

Effect of Liquidity, Profitability, and Sales Growth on Capital Structure

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Abstract - *This research was conducted to examine the effect of liquidity, profitability and sales growth on capital structure. This research was conducted at manufacturing companies listed on the Indonesia Stock Exchange. The technique of determining the sample using purposive sampling method. Selection of samples from 165 manufacturing companies listed on the Indonesia Stock Exchange in 2016-2018 resulted in 33 companies being accepted. Data analysis was performed using Microsoft Excel 2013 and hypothesis testing in this research used Panel Data Regression Analysis with the EViews 9 program and a significance level of 5%. The results of the test were obtained (1) the liquidity stated by Current Ratio has no significant effect on the Capital Structure. (2) profitability stated by Return On Equity has a significant positive effect on Capital Structure, (3) sales growth stated by Sales Growth has no significant positive effect on Capital Structure.*

Keywords: *liquidity; profitability; sales growth; capital structure*

INTRODUCTION

The development of companies in an effort to anticipate increasingly fierce competition in the global market as it is now will always be done by both large and small companies. The effort is a separate problem for the company, because it involves the fulfilment of the funds needed. Large and small companies that are in fierce competition include manufacturing companies. A manufacturing company is a company with a large scale of production or has a large trading volume and requires large capital or funds to develop its products, it will affect the funding resource of a company operations.

Capital structure is a balance between the uses of own capital with the use of debt and has implication for building the Capital Structure (Harris & Raviv, 1991; Ross et al., 2009; Nusraningrum & Suwesti, 2018). Which means how much equity and how much debt will be used, so that it can produce an optimal capital structure.

The relationship between income statement and balance sheet indicates the readiness of company short-term obligations (Nusraningrum & Suwesti, 2018), so that liquidity is related to the company's ability to meet its financial obligations which is reflected in the size of its current assets. The current assets and cash show the liquidity ratio that reflect current ratio without decreasing the value of assets (Birgham & Houston, 2012).

The profitability is measured by the amount of profit which reflect the operating of a company and the effectiveness of corporate management (Nusraningrum & Suwesti, 2018). The level of profit a large company provides the potential increase in the amount of internal company funds, thus encouraging companies to use it to meet the financing needs of investment. A new business efficiency will be seen from corporation between the profits obtained and the capital.

Sales growth is the difference between the numbers of sales in this period with the previous period compared to sales of the previous period. High or stable sales growth can have a positive impact on company profits so that it becomes a consideration of company management in determining capital structure. However, the previous research of manufacturing industry competition in Asia shows that the profitability ratio and the sales growth had no significant difference each other (Sam & Hoshino, 2013).

LITERATURE REVIEW

Capital Structure

Capital structure is related to the long-term expenditure of a company as measured by the comparison of long-term debt with own capital and the balance of the amount of short-term debt that is permanent, long-term debt of preferred shares and ordinary shares (I Made Sudana, 2011; Sartoni, 2010). The capital structure is a picture of the form of the company's financial proportions that is owned capital sourced from long-term debt and shareholders' equity which is the source of financing for a company (Fahmi, 2014). Thus, the capital structure is a proportion in meeting the needs of corporate spending, where the funds obtained using a combination or source guide that comes from long-term funds consisting of two main sources, they are those from within and outside the company that will be influenced by several aspects.

Liquidity

Liquidity is the company's ability to meet its short-term obligations smoothly and on time, the source of funding to meet these short-term obligations is derived from current assets that are easy to make into cash, for example cash, receivables, inventory and others. It is a measure of company performance in the company's ability to meet financial obligations that must be paid immediately that are due up to 1 year. To fulfil these obligations, management must prepare assets that are truly ready to become cash in a timely and appropriate amount (Sitanggang, 2014).

Profitability

Profitability is the company's ability to make a profit, to obtain the profit the company must increase revenue and reduce the burden on income. Profit of a company can be used to measure several things; one example is to measure the effectiveness of management of a company that will be the influence of investor interest. And it is a measure to assess the company's ability to find a profit, besides profitability is useful to provide a measure of the effectiveness of a company's management. This is indicated by the profit generated from sales and investment income (Kasmir, 2013).

Sales growth

Growth is a company's ability to maintain its economic position in the midst of economic growth and its business sector (Kasmir, 2013). The growth ratio is basically to find out how much growth in achievement is achieved by the company in a certain period of time and a measure of the success of a company in carrying out its activities (Sitanggang, 2014). Thus, sales growth is the company's ability to maintain its economic position in the middle of its growth which must be achieved at a certain time in order to succeed in making a sale, if the sale is relatively high then it is possible to spend using a larger debt.

