit will decrease along with the increase in debt in the company's capital structure and cause its marginal cost to increase, so the company will focus on balance when determining the choice of debt and equity on its funding (Hsu & Hsu, 2011).

The Pecking Order Theory states that companies have a certain level of funding for the capital sources they will use to fund their operational activities. Myers and Majluf (1984) stated that the choice that companies generally choose in fulfilling their funding sources is that companies prefer to use available

internal funds.

Capital Structure

The capital structure is a mixture of equity and debt that companies use to maximize profits to increase the prosperity of stakeholders (Shireen and Kavita, 2019). The capital structure in this study is seen from the company's debt side by using the Debt to Equity Ratio (DER) measurement indicator, which is a ratio that compares all company debt to total equity owned. This ratio is useful for knowing the amount of funds provided by loans (creditors) with company owners. In other words, this ratio works for know every rupiah of own capital that is used as collateral for debt (Yuniastuti, 2017). The formula used in measuring capital structure is as follows: $DER = \text{Total Liabilities} / \text{Total equity}$.

Activity Ratio

The activity ratio is the ratio used to measure a company's effectiveness in expressing its assets (Yuniastuti, 2017). This efficiency is carried out both from sales activities, inventory, collection of receivables and others. The purpose of this ratio is to measure management's ability to use its assets optimally. The activity ratio in this study was measured using the Total Asset Turn Over (TATO) indicator, which is the ratio used to measure the turnover of all assets owned by the company and to measure the amount of sales earned from each rupiah of assets (Kasmir, 2010). This ratio is calculated as the quotient between the amount of sales (cash or credit) and the average total assets, where the average total assets are total assets at the beginning of the year plus total assets at the end of last year divided by two. Low total asset turnover means that the company has an excess of total assets, where the existing total assets have not been optimally utilized to generate sales. (Herry, 2015).

trade off theory explains that companies with high asset turnover will choose to use internal funds rather than external funds originating from debt, this is because the marginal benefit will decrease as debt increases in the company's capital structure and causes its marginal cost to increase, so the company will focus balance when determining the selection of debt and equity in funding (Hsu & Hsu, 2011). From this explanation it can be concluded that companies with smooth asset turnover will tend to reduce their debt levels because they have sufficient internal funds to finance their operational activities. The formula used in measuring capital structure is as follows: $TATO = \text{Sales} / \text{Total Asset}$.

Profitability Ratio

Profitability ratio is a ratio that indicates a company's ability to generate profits in relation to sales, total assets or equity (Corlett & Aigner, 1972). Profitability in this study is seen by using the Sales Growth (SG) measurement indicator which describes the growth in the number of sales from year to year during the current period. Companies that have a sales growth rate will affect their ability to maintain profits (Barton and Gordon, 1989).

Companies that have continuously increasing profitability will prefer internal funds compared to using debt. The priority of using internal funds in the pecking order theory is explained because it is caused by the use of internal sources which are safer because they are free from information asymmetry (Hanafi, 2004). So it can be concluded that profitability has a negative influence or direction on the company's capital structure originating from debt. This is supported by the results of research from (Yuniastuti, 2017) which found a significant negative effect of profitability on capital structure. The formula used in measuring capital structure is as follows: $SG = \text{Sales}_{(t)} - \text{Sales}_{(t-1)} / \text{Sales}_{(t)}$

Hypotheses

Based on the description of the theory and conceptual framework, the hypotheses that emerge in this study are:

Hypothesis 1: The activity ratio has a negative effect on the capital structure of Mining Sector companies listed on the Indonesia Stock Exchange for the 2018-2020 period.

Hypothesis 2: Profitability ratios have a negative effect on the capital structure of Mining Sector companies listed on the Indonesia Stock Exchange for the 2018-2020 period.

METHODOLOGY:

The type of data used in this research is quantitative data with the type of causality research. The population in this study used 58 Mining Sector companies listed on the Indonesia Stock Exchange during the 2018-2020 period using a purposive sampling technique to obtain a sample of 49 companies whose observation period was 3 years with a total of 147 data observations. Data analysis The method used in this research is panel data regression analysis using the Eviews application.

