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Oil Price and Leverage for Mining Sector Companies in Indonesia

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Abstract

The research was conducted to prove empirically the impact of oil prices, interest rates, profitability, company size, and liquidity on leverage in mining sector companies in Indonesia. The study population was 47 companies in the mining sector, using the purposive sampling method, the research sample was selected as many as 32 companies in a period of 5 years from 2014 to 2018, so that 160 observations were obtained. The data analysis method used a random effects model selected from panel data regression. The empirical findings show that profitability, liquidity, world oil prices and interest rates have a negative effect on leverage, while firm size has no impact. The empirical findings of this study can help the mining sector industry in Indonesia in making decisions about corporate debt policies that are significantly influenced by oil prices, profitability, liquidity and interest rates in order to create optimal debt policies.

Keywords: Leverage, Oil Price, Mining Sector Companies, Indonesia
JEL Classifications: G22, E22, E44, Q43

1. INTRODUCTION

The drop in world oil prices has created high uncertainty for mining companies, which is reflected in their financial performance, particularly in relation to the level of debt held by companies. Based on data released from the OJK (2019), the total debt of mining sector companies in 2014 amounted to 141.82 trillion rupiah, experiencing a decrease to 115.62 trillion rupiah, but in 2018 it experienced a sharp increase of 53 percent to 137.97 trillion rupiah. The high increase in debt has implications for increasing the company's financial burden to fulfill its obligations and has the potential to cause financial distress (Endri & Yerianto, 2019). Based on the debt performance of mining sector companies, the average Debt to Total Assets Ratio (DAR) of this sector has decreased since 2015. The DAR average started to increase in 2017 and is consistently increasing until it reached the highest point in the past 5 years in 2018 with 54,01%. The lowest DAR average value in this period happened in 2016, with the average value at 50,21%.

Research on the leverage response to changes in oil prices in mining sector companies has not been widely conducted. Many previous studies have proven that changes in stock returns are due to fluctuations in oil prices (see for example, Endri et al. 2021; Sivilianto & Endri, 2019; Endri & Nugraha, 2019; Gupta, 2016; Kang et al., 2016; Al -hajj et al., 2018). Aboura and Chevallier (2013) found the opposite effect of leverage due to changes in oil prices. Salisu and Fasa (2013) found evidence of the effect of persistence and leverage on oil price volatility. Narayan and Nasir (2020) found that oil market activity affects leverage. Domanski et al. (2015) reveal that the drop in oil prices has led to a rapid decline in asset value and greater leverage. Korotin et al. (2017) found the optimal debt portfolio under oil

price uncertainty. An optimal portfolio can reduce financial risk in the event of oil price uncertainty.

Apart from the price of oil, the company's leverage is also determined by other factors such as; interest rates, profitability, liquidity and company size. Endri et al. (2019), Widyawati and Endri (2018) and Shambor (2017) concluded that an increase in profitability can reduce debt. These results differ from studies of Alipour et al. (2015) and Saleem et al (2013) which prove that an increase in profitability can increase the company's leverage. Viriya and Suryaningsih (2017) prove that profitability does not affect leverage. For company size, Widyawati and Endri (2018), Gomez et al. (2016) and Alipour et al. (2015) found that a larger company size can reduce leverage, while the findings of Shambor (2017) and Saleem et al (2013) prove otherwise. Lumapow (2018) found that firm size is independent of debt policy. Research on liquidity was conducted by Shambor (2017), Viriya and Suryaningsih (2017), and Alipour et al. (2015) concluded that an increase in liquidity could increase corporate debt, while Sabir and Malik (2012) proved otherwise.

Mokhova and Zinecker (2014) revealed that in the decision-making process regarding the leverage and sources of financing it is also determined by macroeconomic variables. The interest rate variable as a macroeconomic variable has an impact on leverage, Dell'Ariccia et al. (2014) found that a reduction in interest rates led to greater leverage. Bokpin (2009) proved that expectations of an interest rate increase positively influence companies to make changes to debt policy. With the phenomenon of a drop in world oil prices and a gap in empirical research, the study identifies the determinants of leverage for mining sector companies in Indonesia, which consist of; oil prices, financial performance and macroeconomic variables.