METHODS

This research is survey of manufacturing company listed in Indonesia Stock Exchange 2016-2018.

a. Dependent Variable (Y): Capital structure

Capital structure is a balance or comparison between long-term debt with own capital to achieve optimal capital structure. Capital structure can be measured by the formula:

$$DER = \frac{Debt}{Equity}$$

b. Independent variable (X)

1) Liquidity (X₁)

Liquidity is the company's ability to meet its short-term obligations. Another understanding is the ability of a person or company to fulfil obligations or debts that must be paid immediately with their current assets. Liquidity can be measured by the formula:

$$CR = \frac{Current\ Assets}{Current\ Debt}$$

2) Profitability (X₂):

Profitability is the ability of a company to generate profits for a certain period at a certain level of sales, assets, and share capital. Profitability can be measured by the formula:

$$ROE = \frac{\text{Earning after tax}}{\text{Total Equity}}$$

3) Sales Growth (X3):

Sales growth is a reflection of the success of past investment periods and can be used as a prediction of future growth. Sales growth can be measured by the formula:

$$\text{Sales Growth} = \frac{\text{This year sales} - \text{Last year sales}}{\text{This year sales}}$$

Population and Sample

Population is all areas of generalization consisting of objects and subjects that have certain qualities and characteristics to be studied and then conclusions drawn. The population in this research were companies listed on the Indonesia Stock Exchange in the 2016-2018 observation period. The sample used in this research was manufacturing companies listed on the Indonesia Stock Exchange in the observation period of 2016 – 2018.

Panel Data Regression Analysis

Panel data regression analysis technique was used to determine the effect of liquidity, profitability, and sales growth on capital structure, this research used panel data regression analysis, because the data used was a combination of time series data and cross sections in the 2016 to 2018 period. The general form of the panel data regression equation was as follows:

$$Y_{it} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \mu_{it}$$

Where:

- Y_{it} = Capital structure measured by Debt to Equity Ratio (DER)
- X₁ = Liquidity measured by Current Ratio (CR)
- X₂ = Profitability is measured by Return on Equity (ROE)
- X₃ = Growth is measured by Sales Growth (SG)
- β = constant
- i = Name of Manufacturing Company
- t = Period of time
- μ = Error Term

Panel Data Regression Analysis Method

Panel data or pooled data is a combination of time series data and cross sections. Time series is data that has a time series of more than one year on an object or data collected from time to time against one object. While the cross section is data that has many objects in the same year or data collected at a time against many objects. There are three methods that can be used to work with panel data, they are:

- 1) Pooled least square (PLS), which is estimating panel data with the Ordinary Least Square (OLS) model.

The panel data regression model is as follows:

$$t = \beta_1 + \beta_2 + \beta_3 X_{3it} + \dots + \beta_n X_{mit} + \mu$$

- 2) Fixed effect (FE), which is adding a dummy model to the panel data. The panel data regression model is as follows:

$$Y_t = a_1 + a_2 D_2 + \dots + a_n D_n + \beta_n X_{mit} + \mu_t$$

- 3) Random effect (RE), which takes into account errors from panel data with the least square method. Panel data regression models are:

$$Y_t = \beta_1 + \beta_1 X_{2t} + \beta_3 X_{2t} + \beta_3 X_{3t} + \dots + \beta_n X_{mit} + t + \mu_t$$

Of the three panel data method approaches, two approaches that are often used to estimate the regression model with panel data are the FE and RE approaches. F test (Restricted Test) is used to determine the method between PLS and FEM approaches, while the Hausman test is used to determine between REM and FEM approaches.

Hypothesis testing

Hypothesis testing used the regression analysis by Eviews 9 of Partial Test and Determination Coefficient Test.

