

## **The Determinants on Cost of Debt in the Manufacturing Industry**

Wira Wijaya Gea<sup>1\*</sup>, Suwinto Johan<sup>2</sup>

<sup>1,2</sup>Master of Management in Technology Faculty of Business President University,  
Cikarang

\*wiragea5@gmail.com

### **ABSTRACT**

The manufacturing industry is the biggest contributor to the gross domestic product of Indonesia. The cost of debt is one of the factors for manufacturing companies in carrying out their operations. Lowering the cost of debt could attract manufacturing companies to raise funds through debt that will help the companies generate profit. The purpose of this research is to figure out the impact of factors that may affect the cost of debt in the Indonesian manufacturing industry. This study is a quantitative research that uses multiple regression as statistical analysis to test the hypotheses by using E-views 10 as a tool. The data population is manufacturing firms in Indonesia and samples are manufacturing firms listed on Indonesia Stock Exchange for 2015-2019. The results show that institutional ownership, debt to equity ratio, and interest coverage ratio impact the cost of debt. The implication is the institutional owners hold the majority of ownership thus the policy of the company is mostly decided by institutional ownership. This also explains that the creditors consider the direct aspects related to debt, in this study are a debt to equity ratio and interest coverage ratio. While managerial ownership, firm size, and return on assets do not impact the cost of debt. The small proportion of managerial ownership makes the most of the company's decisions are not based on the managerial owners. Then, the profitable company chooses the retained earnings instead of borrowing the debt to minimize the expense in serving the interest. Thus, profitability does not impact the cost of debt.

**Keywords:** Cost of Debt; Debt; Manufacturing Industry

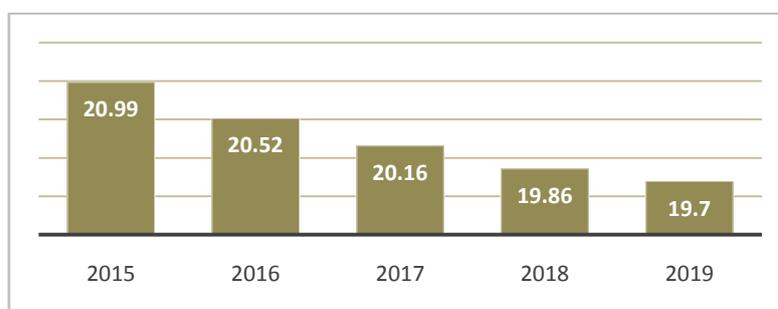
*History Article: Recieved: 2021-10-10 Revised: 2021-10-13 Accepted: 2021-10-28*

*\*Corresponding author*

### **INTRODUCTION**

According to the Indonesian Minister of Industry, the manufacturing sector is still the most significant contributor to Indonesia's gross domestic product. In 2019, the manufacturing industry contributed 19.70% of the total GDP. Even in a pandemic situation, the manufacturing sector still provides the most significant contribution to the national gross domestic product (GDP) structure during the second quarter of 2020, reaching 19.87% (Kementerian Perindustrian Indonesia, 2020). However, the manufacturing sector's contribution to Indonesia's GDP in 2019 is lower than previous years' contribution. In that case, the manufacturing sector's

contribution to the GDP of Indonesia has been declining. Based on Badan Pusat Statistik (2020) in Figure 1., the manufacturing industry's contribution to Indonesia's GDP was 20.99% of the total GDP in 2015. Then, in 2016 the contribution of the manufacturing sector to the GDP of Indonesia was 20.52% of the GDP. At the end of 2017, the manufacturing sector's contribution to Indonesia's GDP was 20.16%. In 2018, the manufacturing industry's contribution to Indonesia's GDP was 19.86% of the total GDP. The data indicates that the manufacturing industry's added value to Indonesia's GDP has decreased.



**Figure 1.**

**Manufacturing sector contribution to GDP of Indonesia**

(Source: Badan Pusat Statistik, 2020)

According to Susanto (2018), the interest rate significantly impacts Indonesia's economic growth. The decline in interest rates will bring a positive effect on the development of the real sector. It happened because the interest rate is the primary indicator in choosing business decisions and monetary policy (Parakkasi, 2016). High-interest rates will push the cost of raw materials and products more expensive, which causes the market not to absorb goods. It will have an impact on decreasing company revenue which has implications for the sluggish trade. Then, the decline in investment happened because of the increase in interest rates. Investors are more likely to choose a safe position to obtain high and definite interest returns. While the opportunity to get a return on investment is uncertain, it will face various risks, both in type and intensity of the risk. Thus, the cost of debt will significantly impact the real sector and Indonesia's investment activities, including the manufacturing industry.

Besides the phenomena above, this research is conducted because there are still inconsistencies in results from the previous studies. Research conducted by Wahyuni (2019) found that managerial ownership harms the cost of debt, while Septian and Panggabean (2017) found that managerial ownership positively affects the cost of debt. Swissia and Purba (2018) found that institutional ownership harms the cost of debt. On the other hand, Dirman (2020) found that institutional ownership has no impact on the cost of debt. Research conducted by Septian and Panggabean (2017) found that firm size harms the cost of debt. However, Safdar and Yan (2016) found that firm size has no impact on the cost of debt. Dirman (2020) found that the debt to equity ratio positively impacts the cost of debt. However, Septian and Panggabean (2017) found that the debt to equity ratio does not affect the cost of debt. Research conducted by Fuandy (2018) found that the interest coverage ratio harms the cost of debt. Meanwhile, Safdar and Yan (2016) found that the interest coverage ratio has no impact on the cost of debt. Research conducted by Sherly and Fitria (2019) found that return on the asset harms the cost of debt, while Dirman (2020) found that return on the asset does not affect the cost of debt.