2. LITERATURE REVIEW

Leverage or also known as capital structure is influenced by three groups of factors, namely; company specific factors, industry specific variables and macroeconomic variables. Capital structure theory developed quite rapidly after Modigliani and Miller (1958) first disclosed the proposition of leverage. Leverage are important decisions for companies because they have an impact on company value both through the share price channel and the cost of capital (Ahmed & Sabah, 2021). Therefore, in debt policy, companies must be able to create optimal capital structures that maximize share prices or minimize the cost of capital. The trade-off theory (TOT) (Jensen & Meckling, 1976) states that the company's capital structure is achieved through a balance between agency costs and bankruptcy, tax benefits and others. Agency costs can determine the optimal capital structure, so to reduce agency costs, debt structures and ownership must be determined. TOT proves that with the tax benefits of large debt and / or bankruptcy costs associated with small debt, profit, size, and growth have a positive impact on leverage.

Ross (1977) and others developed a leverage theory with information asymmetry between investors and managers, better known as signal theory. Ross (1977) and others developed a leverage theory with information asymmetry between investors and managers, which is called the signaling theory. Signaling theory says that leverage provides information to investors about cash flow because managers make changes to debt policy to convey profitability and risk to external users. The pecking order theory (POT) expressed by Myers (1984) uses a

hypothesis of information inequality between shareholders, creditors and managers when debt or equity is taken. POT does not require an optimal capital structure but companies usually follow a sequence of funding options; that is, companies prefer funding from retained earnings to third party funding and prefer debt financing to stock funding. The theory of free cash flow (FCFT) was revealed by Jensen (1986) states that companies face a conflict of interest shareholders and managers by using substantial free cash flow. When a company is leveraged, it creates an obligation to pay regular interest. This has an impact on decreasing the available cash balance for the company, thereby reducing the incentive for misuse of company cash (Stretcher & Johnson, 2011). Agency costs can be lowered with debt through saving free cash flow and pressuring managers operating at the lowest cost to pay off leverage and avoid bankruptcy.

2.1.Profitability and Leverage

Profitability is an indicator of the company's success in generating profits from the production process that is carried out. A company with high profit will have capital overflow, so there is a high chance that the company will have a low level of debt. As explained in the POT, it states that "the company with high profitability must have a low level of debt". The company will prioritize using their internal fundings compared to using external fundings. Shahnia et al. (2020), Doku et al. (2016), Shambor (2017) and Sabir and Malik (2012) concluded that the profitability variable has a negatively influence towards corporate debt policy. The research result of Saleem et al. (2013) concluded that the ROE variable has a positive effect towards corporate leverage. Meanwhile the research result of Viriya and Suryaningsih (2017) concluded that the ROE variable has no effect towards corporate debt policy.

H1: Profitability affects the leverage of mining companies

2.2.Firm Size and Leverage

According to TOT hypothesis, the bigger the company, the higher amount of debt the company can use, which is related to the risks of a big company. Low company risk may also cause the cost of debt to be lower than smaller companies, therefore pushing the big companies to borrow bigger in debt. Gomez et al. (2016) stated that size has a negative effect on company leverage, contrary to the results of Shambor (2017) who found that size has a positive impact on leverage. Lumapow's research (2018) found that the measure is independent of the company's debt policy.

H2: Company size affects the leverage of the mining company

2.3.Liquidity and Leverage

The liquidity of a company represents an idle balance so that the company can use internal funds as a source of financing. POT explains why companies have preference orders in choosing the source of fundings. With high liquidity, the company doesn't really need external funding as the internal funding is enough. Research done by Shambor (2017) and Harahap et al. (2020) concluded that liquidity has a negatively effect towards corporate leverage. However, a contradictory finding was proposed by Sabir and Malik (2012) and Endri et al. (2020b) that states that liquidity has a positively effect towards leverage.

H3: Liquidity affects the leverage of mining companies

2.4. Oil Price and Leverage

The increase of oil prices will increase the chance for mining companies that produce oil to obtain a higher profit. On the other hand, for companies in other mining sectors, the increase of world crude oil prices will increase their operational cost, especially on the fuel usage. The operational cost for fuel has a pretty big portion in the mining industry, therefore if world oil prices increase, companies will find an alternative funding, one of which include increasing debt to fulfill their operational needs. This is in line with the POT which explains how companies with large profits actually have lower leverage. Companies with large profits have abundant internal sources of funds. Thus, the company will prioritize the use of their internal funding compared to their external funding. Research done by Onguka (2019) and Kelikume et al. (2019) states that the world oil price has a negatively significant influence leverage. A contradictory conclusion is made by research done by Wattanatorn and Kanchanapoom (2012), Gupta (2016), and Dadashi et al. (2015) which concluded that world oil price has a positively significant influence towards corporate debt policy.