Partial Test

That the t test basically shows how far the influence of one explanatory variable/independent individually in explaining the variation of the dependent variable. In this test decision making is based on a significance level of 5% or 0.05. The formulation of the hypothesis in this test is as follows:

- a. Variable of liquidity has an influence on capital structure
 Ho: $\beta_1 = 0$, liquidity has no effect on capital structure
 Ha: $\beta_1 \neq 0$, liquidity affects the capital structure
- b. Variable of profitability has an influence on capital structure
 Ho: $\beta_2 = 0$, liquidity has no effect on capital structure
 Ha: $\beta_2 \neq 0$, liquidity affects the capital structure
- c. Variable of sales growth has an influence on capital structure
 Ho: $\beta_3 = 0$, growth has no effect on capital structure
 Ha: $\beta_3 \neq 0$, growth affects the capital structure

Determination Coefficient Test

The coefficient of determination test basically measures how far the model's ability to explain the variation of the dependent variable. The coefficient of determination is between zero and one. A small R² value means that the ability of the independent variable in explaining the variation of the dependent variable is very limited. A value close to sat means that the independent variable gives almost all the information needed to predict the variation of the dependent variable. The fundamental drawback of using the coefficient of determination is the bias towards the number of independent variables entered into the model. Each addition of one independent variable, then R² must increase regardless of whether the variable significantly influences the adjusted R² value when evaluating which regression model is best. Unlike R², the adjusted R² value can go up and down if an independent variable is added to the model.

RESULTS AND DISCUSSION

Table 1. Descriptive Statistics Results

	DER	CR	ROE	SG
Mean	1,128601	2,090301	0,126413	0,179563
Maximum	5,442557	7,680668	0,327719	0,858872
Minimum	0,109234	0,741795	0,008447	0,000548
Std. Dev.	0,807682	1,307336	0,078538	0,151028
Observations	99	99	99	99

Sumber: Output E-Views 9.0

Based on table 1, the output of E-Views 9 is descriptive statistics to find out the level of capital structure (DER), liquidity (CR), profitability (ROE), and sales growth (SG). The descriptive statistical interpretations are as follows:

a. Capital Structure Variable (DER)

The average DER of 99 manufacturing companies' data for 3 years is 1.128601. It shows how big the ratio of the company's debt level with its own capital in manufacturing companies listed on the IDX. The highest DER is 5.4422557 for the lowest DER of 0.109234 with a standard deviation of 0.807682 means that the spread of debt to equity ratio (DER) data is below the average of the gap between the maximum value and the minimum value. So, the smaller the standard deviation the sample data is more homogeneous or better than the average.

b. Liquidity Variable (CR)

The average CR of 99 manufacturing company data for 3 years is 2.090301. It shows the company's ability to pay its short-term obligations with its current assets in manufacturing

companies listed on the IDX. The highest CR is 7.680668 for the lowest CR is 0.741795 with a standard deviation of 1.307336 means that the spread of Current Ratio (CR) data is below the average of the gap between the maximum value and the minimum value. So, that the smaller the standard deviation the sample data is more homogeneous or equal to the average.

c. Profitability Variable (ROE)

The average ROE of 99 manufacturing companies' data for 3 years is 0.126413. It shows the company's ability to generate profits after tax using its own capital in manufacturing companies listed on the IDX. The highest ROE is 0.327719 for the lowest ROE of 0.008447 with a standard deviation of 0.078538 means that the spread of Return on Equity (ROE) data is below the average of the gap between the maximum value and the minimum value. So, that the smaller the standard deviation the sample data is more homogeneous or equal to the average.

d. The average SG of 99 manufacturing companies' data for 3 years is 0.179563. It shows that the company has growth in sales of various industry companies listed on the IDX. The highest SG is 0.858872 for the lowest SG which is equal to 0.000548 with a standard deviation of 0.151028, it means that the spread of Sales Growth (SG) data is below the average of the gap between the maximum value and the minimum value. So, the smaller the standard deviation, the sample data will be more homogeneous or equal to the average.

Table 2. F Restricted Test Results

Redundant Fixed Effects Tests
 Equation: Untitled
 Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	5.807300	(32,63)	0.0000
Cross-section Chi-square	135.991316	32	0.0000

Source: Output E-views 9.0

Based on table 2 above, the probability value of Cross Section Chi-Square for this research was $0.0000 < 0.05$. Then H_0 was rejected and H_1 was accepted. So, that the best model used in the research between Pooled Least Square and Fixed Effect Model was the Fixed Effect Model.

Table 3. Hausman Test Results

Correlated Random Effects - Hausman Test
 Equation: Untitled
 Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	13.991335	3	0.0029

Source: Output E-views 9.0

Based on table 3 above, the Cross Section Random probability value for this research was $0.0029 < 0.05$. Then H_0 was rejected and H_1 was accepted. So, the best model used in the research between the Fixed Effect Model and the Random Effect Model was the Fixed Effect Model.

