Effect of profitability, liquidity, and company size on capital structure: Evidence from Indonesia manufacturing companies

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Abstract	This study aims to see the effect of profitability,liquidity, and company size on the capital structure of the manufacturing companies listed on the Indonesian Stock Exchange in 2018-2020. Secondary data is used for the research and it is collected using purposive sampling. The data then analyzed using multiple linear regression. Research results shows that profitability and companies size have no effect on capital structure. Meanwhile, the liquidity have effect on capital structure. The limitation of this study is the lack of a research period to the small sample used. Researcher's suggestion for further research is to increase the time period of the study, which is aimed to increase the accuracy of the research data.
Keywords	capital structure; profitability; liquidity; company size

INTRODUCTION

Established companies have clear goals and are listed in their vision and mission. The purpose of establishing a company according to (Corelli, 2018) is to maximize the value of the company itself. Maximizing the intended is the conformity between the interests of shareholders (investors) for themselves and in it there is also the best choice for the company. Before making an investment, prospective shareholders will make predictions in seeing the value of the company reflected in the stock price that aims to obtain high returns (Isti'adah, 2015). The statement is supported by (Chasanah, 2018) where the value of the company will affect the investor's rate of return in the form of dividends. Maximum company value gain will not occur if the company does not have good planning for its operations (Brigham, 2017). This plan is done by looking at the financial projections listed in the company's financial statements, namely by thinking about the company's funding sources (Brigham, 2017). The statement was supported by (Aamir et al., 2013) who revealed one of the important things in managing finances is about corporate financing that will have an impact on the company's wealth. Thus, it can be concluded that the funding decision is one of the important factors of the company to manage the company as well as the consideration of

investors in investing their capital. An optimal capital structure can have an impact on increasing the value and wealth of the company. Capital structure is defined as a form of overview of the proportion of a company's finances consisting of long-term debt and its own capital as a source of financing for a company (Irham, 2017).

Capital structure theory was first introduced by Modigliani and Merton, (1985) where aspects of the focus in optimizing capital structures were financed by leverage. However, in 1984 there was a change in how the source of financing chosen by the company regarding its capital structure. With the change in aspects that initially only regarding debt or leverage levels then discussing which sources of financing are more appropriate, inviting researchers to conduct more specific research related to which factors affect the structure of capital to be optimal. Shil et al., (2019) revealed that the company's capital structure is influenced by internal and external factors of the company. The company's internal factors consist of profitability, size, age, liquidity, tangible, and so on. While external factors of the company that affect the structure of capital are inflation, interest rates, and monetary policy.

We address the phenomenon gap by adding debt as one of the factors that support productivity based on the Ministry of Finance (2020) the addition of debt amounted to Rp 877.5 trillion in 2018-2020 which was originally only Rp 784.7 trillion to Rp 1,662.2 trillion. In addition, Indonesia is included in the list of 10 low-middle income countries with the most foreign debt (Audriene, 2020). Based on a review of the literature and gap phenomena that have been outlined, where the capital structure will affect the value of the company, researchers take the company's internal variables, namely profitability, liquidity, and company size. The variable was chosen on the grounds that it can support the productivity level of the company as meant by the Ministry of Finance (2017) which utilizes debt to support the productivity of the company.

In addition to the gap phenomenon that has been conveyed about the structure of capital, then there are inconsistencies in the results of previous research. (Chandra, 2017) revealed that the variables that affect the capital structure are the size of the company and profitability while for liquidity has no effect on the capital structure. In contrast to the results of research by (Yudhiarti et al., 2016) where liquidity affects the structure of capital. Then, the results of Anggun et al., (2015) study showed the size of the company has no influence on the structure of capital. Margaretha & Zai (2013) states that the size of the company, liquidity, financial flexibility, asset structure, growth, profitability has a significant influence on the capital structure. While research conducted by Andika & (Sedana, 2019) revealed that profitability has no effect on the capital structure.

Based on gap and research gap phenomena, researchers are interested in conducting research on factors that affect capital structure in terms of variables of profitability, liquidity, and company size with a sample of research on manufacturing companies listed on the Indonesia Stock Exchange for the period 2018-2020. This sector was chosen on the grounds that companies engaged in the manufacturing sector have a large capital to start their business. The manufacturing sector has many tangible assets that are of great value as well. Furthermore, to carry out the operations of the manufacturing sector requires many external sources of funding.