H4: The price of oil affects the leverage of mining companies

2.5. Interest Rate and Leverage

Rationally, companies tend to increase debt if interest rates fall because the impact is low interest expenses. Conversely, high interest rates will have an impact on increasing opportunity costs. POT theory states that if there are external funds in the funding of a company, therefore the first alternative of external data chosen is using debts, compared with having to issue new shares. If interest rates decline, this will further encourage companies to use debt to meet their funding. Conversely, if interest rates increase, this can make companies reconsider using debt because interest costs will be even greater. The research done by Endri et al. (2020a), Riaz et al. (2014) and Chadegani et al. (2011) conluded that the interest rate has a negatively significant impact towards corporate debt policy. Mokhova and Zinecker (2014) found an opposite relationship between interest rates and capital structure, both long and short term. Nejad and Wasiuzzaman (2015) and Memon et al. (2015) stated that the company gets more debt if low interest rates. Rehman (2016) found that high interest rates lead to less tax benefits than the cost of difficulties arising from the use of debt. However, Khemiri and Noubbigh (2018) state that when the interest rate increases, companies tend to increase, if followed by the expected increase in inflation. Bokpin (2009) found that companies prioritize short-term debt over long-term debt. Research conducted by Endri et al. (2020), Riaz et al. (2014) and Chadegani et al. (2011) concluded that an increase in interest rates causes a decrease in corporate leverage. Muthama et al. (2013) stated that an increase in interest rates can increase long-term debt but has the opposite effect on short-term debt. However, the findings of Mutama et al. (2013) found that an increase in interest rates increases corporate debt.

H5: Interest rates affect the leverage of mining companies

3. METHODOLOGY

The research population is mining sector companies listed on the Indonesia Stock Exchange from 2014 to 2018. This type of research is causation, which aims to prove hypotheses and analyze the influence between two or more variables on other variables. This study aims to estimate the impact of the variable oil price, interest rates, profitability, size, and liquidity on the dependent variable of capital structure.

Table 1: Variable Definition and Measurement

Var.	Definition	Measurement
ROE	Ability of a company in obtaining profit in conjunction with total equity	$ROE = \frac{Profit\ after\ tax}{Total\ Equity}$
SIZE	Total wealth owned by a company (total asset)	$SIZE = Ln\ Total\ Asset$
CR	Company's ability to fulfill their short term responsibility when due	$CR = \frac{Current\ Asset}{Current\ Debt}$
WTI	World Oil Price. The price used is the crude oil price on sale in West Texas Intermediates (WTI) taken monthly during the period of 2014-2018. Calculation units are $/barrel	$\%\Delta WTI = \frac{WTI_t - WTI_{t-1}}{WTI_{t-1}}$
SBI	Interest rate used is the SBI interest rate with monthly data during the period of 2014-2018. Starting from 19 August 2016, BI 7-Day Repo Rate is used as a reference interest rate. Calculation units are percentage (%)	SBI = Interest Rate of SBI
DAR	The company's ability to fulfill their long-term responsibilities.	$DAR = \frac{Total\ Debt}{Total\ Asset}$

Source: Processed by Researcher (2020)

This research uses the data panel regression model. In this model, there are three approaches made up of the random effect model (REM), common effect model (CEM) and fixed effect model (FEM). The data is processed using the 10th version of EViews software. The research model that is estimated is:

$$\mathbf{DAR_{it} = \alpha + \beta_1\ ROE_{it} + \beta_2\ SIZE_{it} + \beta_3\ CR_{it} + \beta_4\ WTI_{it} + \beta_5\ SBI_{it} + \varepsilon_{it};}$$

Which are : DAR= Debt to Asset Ratio, ROE = Return on Equity, SIZE = Firm Size, CR = Current Ratio, WTI = Oil Price, SBI = BI interest rate, ε = error component, β = slope, α = intercept, N = amount of observation, T = time, N x T = amount of data panel

4. Results and Discussion

4.1. Statistical Description

The result of the statistical data description of the research variables using EViews 10 can be seen in table 2. ROE variable shows the average of mining companies at -0.013179 with

standard deviation (SD) of 0.857314. This shows that mining companies are able to generate an operating profit of -1.318% of total equity on average. The average value shows that for every rupiah from the shareholder's equity, there is a loss of 0.1 rupiah. With the average value far from 100%, the company can be said to not yet effectively and efficiently produce profit. The maximum ROE value is 2.181546 from PT Apexindo Pratama Duta Tbk in 2017 while the minimum value is -9.560980 from PT Energi Mega Persada Tbk in 2016.