Panel Data Regression Mode Used

Table 4. Fixed Effect Model

Dependent Variable: DER
 Method: Panel Least Squares
 Date: 06/17/19 Time: 11:43
 Sample: 2016 2018
 Periods included: 3
 Cross-sections included: 33
 Total panel (balanced) observations: 99

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.751289	0.213850	3.513167	0.0008
CR	-0.075215	0.067290	-1.117769	0.2679
ROE	2.863104	1.062568	2.694514	0.0090
SG	0.961225	0.509780	1.885570	0.0640

Source: Output E-views 9.0

Based on table 4 above the test results on the panel data regression model can then be written panel data equation as follows:

$$DER = 0.751289 - 0.075215 (CR) + 2.863104 (ROE) + 0.961225 (SG)$$

Based on the regression equation above, it can be described that:

- Based on the results of the regression test; it was known that the constant value was 0.751289. it can be concluded that if the value of the variable liquidity (CR), profitability (ROE) and sales growth (SG) was considered constant or equal to 0 (zero), then the value of the Capital Structure (DER) was 0.751289.
- The value of the liquidity regression coefficient measured by the Current Ratio (CR) of 0.075215 stated that the value of CR has increased by 1 (assuming that the coefficient values of other variables were fixed or unchanged), then the Capital Structure (DER) will decrease by -0.075215. This showed the coefficient was negative, meaning that any decrease in CR will increase the DER of the manufacturing company.
- The value of the profitability regression coefficient measured by Return on Equity (ROE) of 2.863104, stated that the value of ROE has increased by 1 (assuming that the value of the other variable coefficients was fixed or unchanged), then the Capital Structure (DER) will increase by 2.863104 this showed the coefficient was positive, meaning that the more the company makes a profit or profit it will use a greater debt to manufacturing companies.
- The regression coefficient of sales growth measured by Sales Growth (SG) of 0.961225, stated that the value of SG has increased by 1 (assuming that the coefficient values of other variables were fixed or unchanged), then the capital structure (DER) will increase by 0.961225. This showed that the coefficient was positive, meaning that every time sales growth rises, it will require a greater debt to manufacturing companies.

Table 5. Determination Coefficient Test (R²)

R-squared	0.842179	Mean dependent var	1.128601
Adjusted R-squared	0.754501	S.D. dependent var	0.807682
S.E. of regression	0.400190	Akaike info criterion	1.281531
Sum squared resid	10.08956	Schwarz criterion	2.225211
Log likelihood	-27.43579	Hannan-Quinn criter.	1.663345
F-statistic	9.605321	Durbin-Watson stat	2.109765
Prob(F-statistic)	0.000000		

Source: Output E-views 9.0

Based on table 5, the coefficient of determination used was adjusted R square of 0.754501. This showed that the independent variables consisting of liquidity, profitability and sales growth explain or

explain 75.4% of the total variance of the dependent variable, it was the capital structure. And the remaining 24.55% (100% - 75.45%) was explained by other variables not used in this research model.

T Test (Partial Testing)

Hypothesis testing using t test aimed to determine the effect of the independent variable; liquidity (X_1), profitability (X_2) and sales growth (X_3) with the dependent variable; capital structure (Y). Hypothesis decision making in the t test can be measured by comparing significant values with critical values.

Table 5. Test Results of t

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.751289	0.213850	3.513167	0.0008
CR	-0.075215	0.067290	-1.117769	0.2679
ROE	2.863104	1.062568	2.694514	0.0090
SG	0.961225	0.509780	1.885570	0.0640

Source: Output E-views 9.0

Based on the results of statistical data using the E-views 9 program, it can be seen the effect of the independent variables on the dependent variable partially was as follows:

a. Effect of liquidity (CR) on capital structure (DER)

Based on the results of the analysis in Table 5 above, the liquidity results measured by the current ratio (CR) shows a significance value greater than α , it was $0.2679 > 0.05$ with a coefficient of -0.075215 and a calculated value of t smaller than t table, it was $-1.117769 < 1.98525$ with $df = 99-4 = 95$ and a significance level of 5%, then H_0 was accepted and H_a was rejected. Thus, the direction can be interpreted that liquidity (CR) did not affect the capital structure (DER)

b. Effect of profitability (ROE) on capital structure (DER)

Based on the analysis in Table 5 above, the results of profitability measured by Return on Equity (ROE) shows that the significance value was smaller than α , that was $0.0090 < 0.05$ with a coefficient of 2.833104 and the t value was greater than t table that was $2.694514 > 1.98525$ with $df = 99-4 = 95$ and a significance level of 5%, then H_0 was rejected and H_a was accepted. Thus, the direction can be interpreted that profitability (ROE) affects the capital structure (DER)

c. Effect of sales growth (SG) on capital structure (DER)

Based on the results of the analysis in Table 5 above, obtained sales growth results measured by sales growth (SG) showed a significance value greater than α , it was $0.0640 > 0.05$ with a coefficient of 0.961225 and a calculated value t greater than t table, it was $1.885570 < 1.98525$ with $df = 99-4 = 95$ and a significance level of 5%, then H_0 was accepted and H_a was rejected. Thus, the direction can be interpreted that SG (sales growth) did not affect the capital structure (DER).