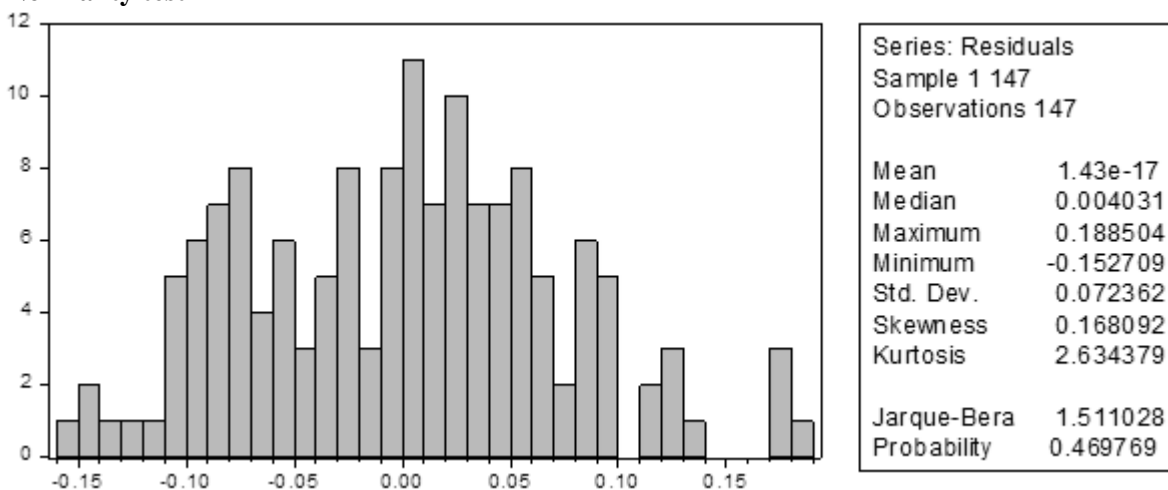
In estimating model parameters with panel data, there are three techniques offered, namely Common Effect Models (CEM), Fixed Effect Models (FEM) and Random Effect Models (REM). Determination of the selected model is carried out by conducting a chow test, test hausman and lagrange multiplier test (Gujarati, 2015).

RESEARCH RESULTS AND DISCUSSION:

Result

Classic assumption test

Normality test



Source: Author's calculations.

Figure 3. Jarque – Bera Normality Test.

The normality test results show a probability value of 0.469769 > 0.05 which states that the data is normally distributed (Gujarati, 2015).

Multicollinearity Test

Table 1. Multicollinearity Test with Matrix Correlation

	X1	X2
TATOO	1.000000	0.304326
SG	0.304326	1.000000

Source: Author's calculations.

Table 1 shows the test results of the correlation matrix between the independent variables of no more than 0.8, so it can be concluded that there are no signs of multicollinearity between the independent variables (Erlina, 2011).

Heteroscedasticity Test

Table 2. Godfrey's Pagan Breusch Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistics	3.505752	Prob. F(2,144)	0.0326
Obs*R-squared	6.825249	Prob. Chi -Square(2)	0.0330
Scaled explained SS	5.352190	Prob. Chi -Square(2)	0.0688

Source: Author's calculations.

Table 2 shows the results of the heteroscedasticity test using the godfrey pagan Breusch test with values Obs*R-squared $6.83 > 0.05$ so it can be concluded that there are no symptoms of heteroscedasticity in the regression model (Ghozali, 2016).

Autocorrelation Test

Table 3. Autocorrelation Test

R-squared	0.046430	Mean dependent var	0.005201
Adjusted R-squared	0.033186	SD dependent var	0.006671
SE of regression	0.006560	Akaike info criterion	-7.195531
Sum squared residue	0.006196	Schwarz criterion	-7.134502
Likelihood logs	531.8715	Hannan-Quinn criter.	-7.170734
F-statistics	3.505752	Durbin-Watson stat	1.977520
Prob(F-statistic)	0.032612		

Source: Author's calculations.

Table 3 shows the value of the Durbin-Watson statistic is 1.235860 . Because the value of the Durbin-Watson statistic lies between 1 and 3, namely $1 < 1.977520 < 3$, the non-autocorrelation assumption is fulfilled. In other words, there are no autocorrelation symptoms (Ghozali, 2016).

Panel Data Regression Model Selection

Chow test

Table 4. Chow test

Redundant Fixed Effects Tests			
Pool: DATAPANEL			
Test cross-section fixed effects			
Effect Test	Statistics	df	Prob.
Cross-section F	0.756310	(48.96)	0.8570
Chi-square cross-sections	47.149594	48	0.5076

Source: Author's calculations.

Table 4 shows the value of the cross-section Chi-square $47.149594 > 0.05$, which indicates that Common Effect Models (CEM) are better than Fixed Effect Models (FEM). Henceforth, a lagrange multiplier test will be carried out again as shown in the following table.

Table 5. Lagrange Multiplier Test

Breusch-Godfrey Serial Correlation LM Test:			
F-statistics	3.156685	Prob. F(2,142)	0.0456
Obs*R-squared	6.257463	Prob. Chi -Square(2)	0.0438

Source: Author's calculations.

Table 5 shows the value of the cross-section Chi-square $6.257463 > 0.05$, which indicates that the Common Effect Models (CEM) are better than Random Effect Models (REM). So it can be concluded that the model chosen in this study is the Common Effect Models (CEM).

Hypothesis testing

Based on the tests that have been carried out, it shows that the selected model is the Common Effect Models (CEM), as shown in the following table.