This topic is essential for the manufacturing company considering what things they must consider when making the debt contract. Indeed, some variables might affect the cost of debt. Nevertheless, the existence of managerial ownership, institutional ownership, firm size, debt to

equity ratio, interest coverage ratio, and return on an asset in determining the cost of debt is still questionable. The differences in the result from previous studies become one of the motivations of this research. The novelty of this research is this research will show new insight since no study was researched to determine the impact of those independent variables on the cost of debt altogether, especially in manufacturing firms listed on the Indonesia Stock Exchange (IDX) from 2015 to 2019.

## LITERATURE REVIEW

The literature review represents the theoretical and scientific concepts. In this section, we will discuss the purpose of a literature review. The citation refers to last name or family name author and published year without page number. Subtitle in this section there are keywords, conceptual framework, and development of a hypothesis.

The cost of debt reflects how much money must be spent by a company since using a loan. In another definition, the cost of debt is the rate that must be received from investment to achieve the rate of return for the debtholder/creditor (Martin, 2014). Before taxes, the cost of debt comes from dividing the paid interest expense by the total interest-bearing debt in one accounting period. However, companies that use part of their funds from debt will be liable to pay interest. Therefore, interest is a form of burden for the company. With this interest expense, the amount of income tax payments will reduce. Therefore, the calculated cost of capital must also be after-tax. The cost of this debt needs to be adjusted for tax (Sutrisno, 2009).

Jensen and Meckling (1976) argue that agency conflict is possible to occur because there is a separation between ownership (the principal party) and the controlling party (the agent). Nevertheless, the agency conflict also could be happened because of the proportion of ownership. The manager's participation in making decisions can reduce agency conflicts between stakeholders' stock and managers. With increasing managerial ownership, company managers become more selective in making financing decisions and funding involving high risks consistent with the interests of shareholders (Wahyuni, 2019). The higher insider/managerial ownership, the negative perception of the debtholders will decrease and mitigate the cost of debt. It happened because the creditors consider the risk of the company cannot afford to pay the debt will reduce since high insider ownership is in line with the interests between the board of directors and shareholders that can cause the reduction of the cost of debt.

Different results found by Septian and Panggabean (2017) show that managerial ownership positively impacts the cost of debt. Managerial owners have an incentive to maximize the return obtained through investment and financing decisions at the burden borne by creditors. It happened because the liability of shareholders is limited. Shareholders have an incentive to invest in riskier projects than those determined by creditors. Thus, creditors bear losses when the company's investments fail and cannot pay the debt.

Swissia and Purba (2018) argue that the greater the institution's share ownership, the less the cost of debt. It happened because the effectiveness of the control mechanism will be high on management performance. The creditors see the company's risk as low, and of course, this impacts the cost of debt borne by the company as the return requested by creditors. The institutional parties have a greater incentive to strictly supervise management and company policies (Meiriasari, 2017). Effective monitoring by institutional parties can also reduce management's opportunistic behavior, causing the company's risk to be smaller and lower return desired by creditors.

Indeed, the existence of institutional ownership in a company would provide monitoring actions to the management. Nevertheless, if there is no severe action in applying the principles of good corporate governance, the large number of institutional ownerships do not guarantee a reduction in corporate risk (Dirman, 2020). Septian and Panggabean (2017) found that institutional ownership does not affect the cost of debt because most public companies in Indonesia are still family-owned companies. As a result, institutional monitoring tends not to influence creditor decisions in determining the company's cost of debt.

Septian and Panggabean (2017) found that the size of a firm has a significant impact on the cost of debt. It happened because the firm with a higher amount of assets has an immense opportunity to pay its liability. It will give the confidence to the creditor to give the lower interest rate because the risk that the company cannot afford to pay the debt will decrease if the amount of assets of the company is higher (Septian and Panggabean, 2017). Suryani et al. (2019) showed that firm size had a negative and significant effect on the cost of debt. Creditors will more trust larger companies because their performance has been proven and indicates a promising future for the company (Meiriasari, 2017). In addition, the greater the company's total assets, the company will expect to provide a more certain rate of return to investors. Thus, firms with more considerable total assets will bring the expectation to have lower costs of equity and costs of debt.

Safdar and Yan (2016) show that the size of a firm does not affect the cost of debt. Large companies that have easier access to the capital market than small companies may not necessarily obtain funds quickly in the capital market (Wardani and Rumahorbo, 2018). It happened because investors will provide loans considering the company's size and consider other factors, such as its prospects, the nature of its current management, and its capability. Awaloedin and Nugroho (2019) also found that firm size has no impact on the cost of debt. The result showed that the firm's size does not reflect the ability of a company to pay the debt.

Dirman (2020) found that the debt to equity ratio positively impacts the cost of debt. The use of high debt as a source of funding results in greater risk for the company. Thus, debt needs to pay attention to the company's ability to generate profits. The higher the debt owed by the company, the greater the risk because the company must pay debts. The higher the debt rate of a company, which indicates the more significant the portion of loan capital, the company must pay a higher fixed cost of debt. It causes shareholders and creditors to ask for additional returns, increasing the cost of equity and the cost of debt for the company.

Nevertheless, Septian and Panggabean (2017) found that the debt to equity ratio has no impact on the cost of debt. It happened because the creditors assume that the management can manipulate by increasing the equity owned by the company. The greater the company's equity than its debt, the smaller the debt to equity ratio. The creditors do not only use the leverage ratio in considering the investment decisions they make.