The SIZE variable shows that the average mining company is 16.58927 with a standard deviation of 3.615376. An average value that is greater than the standard deviation indicates that there is no large fluctuation of the SIZE variable in mining companies. The highest SIZE score was 22.02344 from PT Indika Energy Tbk in 2018 while the minimum value was 7.889009 from PT Medco Energi Internasional Tbk in 2014. The independent variable of CR shows that the average of mining companies is 1.818922 with standard deviation of 1.214403. With every 1 rupiah of current liabilities, the company has the ability to fulfill the liability 1.8 times from the actual values. This condition reflects that the mining company is in good financial health. The maximum value of CR is 6.913598 from PT Harum Energy Tbk in 2015 and the minimum value of CR is 0.052391 from PT Astrindo Nusantara Infrastruktur Tbk in 2016.

The oil price variable (WTI) shows an average of -0.087360 and a SD of 0.331222. An average value that is smaller than the SD indicates a large fluctuation in the WTI variable. During the research period this variable had the highest value of 0.450300 in 2016 and the lowest value of -0.458700 in 2014. The interest rate variable (SBI) shows an average of 0.060500 and a SD of 0.014133. An average value that is greater than the SD indicates that there is no large fluctuation in the SBI variable. During the study period the highest variable value was 0.77500 in 2014 and the lowest value was 0.042500 in 2017. The debt variable (DAR) shows an average of 0.514659 and a SD of 0.226820. The average value means the company has assets that are 51% financed through debt and 49% by equity. The highest DAR value was 1.292000 from PT Apexindo Pratama Duta Tbk in 2018 and the lowest DAR value was 0.097800 from PT Harum Energy Tbk in 2015.

Table 2 : Statistical Data Description of Research Variabels

	DAR	ROE	SIZE	CR	WTI	SBI
Mean	0.514659	-0.013179	16.58927	1.818933	-0.087360	0.060500
Median	0.489150	0.065650	16.52115	1.629550	-0.248400	0.060000
Maximum	1.292000	2.181500	22.02340	6.913600	0.450300	0.077500
Minimum	0.097800	-9.561000	7.889000	0.052400	-0.458700	0.042500
Std. Dev.	0.226820	0.857314	3.615376	1.214403	0.331222	0.014133
Skewness	0.551183	-8.883479	-0.332384	1.506386	0.551781	-0.004827
Kurtosis	3.042078	98.51314	2.063823	6.207786	1.808988	1.326133
Jarque-Bera	8.113212	62922.83	8.788971	129.1112	17.57573	18.67949
Probability	0.017308	0.000000	0.012345	0.000000	0.000153	0.000088
Sum	82.34550	-2.108600	2654.283	291.0292	-13.97760	9.680000
Sum Sq. Dev.	8.180090	116.8629	2078.280	234.4891	17.44357	0.031760

Source : Data processed with eviews 10 (2020)

4.2. Panel Data Regression Model Analysis

Panel data regression analysis is applied to identify the factors that influence the company's debt policy, by selecting one of the models, namely fixed effect, random effect and common effect. The model chosen is based on the paired test using the Hausman test, Chow test and Lagrange multiplier test

Table 3 : Chow Test Results

Effects Test	Stat.	d.f.	Prob.
Cross-sec. F	15.978065	(31,123)	0.0000
Cross-sec. Chi-square	258.371484	**31**	**0.0000**

Source : Data processed with eviews 10 (2020)

The calculation result showed in table 3, the chow-test showed that the prob. value of the F-test and the chi-square test is equal to 0.0000 < α = 5%, so that H_0 is rejected. It can be concluded that the FEM is better used to estimate the determinants of firm levegare.