In addition, based on Pusparisa (2019) revealed the 10 largest dividend-giving companies, one of which is Bukit Asam. This dividend distribution when viewed from the aspect of its capital structure, companies that have optimal financing planning will have an impact on the rate of return on investment (Isti'adah, 2015).

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Brigham & Ehrhar (2017) reveals there are three theories related to capital structure. The first theory is trade off theory. This theory shows the optimal capital structure in it involves taxes as a form of profit addition (Sewart C. Myres, 1984). In this theory, companies that have a high level of profitability will try to reduce their taxes by increasing their debt ratio, so that the additional debt will reduce taxes where there are interest expense payments on loans.

The second theory is the Pecking Order Theory. This theory states that companies that have a high level of profit instead the debt ratio will be low. In this sense, it means that the company uses its internal funds as financing for the company's operations.

The third theory is signaling theory. This theory discusses how signals of success or failure of management (as an agent) should be conveyed to the owner (as principal). Signal theory explains that signaling is done by management to reduce the imbalance between the information held by the agent and the principal.

The structure of capital is influenced by several internal factors as outlined in the introduction. Based on the results of previous research that revealed about factors that affect the structure of capital including profitability, liquidity, and the size of the company.

Profitability affects the capital structure on the grounds that the greater the amount of profit earned by the company will increase the company's internal funding source (Irham, 2017). Profitability is defined as one of the company's abilities to generate a profit as well as one of the indicators of measuring the rate of return on investment that has been made (Sukamulja, 2019). Thus, it can be concluded if the company has a high level of profitability allows the rate of return on investment is also high. And conversely, if the level of profitability is low then it can be concluded that the profit obtained is also low.

Capital structure

According to (Cahyani, 2017) structure capital is measured by the Debt to. ratio scale Equity Ratio (DER). This ratio shows the composition of total debt to total equity using the optimal capital structure that able to generate the most cost of capital lowest then it will maximize company value (Septiani & Suaryana,2018).

Profitability

Profitability is the company's ability to earn profit in relation to sales, total assets, and own capital (Sartono, 2012:122). In this study, the profitability ratio is proxied on return on assets (ROA). This ratio is for measure the rate of return on investment that has been made by the company by use all its assets. The greater the profitability, the better, because it shows the ability to generate profits from assets owned company. This is supported by research conducted by Watung, et al., (2016), have found that profitability has a positive effect on capital structure. The research that done by (Dewiningrat, et al., 2018) found that profitability has a negative significant effect on the capital structure.

The profitability in the company is higher so that illustrates that the company have a lot of internal funds. That way 8 companies can use internal funds abundant than using debt to support operational activities better. The company that owns high profitability window usually use debt in small amounts. So, it can be explained that the high profitability level, will describe debt is lower (Ariani and Wiagustini, 2017).

Liquidity

Kasmir (2010) states that the liquidity ratio is a ratio that describes the company's ability to meet short-term debt obligations. In this study, the liquidity ratio will be proxied by the Current ratio (CR). Current ratio according to Kasmir (2014) states that the current ratio is a ratio to measure the company's ability to pay short-term obligations or debt which are immediately due when they are billed in their entirety. Companies with current a high ratio indicates a large amount of current assets compared to current debt.

Mentioned that the liquidity ratio is a ratio that describes company's ability to meet short-term debt obligations with its current assets. Level liquidity can be measured by using the Current Ratio (Dewi, Suci, & Mahardika, 2019).

Company size

Determination of the size of the company can be determined based on total sales, total assets, average sales rate, and total average assets (Seftianne, 2011). Company sizes describe the size of company where a big company it will be easier to get borrowing from outside compared to small company. Large size companies tend to use the loan amount quite large compared to small companies (Fahmi L. Z., 2017).