The interest coverage ratio gauges the degree to which operating income can decay before the company cannot meet its yearly interest costs. If the company fails to pay interest on the debt, the creditor may bring it to legal action, and the worst is the firm's bankruptcy. The interest coverage ratio helps to project the ability of the firm to meet charges of interest on its liability (Ehrhardt & Brigham, 2011). The higher the interest coverage ratio, the lower the interest of the debt will be. Fuandy (2018) found that the interest coverage ratio can reduce the cost of debt. A high-interest coverage ratio represents an increase in its ability to meet its obligations. In other words, the company's risk is not capable of returning the debt is decreasing.

Some research showed different results about the impact of interest coverage ratio on the cost of debt. Ningsih and Hartini (2017) found interest coverage ratio does not impact the cost of

debt. It means the high or low-interest rates do not affect the cost of debt. It allows the company to increase funds by using debt regardless of the interest on the loan because the company is only looking for a profit without considering the high or low-interest rates provided by creditors. Safdar and Yan (2016) also show that the interest coverage ratio does not impact the cost of debt.

The company's ability to generate profits will also make the company use more internal funding, which will provide more retained earnings. It will result in the mitigation of external capital or debt. Companies will quickly get external funds because, with relatively stable sales, they can get more loans when compared to companies with unstable sales (Brigham & Houston, 2006). With the company's continued growth, the level of creditor trust in the company and the willingness of capital owners to provide loans through debt also increases. The use of small debt in this funding will make the cost of debt incurred also be small. In addition, the use of low debt by the company causes the cost of debt arising from the use of debt to be also low (Sherly et al., 2016). High profits make managers prefer to use internal funds in this financing because managers tend to avoid risk, and debt will increase the chance that threatens the manager's position (Sherly & Fitria, 2019).

Dirman (2020) stated that return on the asset has no impact on the cost of debt. Internal funding chosen by the company causes the company to use low external funds or not even use external funding in debt. The loan does not interfere with existing performance because their assets can directly cover it. It means that the company already has higher capital than companies with long-term debt (Ningsih and Hartini, 2017). The company relies on retained earnings to determine capital structure policies, resulting in lower debt in terms of financing.

### **Hypotheses Development**

Managers have to manage a company transparently to avoid agency conflict. The existence of managerial ownership in a company makes managers more careful in making decisions related to debt policy since they also have an interest in a dividend in the firm. Managers suppress the amount of debt to minimize the risks, which impact creditor decisions in determining the level of return. The action to mitigate the risk gives confidence to the creditor in the company. Wahyuni (2019) found that the higher insider/managerial ownership, the negative perception of the debtholders will decrease. From the explanation, the first hypothesis is:

H<sub>1</sub>: Managerial ownership has an impact on the cost of debt.

In a significant amount, institutional ownership outside the company will result in strict supervision of the management carried out outside the company. The control from outside parties encourages management to show better performance and manage the company transparently. Institutional investors can better monitor management actions than individual investors, where institutional investors will become more skeptical about manipulation actions carried out by management (Swissia and Purba, 2018). Meiriasari (2017) found that institutional ownership has a positive impact on the cost of debt because the higher the institution's share ownership, the control mechanism on the company will be more effective including when dealing with debt. Thus, the second hypothesis is:

H<sub>2</sub>: Institutional ownership has an impact on the cost of debt.

Company size is one of the indicators used by investors in assessing the assets and performance of the company. Total asset projects the firm size. The greater the company's total assets, the greater it is expected to provide a more definite rate of return to investors. As a result, the company's risk of failing to pay off debt will decrease. As a result, the cost of debt borne by the company is lower. Meiriasari (2017) and Suryani et al. (2019) found that the size of a firm harms the cost of debt. It happened because the firm with a higher amount of assets has an immense opportunity to pay its liability. The third hypothesis is:

H<sub>3</sub>: Firm size has an impact on the cost of debt.

The debt to equity ratio can see the proportion of the company's debt or external parties and the company's equity. Sources of funding within the company can be obtained from internal or external companies. The internal funds come from retained earnings, and the external funds come from debt or the issuance of new shares. Companies that use debt are responsible for the interest and principal costs of the loan. The use of debt (external financing) has a large enough risk of not paying off debt. Thus, the use of debt needs to pay attention to the company's ability to generate profits. Dirman (2020) asserts that the debt to equity ratio has a positive impact on the cost of debt. The use of high debt as a source of funding results in greater risk for the company. From the explanation, the fourth hypothesis is:

H<sub>4</sub>: Debt to equity ratio has an impact on the cost of debt.

The interest coverage ratio gauges the degree to which operating income can decay before the company cannot meet its yearly interest costs. If the company fails to pay interest on the debt, the creditor may bring it to legal action, and the worst is the firm's bankruptcy. The interest coverage ratio helps to project the ability of the firm to meet charges of interest on its liability. Fuandy (2018) found that the interest coverage ratio harms the cost of debt. A high-interest coverage ratio represents an increase in its ability to meet its obligations. The fifth hypothesis is:

H<sub>5</sub>: Interest coverage ratio has an impact on the cost of debt.