Table 4. Chow test

Dependent Variable: DER		
Method: Pooled Least Squares		
Date: 11/22/22 Time: 17:48		
Sample: 2018 2020		
Included observations: 3		
Cross-sections included: 49		

Total pool (balanced) observations: 147				
Variables	coefficient	std. Error	t-Statistics	Prob.
TATTOO	0.051428	0.009177	5.603768	0.0000
SG	0.006118	0.004453	1.373875	0.1716
C	0.142524	0.007381	19.31039	0.0000
R-squared	0.225189	Mean dependent var		0.132344
Adjusted R-squared	0.214428	SD dependent var		0.082208
SE of regression	0.072863	Akaike info criterion		-2.380279
Sum squared residue	0.764495	Schwarz criterion		-2.319250
Likelihood logs	177.9505	Hannan-Quinn criter.		-2.355482
F-statistics	20.92589	Durbin-Watson stat		2.016247
Prob(F-statistic)	0.000000			

Source: Author's calculations.

Partial Effect Significance Test (t test)

The results of the partial influence significance test (t-test) based on table 6 show:

- 1) The coefficient value of the independent variable Activity Ratio (TATO) is 0.051428, which is positive with a profitability value of 0.0000, namely < 0.05 , so it can be concluded that the Activity Ratio (TATO) has a positive and significant Capital Structure (DER) effect.
- 2) The coefficient value of the independent variable Profitability Ratio (SG) is 0.006118, which is positive with a profitability value of 0.1716, namely > 0.05 , so it can be concluded that the Profitability Ratio (SG) has a positive but not significant Capital Structure (DER) effect.

Effect Significance Test (F Test)

Based on Table 6, the probability value of the F test is Prob (F-Statistic) is 0.000000, i.e. < 0.05 , it can be concluded simultaneously that the Activity Ratio (TATO) and Profitability Ratio (SG) have a significant effect on Capital Structure (DER) on Mining Sector Companies on the Indonesia Stock Exchange 2018-2020 Period.

Analysis of the Coefficient of Determination (R²)

Based on Table 6, it is known that the Adjusted R-Squared value is 0.225756, this value interprets that the Activity Ratio (TATO) and Profitability Ratio (SG) can influence/ explain Capital Structure (DER) collectively 22.58% so that 77.42% is influenced by other factors not mentioned in this study.

Discussion

Effect of Activity Ratio (Total Asset Turn Over / TATO) on Capital Structure (Debt to Equity Ratio / DER)

The test results show that the activity ratio proxied by Total Asset Turn Over (TATO) has a significant positive effect . This result contradicts the Trade off Theory which states that companies with high asset turnover will choose to use internal funds rather than external funds originating from debt, this is because the marginal benefit will decrease as debt increases in the company's capital structure and causes its marginal cost to increase. , so that the company will focus on balance when determining the selection of debt and equity on funding (Hsu & Hsu, 2011). However, the results of this study are in line with Serghiescu and Văidean (2014) which state that there is a significant and positive effect on Total Asset Turnover (TATO) on the Debt to Equity Ratio (DER).

Results that are not in line with this hypothesis are reinforced by the average data of companies from the Mining sector that were sampled during the 2018-2020 period which shows a positive direction where when the activity ratio decreased during the study period, the company's capital structure also experienced a decline.

The Effect of Profitability Ratios (Sales Growth / SG) on Capital Structure (Debt to Equity Ratio / DER)

The test results show that the profitability ratio proxied by Sales Growth (SG) has a positive but not significant effect. This result is contrary to the pecking order theory which states that companies that have continuously increasing profitability will prefer internal funds compared to using debt, because the priority of using internal funds is safer because it is free from information asymmetry (Hanafi, 2004). However, the results of this study are in line with Ridloah (2010) and Cuong and Canh (2012) which show that there is no significant effect of Sales Growth (SG) on the Debt to Equity Ratio (DER).

Results that are not in line with this hypothesis are reinforced by the average data of companies from the Mining sector that were sampled during the 2018-2020 period which did not show a significant change in the influence between variables. Where when sales growth has decreased, debt to equity ratio does not show the level of decline that is not significant. So in this case, when the company experiences an increase or decrease in profitability, on the one hand, the external funds used by the company will not be affected

CONCLUSIONS, PROPOSALS, RECOMMENDATIONS:

Based on the results and discussion, it can be concluded that the Activity Ratio (TATO) partially has a positive and significant effect on Capital Structure (DER). Meanwhile, the Profitability Ratio (SG) partially has no significant effect on Capital Structure (DER) in Mining Sector companies listed on the Indonesia Stock Exchange for the 2018-2020 period. This result is not in line with the initial hypothesis which states that there is a partial negative effect of the Activity Ratio (TATO) and Profitability Ratio (SG) on Capital Structure (DER). In addition, the Adjusted R-Squared value is still very low, namely only 22.58%, so that 77.42% is influenced by other factors not mentioned in this study.

The suggestions that can be given are to future researchers to add or replace indicators from other activity ratios and proxies from profitability ratios such as Return On Assets (ROA), Return On Equity (ROE) and Return On Investment (ROI) to see the accuracy variable relationship. And can increase the number of years of observation.

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