Relationship between profitability and capital structure

When viewed from the tradeoffs and pecking order theories, companies that have the ability to generate high profits will increase the composition of the company's internal funds accordingly. Not only that, if analyzed further, profitability will also attract investors and creditors in providing credit and investment. The tradeoff theory of a company that has a high level of profitability is likely to increase its debt ratio (Stewart, 1984). The results of research from Chandra (2017), Margaretha & Zai (2013), Deviani & Sudjarni (2018), Dewiningrat & Mustanda (2018), Prastika & Candradewi (2019) showed profitability affects capital structure. Thus, the researchers made the first hypothesis as follows:

H1: Profitability has positive effects on capital structure

Relationship between liquidity and capital structure

Liquidity is defined as a company's ability to pay off its short-term liabilities in a timely manner (Irham, 2017). Yudhiarti et al., (2016) revealed that companies with high liquidity levels will be easier to obtain funding. The statement is supported by Ambarsari & Hermanto (2017) where liquidity ratios can be used to analyze credit. When viewed from the pecking order theory, a company has higher liquidity, they can afford to pay its short-term obligations with internal financing. This theory also reveals if the company's high liquidity level tends to reduce the source of financing derived from
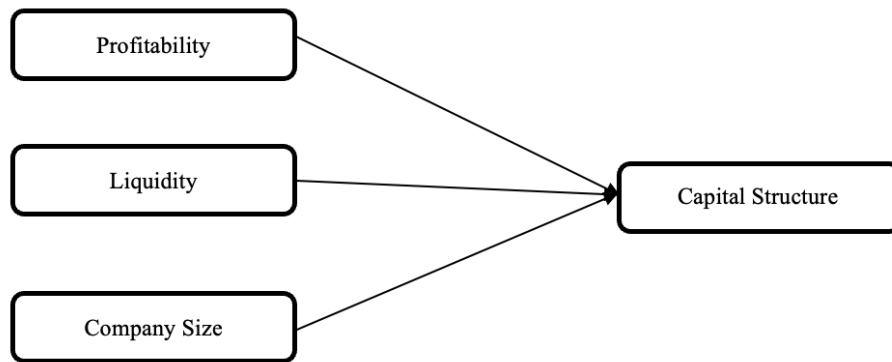
Source: Dewiningrat & Mustanda (2018), Ambarsari & Hermanto (2017).

Figure 2.
Theoretical framework

debt (Deviani & Sudjarni, 2018). The results of research conducted by Deviani & Sudjarni (2018), Anggun et al., (2015), Ambarsari & Hermanto (2017), showed that liquidity affects the capital structure. The hypothesis of this study is:

H2: Liquidity has positive effects on capital structure

Relationship between size of the company and capital structure

The size of the company or commonly referred to as size is regulated in Law No. 20 (2008). This law describes the category of company size as seen from the total sales and assets of the company. Total sales identify the company's ability to sell its products to gain profitability, namely the return on the company's operating activities. The size of the company will also affect the level of confidence of investors and creditors in investing capital and debt that impacts the financial strength of the company (Zulaecha, 2017). Therefore, the greater the total assets and sales revenue, the larger the company size category (Ambarsari & Hermanto, 2017). Judging from the theory of pecking orders and tradeoffs if the company has a lot of total assets, it will facilitate in the acquisition of loans in the form of debt. Meanwhile, if the company obtains total revenue on sales, identifying the profit obtained will be greater which will have an impact on the level of internal financing of the company. Research conducted by Margaretha & Zai (2013), Fahmi (2017), Megarsari (2020), shows the size of the company has an influence on the structure

of capital. Therefore, researchers make temporary allegations, namely:

H3: Size of the company has positive effects on capital structure

METHODS

This research was conducted on mining sector companies on the grounds that growth growth has decreased in 2020. In addition, in the manufacturing sector requires many sources of financing that come from external companies. As outlined in the introduction, this sector also has tangible assets large enough to support the company's operating activities. As a research object where the data used in the form of secondary data obtained from the Indonesia Stock Exchange (2020) for the following reasons: 1) The Indonesia Stock Exchange (IDX) is the only stock exchange in Indonesia that trades the most complete securities; 2) The data available on the IDX is complete and easily obtained through its official website; 3) The data in the IDX is accurate and accountable.