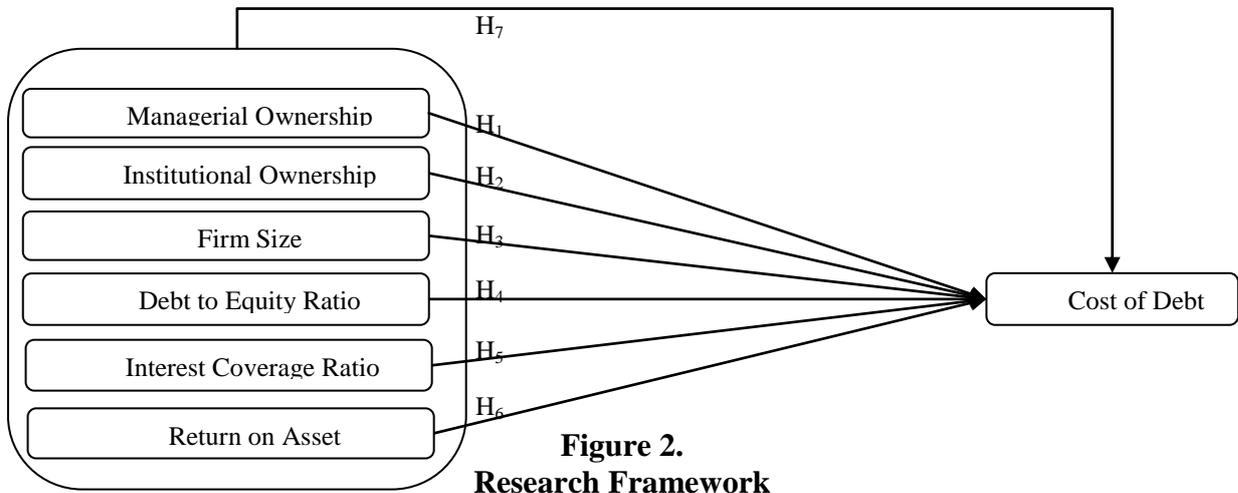
Return on assets (ROA) is an indicator that reflects the company's financial performance level of success. The higher the ROA value means that the financial performance is getting better. If the value of ROA increases, it means that the company's profitability also increases. Managers prefer internal funding rather than using external financing in the form of debt because if the company uses debt, it will increase the risk for the manager. After all, managers have to think about paying the principal and interest expenses of the debt. The company with more profit tends to use less debt. The use of small debt in this funding will make the cost of debt incurred also be small. Sherly and Fitria (2019), and Sherly et al. (2016) found that the return on the asset harms the cost of debt. Then, the sixth hypothesis is:

H<sub>6</sub>: Return on the asset has an impact on the cost of debt.

This research will also discuss the effects of independent variables on the cost of debt simultaneously projected by the adjusted R<sup>2</sup>. Coefficient of determination measures how much the independent variables explain the dependent variable in this research. According to Ghozali (2016), coefficient of determination analysis (adjusted R<sup>2</sup>) uses a significant level from 0 until 1. The closer the result is to 1, all independent variables can clearly explain the dependent variable. Finally, the seventh hypothesis is:

H<sub>7</sub>: All independent variables have an impact on the cost of debt simultaneously.

Based on hypotheses development, the research framework will be:



**Figure 2.**  
**Research Framework**  
(Source: Adjusted by Researcher)

**METHODS**

This study is quantitative research that uses multiple regression as statistical analysis to test the hypotheses. The population of this research is the manufacturing companies listed on Indonesia Stock Exchange (IDX). The researcher used purposive sampling for collecting the secondary data with several requirements; (1) manufacturing firm, (2) listed on IDX in 2015 until 2019, (3) the audited annual financial reports, and (4) ownership information.

The total samples for this study are 19 manufacturing firms from 2015 until 2019. The samples do not include 2020 because 2020 is considered an abnormal situation because of the COVID-19 outbreak. The data used in this study is panel data consist two-dimensional data from the combination of time dimension (time series) and individual company dimension (cross-section) (Johan et al., 2012). Thus, the researcher used multiple regressions as a statistical analysis method because this research analyzes the impact of some independent variables on a dependent variable. The researcher performed multiple regression using E-views 10 software to analyses the impact of independent variables on the dependent variable.

To conduct this research, the researcher used the measurements for the variables as follows:

**Table 1. Variables and Measurements**

Variables	Measurements	Sources
Cost of debt	$COD = \frac{Interest\ expense}{Interest\ bearing\ debt} (1 - T)$	Sánchez-Ballesta and García-Meca (2011); Sutrisno (2009)
Managerial ownership	$MO = \frac{Shares\ held\ by\ managerial}{Total\ issued\ shares} \times 100\%$	Wahyuni (2019)
Institutional ownership	$IO = \frac{Shares\ held\ by\ institution}{Total\ issued\ shares} \times 100\%$	Wahyuni (2019)
Firm size	$LNSIZE = \ln Total\ asset$	Suryani et al. (2019)
Debt to equity ratio	$DER = \frac{Total\ debt}{Total\ equity}$	Dirman (2020)

Interest coverage ratio	$ICR = \frac{EBIT}{Interest\ Expense}$	Ehrhardt and Brigham (2011)
Return on asset	$ROA = \frac{Net\ income}{Total\ Asset}$	Johan (2020)

This research attempts to reveal the effect of independent variables on the dependent variable by using multiplier regression as a statistical analysis method. Based on the hypotheses and explanation about variables and the measurements, the multiplier regression model in this research is below:

$$COD_{it} = C + \beta_1 MO_{it} + \beta_2 IO_{it} + \beta_3 LNSIZE_{it} + \beta_4 DER_{it} + \beta_5 ICR_{it} + \beta_6 ROA_{it} + \varepsilon_{it}$$

where;

COD = cost of debt after tax

MO = the proportion of issued shares that own by managerial to the total of issued shares

IO = the proportion of issued shares that own by the institution to the total of issued shares

LNSIZE = natural log total asset

DER = debt to equity ratio

ICR = interest coverage ratio

ROA = return on asset

## RESULT AND DISCUSSION

### Descriptive Statistics

Descriptive statistics is the information and the overall qualities of the factors. Descriptive statistics help the data collected is easier to interpret (Gjermëni & Ramosaco, 2017). Based on the data in this research, the descriptive statistics of data is below:

**Table 2. Descriptive Statistics**

	COD	MO	IO	SIZE (in a million Rp)	DER	ICR	ROA
Mean	7.79%	3,70%	80.73%	29,760,993	1.24	6.01	5.12%
Median	7.60%	0.99%	84.25%	3,211,235	0.93	3.93	4.87%
Maximum	16.51%	14.29%	99.01%	351,958,000	5.39	20.69	16.74%
Minimum	1.20%	0.00%	53.46%	377,111	0.21	0.07	-2.18%
Std. Dev.	3.30%	.26%	15.07%	69,655,265	0.94	5.43	3.94%
Observations	95	95	95	95	95	95	95

(Source: Researcher data processed with E-views 10)

Based on Table 1., the minimum value of the dependent variable, COD, is 1.20%. The minimum value of COD is from PT Mulia Industrindo Tbk in 2018. It means based on data, PT. Mulia Industrindo Tbk spent the least cost of debt they used in 2018. The maximum value of COD is 16.51% from PT Phapros Tbk in 2016, which means PT Phapros Tbk spent the highest COD in 2016 compared with other companies in this study. The mean value of the COD is 7.79%, with a standard deviation of 3.30%.

The minimum value of the MO is 0,00%. The minimum value of MO is from PT Chitose Internasional Tbk starting from 2015 until 2017. It means, based on data, the outstanding shares of PT Chitose Internasional Tbk held by managerial or insider owners with the slightest

proposition from 2015 until 2017. The maximum value of MO is 14.29% from PT Voksel Electric Tbk. The mean value of the MO is 3.70%, with a standard deviation of 3.26%.

The minimum value of the IO is from PT Voksel Electric Tbk Tbk, the outstanding shares of PT Voksel Electric Tbk held by the institution owner with the slightest proposition at 53.46% in 2015. The maximum value of IO is from PT Semen Indonesia (Persero) Tbk that 99.01% of shares issued by PT Semen Indonesia (Persero) Tbk are institution ownership. The mean value of the IO is 80.73%, with a standard deviation of 15.07%.

The minimum value of firm size is Rp 337.110.748.359 from PT Sekar Laut Tbk. Based on data, the total asset of PT Sekar Laut Tbk is the lowest in 2015 compared with all data. On the other hand, the maximum value of Rp 351.958 billion is from PT Astra International Tbk in 2019, which means PT Astra International Tbk is the most prosperous manufacturing firm in assets compared with all data in this study. The mean value of the SIZE is Rp 29,760,993, with a standard deviation of Rp 69,655,265.

The minimum value of DER is 0.21. The minimum value of the debt to equity ratio is from PT Chitose Internasional Tbk. Based on data, PT Chitose Internasional Tbk has the lowest loan in 2015 compared with all samples. On the other hand, the maximum value of DER is 5.39 from PT Mulia Industrindo Tbk, which means PT Mulia Industrindo Tbk has the highest debt in 2015 compared with all data in this study. The mean value of the DER ratio is 1.24, with a standard deviation of 0.94.

The minimum value of the ICR is 0.07. The minimum value of ICR is from PT Siantar Top Tbk. It means based on data, PT. Siantar Top Tbk has the lowest ability to cover the debt in 2018 if compared with all samples. On the other hand, the maximum value of ICR is 20.69 from PT Astra International Tbk, which means PT Astra International Tbk has the highest ability to cover the debt in 2015 compared with all data in this study. The mean value of ICR is 6.01, with a standard deviation of 5.43.

The minimum value of ROA is -2.18%. The minimum value of return on asset is from PT Mulia Industrindo Tbk. It means based on data, PT. Mulia Industrindo Tbk has the lowest ability to generate a profit using the asset in 2015 compared with all data. The maximum value of ROA is 16.74%, which comes from PT Siantar Top Tbk, which means PT Siantar Top Tbk has the highest ability to generate profit by using the asset in 2019 if compared with all data in this study. The mean value of the ROA is 5.12%, with a standard deviation of 3.94%.

### Model Selection

The selection of the research model comes from the result of the Chow test, Hausman test, and Lagrange Multiplier test (Winarno, 2009). Chow test determines whether pool least square or fixed-effect model is suitable. If below the level of significance at 0.05, then the fixed-effect model is selected. Otherwise, if above the level of significance at 0.05, then the pool least square is selected. Hausman test shows the proper research model, whether a fixed effect model or a random effect model. If below the level of significance at 0.05, then the fixed-effect model is selected. Otherwise, if above the level of significance at 0.05, then the random effect model is selected.

Meanwhile, the Lagrange Multiplier test helps to choose between the random effect model or pool least square. If below the level of significance at 0.05, then the random effect model is selected. Otherwise, if above the level of significance at 0.05, then the pool least square is selected.

**Table 3. Model Selection**

Model	Result	Selected Model
Chow	0.0003***	Fixed Effect Model
Hausman	0.6160	Random Effect Model
Lagrange Multiplier	0.0000***	Random Effect Model

**Note:** Significant at  $\alpha = ***0.05$

(Source: Researcher data processed with E-views 10)

Based on Table 3., the Chow test result is 0.0003 below 0.05. It means the fixed effect model is selected. Hausman's test result is 0.6160 above 0.05. Thus, the random effect model is selected. Lagrange Multiplier test result is 0.0003 below 0.05. It indicates that the random effect model is selected. Based on the Chow test, Hausman test, and Lagrange Multiplier test in Table 3., the random effect model is suitable for this research.