Table 4 : LM Test Result

Null Alternative	Cross-sec. One-sided	Period One-sided	Both
Breusch-Pagan	150.3701	2.271510	**152.6416**
	(0.0000)	(0.1318)	**(0.0000)**
Honda	12.26255	-1.507153	7.605214
	(0.0000)	(0.9341)	(0.0000)
King-Wu	12.26255	-1.507153	2.727080
	(0.0000)	(0.9341)	(0.0032)
GHM	--	--	150.3701
	--	--	(0.0000)

Source : Data processed with eviews 10 (2020)

The calculation result of the LM-test BP is 152.6416 bigger than the chi-square table with α = 0.05 and df = 9, which is at 4.321, or the LM-test Breusch-Pagan probability value is equal to 0.0000 < α = 0.05. Therefore, it can be concluded that the REM is more appropriate in estimating the determinants of the company's debt policy at mining companies.

Table 5 : Hausman Test Result

Test Summary	Chi-Sq. Stat.	Chi-Sq. d.f.	Prob.
Cross-sec. random	0.000000	**5**	**1.0000**

Source : Data processed with eviews 10 (2020)

The Hausman test results concluded that the Chi-Square prob. value of 1.0000 is greater than α = 5%, so the random effects model is used to estimate the determinants of firm leverage. Based on the paired test results of the three panel data regression models, the right choice is the REM used to estimate the determinants of debt policy for mining companies.

4.3. Panel Data Regression Model Estimation

The estimation of the determinant of corporate debt policy in mining companies in Indonesia during 2014-2018 with independent variable of Return on Equity (ROE), Firm Size (SIZE), Current Ratio (CR), World Oil Price (WTI) and interest rates (SBI) using a random model in the equation model are as follows:

DAR = 0.671723240706 - 0.0264512144758*ROE + 0.00295913479845*SIZE - 0.066776348631*CR - 0.045309472942*WTI - 1.47105643447*SBI

Tabel 6 : Estimated Determinants of Lverageg (DAR)

Var.	Coeff.	SD	t-Stat.	Prob.
C	0.671723	0.116521	5.764828	0.0000
ROE	**-0.026451**	**0.007610**	**-3.475655**	**0.0007**
SIZE	0.002959	0.004444	0.665933	0.5065
CR	**-0.066776**	**0.015274**	**-4.371864**	**0.0000**
WTI	**-0.045309**	**0.022291**	**-2.032620**	**0.0438**
SBI	**-1.471056**	**0.570234**	**-2.579743**	**0.0108**

R^2	0.209949	Mean dep. var	0.128241
Adjusted R^2	0.184298	S.D. dep. var	0.100969
S.E. of regression	0.091191	SS resid	1.280634
F-stat.	8.184827	D-W stat	1.118056
Prob(F-stat.)	0.000001		

Source : Data processed with eviews 10 (2020)

Based on the coefficient test of the data panel regression random effect partially using the t-test, it was found that 4 out of 5 of the independent variable that is used in the research of evaluating the determinant of corporate debt policy of mining companies in Indonesia during 2014-2018 has a significant effect. Meanwhile, the evaluation of the overall independent variable inputted into the regression panel model using random effect is evaluated using F-test. The F-Test result is seen in table 7, which showed that the F-stat value is at 8.184827 with the prob. value of 0.000001 or smaller than α = 0.05 meaning that H0 is rejected. This state that the variables which are made up of ROE, SIZE, CR, WTI and SBI altogether influences the corporate debt policy of companies in the period of 2014-2018 significantly, with confidence level at 95%.

To evaluate the goodness of-it which is measured with the determination coefficient (R^2) showed that the value is 0.209949, meaning that the variation of the increase and decrease of

corporate debt policy of mining companies in Indonesia can be explained by ROE, SIZE, CR, WTI and SBI by 21%, while the remaining 79% can be explained by variables outside. The determination coefficient that is adjusted (R^2 adjusted) resulted in the value of 0.184298 meaning that after considering the degree of freedom of the REM, the independent variables used in this research can explain the changes that happened within the mining companies in Indonesia, which is at 18.43%

4.4. Discussion

Empirical evidence showed that the ROE variable has a negatively influence towards the corporate leverage. This state that companies with high profitability will have an abundance of capital, therefore it is highly unlikely that they have a high leverage. Empirical findings support the POT which states that the company with high profitability will have low leverage because they have lots of internal funding sources, so the company will prioritize using their internal funding compared to using external funding. This research result is relevant by previous researches done by Sabir and Malik (2012), Doku et al. (2016) and Shambor (2017) which concluded that profitability variable has a negatively effect towards corporate leverage. In contrast, these results do not support the findings of Saleem et al. (2013) and Viriya & Suryaningsih (2017) who concluded that the ROE variable has a significant positive effect on company debt policy.