Measurements

Capital structure

Capital Structure selected for the dependent variable. Structure capital is measured by DER. Researcher using the DER calculation for calculate the size of the comparison between the amount of capital provided.by creditor with the owner of the company. It

means to find out every rupiah of own capital can be used as collateral for debt

Debt Equity ratio = $\dfrac{Total\ Loan}{Total\ Asset}$

Profitability

Profitability (ROA). according to Harahap's opinion (2010:304) ratio.profitability describes a company's ability to earn a profit for the period, through all available capabilities and resources owned by the company. As for the calculation profitability can be proxied:

ROA = $\dfrac{Net\ income}{Total\ Assets}$ X 100%

Liquidity

The liquidity ratio used is the current ratio in which a company can pay off its short-term liabilities with the current asset management it owns. If the company has a high current ratio value indicates that the company is increasingly liquid and has a low credit risk where the company has a good ability to pay off its short-term obligations. However, if it is too high it is also not good because many current assets are idle.

Current ratio = $\dfrac{Current\ assets}{Current\ Debt}$ X 100%

Company size (size)

This is a big reflection of the smallness of the company that appears in the total assets of the company on the balance sheet every year of the current period. The size used is the natural logarithm of the total asset. (Ayu Melyani, Suci, & Cipta, 2019) to get the size value high company, company need add assets by get a loan to buy new assets. Company Size can be measured using the formula as

Company size: Ln Total Asset

Population and sample

Population is a generalization area consisting of objects or subjects that have certain qualities and characteristics that are applied by researchers to be studied and will be drawn conclusions. In this study the population is mining companies registered with the IDX as many as 50 companies. While the sample is part of the population (Sugiyono, 2017). The sample in this study amounted to 30 companies.

Data collection techniques

The techniques in this study used non-probability sampling techniques with purposive sampling. Purposive sampling is defined as a technique of sampling data sources with consideration based on certain criteria. Sample withdrawal criteria used in the study are: 1) Mining companies that consistently or consecutively list their shares on the Indonesia Stock Exchange for the period 2018-2020; 2) Companies that could generate consecutive profits in 2018-2020; 3) Mining companies that have complete data related to research variables, namely DAR, ROA, current ratio, and Ln (assets); 4) Financial statements are expressed in Dollars. This research sample is a manufacturing company registered with the

Table 1.
Multicollinearity test

		Coefficients[a]						
	Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**	**Collinearity Statistics**	
		B	**Std. Error**	**Beta**			**Tolerance**	**VIF**
1	(Constant)	-,200	1,324		-,151	,881		
	Profitability	1,479	2,657	,051	,557	,581	,287	3,481
	Liquidity	-,120	,081	-,086	-1,477	,147	,725	1,379
	Company Size	,026	,065	,040	,409	,684	,251	3,980

Dependent Variable: Capital Structure
Source: Data processed by authors using SPSS 23 (2021)

IDX that meets the sampling criteria of as many as 30 companies.

Data analysis

In this study the data was tested using multiple linear regressions. Multiple linear regression is a statistical tool that serves to determine the effect of two or more independent variables on a dependent variable (Ghozali, 2016). However, before we analyse using multiple linear regression, classical assumptions test such as, normality tests, autocorrelation tests, multicollinearity tests, and heteroskedasticity tests, is conducted. However, we only show multicollinearity tests since violating other assumption can be overcome using weighted least square. Furthermore, to ensure there is simultaneous or partial influence, the t test and f test will be carried out. The multiple linear regression equations are as follows:

$$Y = a + b_1X_1 + b_2X_2 + b_2X_3 + e$$

Description:
Y = Capital structure
a = Constant
$b_1. b_2. b_3$ = Regression coefficient
X_1 = Profitability
X_2 = Liquidity
X_3 = Company Size
e = *Standard error*

RESULTS AND DISCUSSIONS

Classical assumptions

The multicollinearity test aims to test regression models of research whether there is a relationship or correlation between

dependent variables by looking at the value of variance inflation factor (VIF). The result of the VIF calculation is less than 10. Table 1 of the multicollinearity test shows no variable whose VIF value is above 10, so it can be concluded that there is no multicollinearity.

However, our model suffers from autocorrelation and heteroscedasticity. Thus, to overcome this problem we applied Weighted Least Square (WLS). This method is employed by squaring independent variables that contain symptoms of heteroscedastic, then all variables are divided by the variables that are squared.