### Classic Assumption

The normality test aims to test whether the regression model confounding or residual variables have a normal distribution (Ghozali, 2016). The data is distributed normally if the probability value is greater than the significant level (0.05). The normality test result shows the probability is 0.2884 and higher than the significant level (0.05). Thus, the data are distributed normally. The multicollinearity test determines whether there is a strong correlation between the independent variables included in the model formation (Ghozali, 2016). This research uses the Pearson model. If the correlation coefficient value  $<0.8$  between different variables means multicollinearity does not occur, the data is suitable for regression models. In this research, there is no value of correlation coefficient that higher than 0.8 between different variables. It means multicollinearity does not occur, and the data is suitable to be used in regression models. The value autocorrelation test came from the value of Durbin Watson (DW). The value of DW in this research is 1.9008, with dL equals 1.5117 and dU equals 1.8266. The DW value is between the  $dU < DW < 4 - dU$  values,  $1.8266 < 1.9008 < 2.1734$ . It indicates there is no autocorrelation. A good regression model is a homoscedasticity or heteroscedasticity that does not happen (Ghozali, 2016). If the value of the probability of each variable is greater than the significance level (5%), it means the heteroscedasticities do not occur. In this research, the value of the probability of each variable is greater than the  $\alpha$  (0.05). As a result, the heteroscedasticities do not happen.

### Hypotheses Testing

**Table 4. Multiple Regression Result**

Variable	Coefficient	Prob.
C	0.3411	0.0007
MO	-0.1525	0.1759
IO	-0.0865	0.0193***
LNSIZE	-0.0057	0.1019
DER	0.0092	0.0380***
ICR	-0.0019	0.0012***
ROA	0.0215	0.8148

**Note:** Significant at  $\alpha = ***0.05$

(Source: Researcher data processed with E-views 10)

Based on Table 4., the multiple regression model in this research will be:

$$COD = 0.3411 - 0.1525MO - 0.0865IO - 0.0057LNSIZE + 0.0092DER - 0.0019ICR - 0.0215ROA$$

In Table 4., the result of the coefficient of MO is -0,1525, which means MO impacts COD negatively. The results also explain that a 1% increase of MO will decrease 15.25% of the COD. Indeed, the managerial owners are interested in the company in the form of a dividend that will trigger the managerial owners to make some improvements and innovations to generate more profit and allocate some to pay the debt. It also gives a good perception from the

creditors. As a result, they probably charge lower interest because they believe the firm can pay debt with the existence of the managerial owners in the firm.

Nevertheless, the value of the t-test is 0.1759 above the level of significance 5%; then, MO has no significant impact on COD. It happened because the proportion of managerial ownership in Indonesian manufacturing companies tends to be small. The institutional owners still hold most of the shares proposition of the manufacturing firms. As a result, most of the company's decision is based on the institutional owners and not the managerial owners. The result is in line with Dirman (2020) that also found the managerial ownership has no impact on the cost of debt. Therefore, the first hypothesis that states managerial ownership impacts the cost of debt is not supported.

The result shows that the coefficient of IO is -0.0865, which means IO impacts COD negatively. The results also explain that a 1% increase of IO will decrease 8.65% of the COD. It means higher institutional ownership will reduce the cost of debt. The institutional owners have a role in monitoring the company's performance from the external point of view and giving objective judgment regarding the company's performance. The controlling and monitoring actions conducted by institutional owners will push the management to serve the debt. The value of the t-test is 0.0193 below the level of significance 5%; then, IO has a significant impact on COD. Since the institutional owners hold most of the share of the manufacturing firms in Indonesia based on the descriptive analysis, the action and decision taken by the institutional owner will affect the firm significantly. Thus, controlling and monitoring activities that conducted by institutional owners will be more effective. Effective monitoring by institutional parties can also reduce management's opportunistic behavior, causing the company's risk to be smaller and lower return desired by creditors. The result is in line with Swissia and Purba (2018) and Meiriasari (2017). The second hypothesis that states institutional ownership impacts the cost of debt is supported.

The coefficient of LNSIZE is -0.0057, which means LNSIZE impacts COD negatively. The results also explain that a 1% increase of LNSIZE will decrease 0.57% of the COD. Indeed, the more prosperous company in assets can give the creditors confidence to pay the debt. Nevertheless, the amount of assets is not the only factor that shows the company's capability in serving the debt. The value of the t-test of LNSIZE is 0.1019 above the significance level of 5%, indicating no significant impact on COD. It happened because the amount of assets does not reflect a company's ability to pay the debt. The creditors compare the total asset with another aspect, such as the total liabilities, to see the ability to pay the debt. If the liabilities are already high or higher than the company's assets, the creditors tend to worry about the company's capability. Thus, the firm size cannot stand alone in determining the manufacturing firm's capability to pay the debt. The result in line with Awaloedin and Nugroho (2019), Safdar and Yan (2016), and Wardani and Rumahorbo (2018). Therefore, the third hypothesis that states firm size impacts the cost of debt is not supported.

The coefficient of DER is 0.0092, which means DER has a positive impact on COD. The results also explain that a 1% increase of DER will increase 0.92% of the COD. The companies that have lower DER indicate the company has more space to gain more debt. Equity takes the role of the primary source of capital in running the business. Thus, this will give the confidence to the creditors to give a lower cost of debt since the company shows its capability to manage the debt through the lower DER.

The debt to equity ratio has a significant impact on the cost of debt. It is shown by the value of the t-test of DER is 0.0380, below the significance level of 5%. The use of high debt as a source of funding results in greater risk for the company. The higher the debt owed by the company, the greater the risk because the company must pay debts. Dirman (2020) also found that the debt to equity ratio positively impacts the cost of debt. It causes shareholders and

creditors to ask for additional returns, increasing the cost of equity and the cost of debt for the company. Thus, the fourth hypothesis that states the debt to equity ratio impacts the cost of debt is supported.