Based on the research result, it showed that the SIZE has a positive but insignificant effect towards the corporate leverage. These results find that size has no effect on the company's debt policy. However, the positive direction in which the SIZE variable has towards the policy is in line with the TOT hypothesis which states that the bigger the company, the higher the chance that the company can use a higher debt, in relation to the low risk of big companies. The low risk of big companies causes the debt cost to be lower compared to smaller companies. This is what drives big companies to use bigger debts. This result supports existing researches done by Cortez et al. (2012) and Lumapow (2018). These researchers concluded that the size of the company doesn't have any effect towards corporate debt policy. In the contrary, the result of this research doesn't support the result of researches done by Shambor (2017) and Gomez et al. (2016), which states that the SIZE variable influences the corporate debt policy positively and significantly.

Empirical evidence showed that the CR has a negatively effect towards the corporate debt policy of mining companies in Indonesia. This indicates that companies with average liquidity levels have a relatively low debt level. The level of liquidity that a company has describes the amount of idle balance, so that the company can use their internal fundings for the operational costs. This research result is in line with the POT that explains why companies have levels of preference in choosing a source of funding. With high liquidity levels, companies don't need external funding as the internal funding is enough. This result is consistent with the research done by Karacaer et al. (2016) and Shambor (2017). These researchers found that the CR has a negatively influence towards the corporate debt policy. However, it doesn't support the research done by Sabir and Malik (2012) which concluded that the CR variable influences the corporate debt policy positively and significantly.

Research results find that the WTI has a negatively effect towards the corporate debt policy. The increase of oil price will of course increase the chance of mining companies that produce oil to gain more profit. However, other companies that produce other alternative energy like coal also have a chance to increase their profit because consumers will look for other

alternative forms of fuel. This causes the negatively significant effect of WTI towards the corporate debt policy. Even though the increase in oil price will significantly increase the operation costs and make the company to find other additional funding sources, this doesn't apply to 27 out of 32 companies that are used as a sample of companies that produce energy. This research result is in line with the POT that explains why companies with high profitability will have a lower level of debt, as they have a higher source of internal funding. Therefore, the company will prioritize the use of internal funding compared to external funding. Research results by Onguka (2019) and Kelikume et al. (2019) also state that the world oil price has a negative effect towards corporate debt policy. Contradicting results are found by Wattanatorn and Kanchanapoom (2012), Gupta (2016) and Dadashi et al. (2015) as they concluded that the world oil price has a positively effect towards corporate debt policy.

The research results found that the SBI variable has a negatively effect towards the corporate debt policy of mining companies in Indonesia. This explains that if the SBI interest rate is experiencing a decline, it will push companies to increase the use of debts to fulfill their funding needs. However, if the SBI interest rate is increasing, it will make companies re-think whether to use debts as one of the funding sources because the cost of interest rate will become bigger. This research result is in line with POT which states that if the external funds are used for funding, therefore the first alternative external funding chosen will be debt, compared to having to introduce new shares. This result is in like with research done by Riaz et al. (2014) and Chadegani et al. (2011), which states that the level of interest rate has a negatively significant effect towards corporate debt policy. On the other hand, this isn't supported by the research result of Muthama et al. (2013) which concluded that the level of interest rate has a positively significant result towards corporate debt policy. Widyawati and Endri (2018) empirical findings prove that interest rates have no effect on company debt policy.

5. Conclusions

This study examines the effect of world oil prices, interest rates, profitability, size, and liquidity on the leverage of mining sector companies in Indonesia. Based on the analysis and discussion of leverage determinants, it can be stated that the variable Return on Equity (ROE), Current Ratio (CR), world oil prices (WTI), and SBI interest rates have a negative effect on corporate leverage (DAR), while the variable size company (SIZE) has no impact on the company's leverage. The empirical findings of this study provide managerial implications for companies that the decline in oil prices can increase corporate debt. Therefore, companies must strive to maintain good and smooth liquidity and continue to increase profitability as an alternative source of internal financing and reduce debt financing. Changes in interest rates must also be anticipated by the company against the possibility of a high increase that can burden the company to pay for it. Suggestions for further research can be made on companies from other sectors and add leverage determinants that have not been covered in this research, for example; asset structure, sales growth, costs, taxes, or external variables, such as; inflation and exchange rates.

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