Hypothesis testing

The hypothesis test is conducted to determine the partial or simultaneous influence on the coefficient of determination, the f test and the t test described as follows:

t-test

The t test aims to determine the effect of each independent variable on the dependent variable. The t test in this study was conducted separately using one test after another of each variable independent of the dependent variable. This study refers to the significance value level of a = 0.05. Hypothesis accepted when sig value. < 0.05 and vice versa.

In Table 2, the t-test shows that the H1 profitability affects the capital structure with a significance value of $0.000 < 0.05$ and $0.040 < 0.05$. So that H_2 and H_3 are accepted meaning liquidity and company size affects the capital structure. While the value of significance of liquidity and company size of

Table 2.
t-test

Model	Coefficients^a				
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Profitability	-4,278	4,106	-,149	-1,042	,303
Liquidity	-,408	,193	-,291	-2,109	,040
Company Size	-,087	,094	-,133	-,929	,357

a. Dependent Variable: Capital Structure
Source: SPSS 23, Processed (2021).

the company of 0.303 > 0.05 and 0.357 > 0.05.

F-test

To see the significance of the F test result, the sig value. must be < 0.05 and the value f calculate must be > f table. Looking at the results of the test F (Table 3) can be concluded sig value. 0.000 < 0.05, with a calculated f count (85,7747) > f table (2,578) so that the variables of profitability, liquidity, and size of the company affect the capital structure and Research is worth doing.

Relationship between profitability and capital structure

The results showed profitability had no effect on the capital structure. This means that with a high level of profitability the company will tend to use sources of financing from retained earnings rather than using debt. The statement is in line with the pecking order theory that the ROA rate will reflect the rate of return or return. In this study the level of ROA in the mining sector was very low where from the entire sample nothing was close to 1 (one). Therefore, it can be concluded that ROA has no effect on the capital structure in the sector of manufacturing companies listed on the IDX. The results of this study were supported by As'ari (2017) and Andika & Sedana (2019).

Relationship between liquidity and capital structure

The results showed liquidity affects the capital structure. Liquidity is measured using a current ratio where the higher the current ratio value, the less likely the company will use debt. Judging from the theory of the pecking order of a company that has a high current ratio value, it means that the company is able to pay its short-term obligations using its current assets. Therefore, the capital structure is affected by liquidity. The results of this study are supported by Anggun et al., (2015), Ambarsari & Hermanto (2017), Deviani & Sudjarni (2018).

Relationship between size of the company and the capital structure

From the results of hypothesis testing, it can be explained that the size of the company will not affect the decision of creditors in providing credit to mining sector companies. It can also be interpreted that the increase or decrease in the total assets of the company will not have an impact on the interest of investors or creditors. This is in line with isti'adah statement (2015) where investors or creditors will continue to put forward the projected value of the company reflected in the stock price. From this research also supports data released by IDX in 2020 regarding the declining business growth of the manufacturing sector.

CONCLUSION

Research on the structure of capital has been done by many researchers before. However, over time there is a gap phenomenon and inconsistencies in research results, it is necessary to look again at the variables that affect the structure of capital. This research outlines and defines the factors that allegedly affect the capital structure consisting of profitability, liquidity, and corporate size in manufacturing sector companies listed on the IDX for the period 2018-2020.

Table 3.
F-test

F-test ANOVA[a]

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	74,413	4	18,603	85,774	,000[b]
	Residual	9,217	45	,205		
	Total	83,630	49			

a. Dependent Variable: Capital Structure

b. Predictors: (Constant), Profitability, Liquidity, Company Size

Source: Data processed by the author using SPSS 23 (2021).

The results showed profitability as well as size had no influence on the structure of capital. It means that the addition of the size of the company and the increase in profits will not affect the composition of the existing capital structure in mining sector companies. Companies that have a level of liquidity also identify a good ability of the company in paying off its current obligations using the company's current assets.

Researchers are aware of many limitations that exist, where the research sample used has a performance setback so that the data obtained to prove the hypothesis is less targeted. In addition, the sample and study period are still small where only use 30 companies and use the last 3 years. The researcher's advice for the next study is if you want to do research try the population that will be used as a sample of research has good business growth performance. Thus, the data obtained for hypothesis testing will be better as well. Furthermore, to accumulate data researchers suggest to add a period of research time, if the study sample is few relatively

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