Table 4. shows that the coefficient of ICR coefficient is -0.0019, which means ICR impacts COD negatively. The results also explain that a 1% increase of ICR will decrease 0.19% of the COD. A higher interest coverage ratio indicates that the company can meet the obligation to pay the interest from the debt. The creditor will assume that the company will meet the obligation to pay the debt and give lower interest since the risk is also lower. The value of the t-test is 0.0012 below the level of significance 5%, then ICR has a significant effect on COD. The higher the interest coverage ratio, the lower the interest will be. The interest coverage ratio helps to project the ability of the firm to meet charges of interest on its liability (Ehrhardt & Brigham, 2011). If the company fails to pay interest on the debt, the creditor may bring it to legal action, and the worst is the firm's bankruptcy. The result is in line with Fuandy (2018). Thus, the fifth hypothesis, which states that the interest coverage ratio impacts the cost of debt, is supported.

The coefficient of ROA is 0.0215, which means ROA has a positive impact on COD. The results also explain that a 1% increase of ROA will increase 2.15% of the COD. It means a profitable company tends to use more capital to generate profit. The source of the money may come from the debt that will also increase the cost of debt that must be paid. However, the value of the t-test of ROA is 0.8148 above the significance level of 5%, indicating no significant impact on COD. It happened because the profitable company relies on retained earnings to determine capital structure policies, resulting in relatively lower debt in company financing. Thus, the company does not need to borrow a loan from the creditor. The profitable company chooses to use the retained earnings to minimize the spending to pay the interest expense. The result is in line with Ningsih and Hartini (2017) and Dirman (2020). The sixth hypothesis, which states that return on assets impacts the cost of debt, is not supported.

In Table 5., the value of adjusted  $R^2$  reflected how much the independent variables, managerial ownership, institutional ownership, firm size, debt to equity ratio, interest coverage ratio, and return on asset, explain the dependent variable, cost of debt. The result is adjusted  $R^2$  is 0.1421; thus, all independent variables can explain the dependent variable of 14.21%, and 85.79% are other factors that can influence the dependent variable. The  $R^2$  is small because the variables that determine the cost of debt in this study are just a few factors that impact the cost of debt.

Based on the explanation above, the results can be summarized into the following table:

**Table 5. Results**

<b>Independent variables</b>	<b>Impact on Cost of debt (COD)</b>
Managerial ownership	No impact
Institutional ownership	Negative impact
Firm size	No impact
Debt to equity ratio	Positive impact
Interest coverage ratio	Negative impact
Return on asset	No impact

(Source: Adjusted by Researcher)

**Table 6. Adjusted R<sup>2</sup> and F-statistic**

Model	Result
Adjusted R-squared	0.1421
Prob(F-statistic)	0.0031

(Source: Researcher data processed with E-views 10)

Table 6. shows that the result of Prob (F-statistic) is 0,0031. The value is smaller than the significant level. It proves that a significant effect simultaneously of the independent variables, managerial ownership, institutional ownership, firm size, debt to equity ratio, interest coverage ratio, and return on asset, explains the dependent variable, cost of debt.

## **CONCLUSION, MANAGERIAL IMPLICATIONS, LIMITATION AND FUTURE RESEARCH**

### **Conclusion**

Based on the result, all the independent variables significantly impact the cost of debt at 14,21%. However, only institutional ownership, debt to equity ratio, and interest coverage ratio have partially impacted the cost of debt. While managerial ownership, firm size, and return on assets do not partially affect the cost of debt.

### **Managerial Implications**

The managerial implication of this study is that managerial owners do not have control in determining debt policy because the institutional owners hold the majority of ownership. The controlling and monitoring activities conducted by institutional owners will push the management to serve the debt. The firm size cannot stand alone in determining the manufacturing firm's capability to pay the debt. It happened because the creditors see the ability of a company to pay the debt by the aspects that directly relate with debt; in this study are the debt to equity ratio and interest coverage ratio. The profitable company chooses the retained earnings instead of borrowing the debt to minimize the expense in serving the interest. Thus, profitability does not impact the cost of debt. The researcher suggests to the company more concern on the leverage aspects since the leverage in this study shows the significant effect on the cost of debt. The creditors must focus more on how the company manages their debt before they lend the debt. The ownership proportion of institutional also becomes a consideration. This research investigated the cost of debt of manufacturing companies only until 2019.

### **Limitation**

The data used in this study was only able to investigate the condition of the Indonesian manufacturing industry starting from 2015 until 2019. It happened because the year 2020 is considered as an abnormal situation caused by a pandemic situation. The determinants in this research are limited and the adjusted R<sup>2</sup> is small. That means the independent variables are investigated in this research still limited and cannot explain most of the factors that can affect the cost of debt. This can be improved in future research.

### **Future Research**

The R<sup>2</sup> is only 14,21% and becomes the weakness of this research. It indicates that this research only explains a few factors that impact the cost of debt. Thus, future research is expected to use another variable to measure the determinants of the cost of debt that are not discussed in this research, such as audit opinion, inflation, bond rating, and other suspected factors.

**REFERENCES**

- Awaloedin, D., & Nugroho, R. (2019). Pengaruh Ukuran Perusahaan, Rasio Utang dan Umur Perusahaan terhadap Biaya Utang (Studi pada Perusahaan Manufaktur yang Terdaftar di Bursa Efek Indonesia tahun 2015-2017). *Jurnal Rekayasa Informasi*, 8(1), 52-69.
- Badan Pusat Statistik (2020). *Produk Domestik Bruto Indonesia Triwulanan 2016-2020*. Jakarta: BPS RI.
- Brigham, E. F., & Houston, J. F. (2006). *Dasar-dasar Manajemen Keuangan* (10th ed.). Jakarta: Salemba Empat.
- Dirman, A. (2020). Cost of Debt: The Impact Of Financial Factors and Non-Financial Factors. *Dinasti International Journal of Economics, Finance & Accounting*, 1(4), 550-567.
- Ehrhardt, M. C., & Brigham, E. F. (2011). *Financial Management: Theory and Practice* (13th ed.). United States of America: South-Western.
- Fuandy, S. N. (2018). Pengaruh Information Risk terhadap Cost of Capital Badan Usaha Non-Kewangan yang Terdaftar di Bursa Efek Indonesia Periode 2012-2014. *Jurnal Ilmiah Mahasiswa Universitas Surabaya*, 7(2), 2199-2215.
- Ghozali, I. (2016). *Aplikasi Analisis Multivariate dengan Program IBM SPSS 23*. Semarang: BPFE Universitas Diponegoro.
- Gjermëni, O., & Ramosaco, M. (2017). Descriptive Analysis of Characteristics : A Case Study of a Phone Call Network Graph. *UBT International Conference*, 50(1), 19-26.
- Kementerian Perindustrian Indonesia. (2020, August 7<sup>th</sup>). *Sektor Industri Masih Jadi Andalan PDB Nasional*. Accessed on May 1<sup>st</sup>, 2021 from: <https://kemenperin.go.id/artikel/21922/Sektor-Industri-Masih-Jadi-Andalan-PDB-Nasional>
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the Firm: Managerial Behavior, Agency Cost, and Ownership Structure. *Journal of Financial Economics*, 3(4), 305-360.
- Johan, S. (2020). Determinant of Financial Company Profitability. *Jurnal Aplikasi Bisnis Dan Manajemen (JABM)*, 6(2), 447.
- Johan, S., Siregar, H., Maulana, A., & Santosa, P. (2012). Do Japanese Firms Bring Value to Emerging Country?: Empirical Evidence Indonesia Financial Services Industry. *International Research Journal of Finance and Economics*, 101(101), 6-16.
- Lin, C., Ma, Y., Malatesta, P., & Xuan, Y. (2011). Ownership structure and the cost of corporate borrowing. *Journal of Financial Economics*, 100(1), 1-23.
- Martin, K. T. (2014). *Financial Management: Principles and Applications* (12th ed.). United States of America: Pearson Education Limited.
- Meiriasari, V. (2017). Pengaruh Corporate Governance, Kepemilikan Keluarga, Kepemilikan Institusional dan Ukuran Perusahaan (Firm Size) Terhadap Biaya Hutang. *Jurnal Ilmiah Ekonomi Global Masa Kini*, 8(1), 28-34.
- Ningsih, T. L., & Hartini (2017). Pengaruh Risiko Informasi terhadap Biaya Modal pada Perusahaan Manufaktur yang Terdaftar di Bursa Efek Indonesia. *Jurnal Ilmiah Administrasi Bisnis dan Inovasi*, 1(2), 115-134.
- Parakkasi, I. (2016). Analisis Dampak Suku Bunga terhadap Pertumbuhan Sektor Riil dan Sektor Investasi dalam Perspektif Syariah di Kota Makassar. *Jurnal Penelitian Humano*, 7(2), 161-180.
- Safdar, R., & Yan, C. (2016). Information Risk, Stock Returns, and the Cost of Capital in China. *China Finance Review International*, 6(1), 77-95.
- Septian, M., & Panggabean, R. (2017). Faktor-Faktor yang Mempengaruhi Biaya Utang Pada Perusahaan Kompas 100. *Jurnal Ekonomi*, 22(1), 37-51.
- Sherly, E. N., & Fitria, D. (2019). Pengaruh Penghindaran Pajak, Kepemilikan Institusional, dan Profitabilitas terhadap Biaya Hutang (Studi Empiris pada Perusahaan Manufaktur yang Terdaftar di BEI Periode 2011- 2015). *Ekombis Review*, 7(1), 58-69.

- Sherly, E. N., Indriani, R., & Suranta, E. (2016). Pengaruh Penghindaran Pajak, Kepemilikan Institusional dan Profitabilitas terhadap Biaya Hutang. *Jurnal Fairness*, 6(2), 135-148.
- Suryani, A., Imelda, E., & Wirianata, H. (2019). Pengaruh Earnings Variability, Ukuran Perusahaan, dan Negative Earnings terhadap Biaya Utang. *Jurnal Multiparadigma Akuntansi*, 1(3), 919-926.
- Susanto, S. (2018). Pengaruh Inflasi, Tingkat Suku Bunga, dan Nilai Tukar terhadap Pertumbuhan Ekonomi Indonesia. *JEBI: Jurnal Ekonomi Bisnis Indonesia*, 12(1), 52-68.
- Sutrisno. (2009), *Manajemen Keuangan Teori, Konsep dan Aplikasi. Buku 7 (1<sup>st</sup> ed)*. Yogyakarta: Penerbit Ekonisia.
- Swissia, P., & Purba, B. (2018). Pengaruh Struktur Kepemilikan Institusional, Kepemilikan Manajerial, Kepemilikan Keluarga, Pengungkapan Sukarela Dan Leverage Terhadap Biaya Utang. *Jurnal Akuntansi Dan Keuangan*, 9(2), 42-65.
- Wahyuni, P. D. (2019). Good Corporate Governance and Firm Size on Cost of Debt: Evidence from Indonesian Listed Companies, *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 9(2), 257-265.
- Winarno, W. W. (2009). *Analisis Ekonometrika dan Statistika dengan E-views (2<sup>nd</sup> ed)*. Yogyakarta: UPP STIM YKPN.