RESULT and DISCUSSION

Effect of Liquidity on Capital Structure

It was found that liquidity measured by the current ratio (CR) did not significantly influence the capital structure (DER) with a probability value of $0.2679 > 0.05$, then the first hypothesis (H_1) of this research was rejected. Companies with high liquidity ratios tend to reduce or even not use debt because they had large internal funds, so they prefer to maximize the use of these funds. A profitable company will produce cash from within the company, thereby reducing the need for funding from outside the company (Sudana, 2011). If the company can generate cash or other assets the company will tend to use the current assets to be used as an alternative fund. Pecking Order Theory can be understood as a condition where companies use more internal funds as an alternative to funding new investments. This was certainly related to creditors, which confirmed that liquidity was related to creditors, meaning that the creditor's trust in the company is higher (Sutrisno, 2013). However, large cash in a company is not good for the company because the possibility of growth in the company is relatively small. If the company was only hoarding cash and not used for asset activities, the company will not grow. This was due to the large number of current assets available but not used to expand the business. Thus, the existence of a high level of liquidity will cause funds from internal sources to be higher which will reduce the level of debt where every time there is internal funds will not guarantee getting a high debt value.

But behind that if current assets are not offset by the amount of current debt to be paid, it will cause the level of operational performance not to work properly. Another reason was that liquidity was not part of the capital structure. Because liquidity only came from current assets and current debt, while those that affect capital structure are fixed assets and long-term debt (Dewiningrat et al., 2018; Dahlena, 2017; Lessy, 2016).

Effect of profitability on capital structure

It was found that liquidity measured by return on equity (ROE) had a significant positive effect on capital structure (DER) with a probability value of $0.0090 < 0.05$, then the first hypothesis (H_2) of this research was accepted. Based on the results of this research, it can be found that profitability (ROE) affected the capital structure (DER). In the trade off theory, the exchange of tax savings benefits with the potential for bankruptcy was done, if the company expected a large profit as a result of tax savings, it will be prepared to accept the risk of potential bankruptcy costs. Thus, management who has the confidence to obtain large profits in the future, management was likely to finance the company with debt. The excess profits will be enjoyed by old shareholders who will increase their welfare. Companies with high profitability levels will certainly try to reduce their taxes by increasing their debt ratios, so that the additional debt will reduce taxes, so in increasing high profits must also increase the level of debt in order to reduce taxes. In addition to reducing taxes, debt was also useful as an operational fund or as a source of funds that was useful to finance company expansion or other financing to grow the company to grow (Wicaksono, 2016; Dahlena, 2015; Mikrawardana et al., 2014).

The effect of sales growth on capital structure

It was found that liquidity measured by sales growth (SG) had a significant positive effect on capital structure (DER) with a probability value of $0.0640 > 0.05$, then the first hypothesis (H_3) of this research was rejected. Based on the results of this research, it can be found that sales growth (SG) had no effect on capital structure (DER). Sales growth indicated productivity and operational capacity of the company and reflected the level of competitiveness of the company in the industry. Sales with a relatively stable level were considered safer to use loans in greater numbers because they were judged to have the ability to bear a fixed burden on loans (loan interest) that was higher than fluctuating sales that were still unpredictable. The use of higher loan rates was also motivated by the need for greater funding for company expansion financing. If a company with a relatively high sales growth rate was possible to spend using a larger debt compared to a company with low growth, because the profits derived from the increase in sales are expected to still cover the cost of debt interest (Sudana, 2011). It can be said that if sales growth increased it will use a larger debt but in reality, sales growth cannot raise its capital structure because when companies try to increase sales growth, it will require additional capital to meet their needs. But when the company's sales increased, it will minimize the costs incurred, it was minimizing capital from long-term debt. In addition to reducing the potential for bankruptcy of large debts, sales growth was also not a final result because sales can still be reduced by operating cost. It can be concluded that if sales growth has increased or decreased it will not affect the rise or fall of capital structure (Puspita, 2016; Rizky, 2016).

CONCLUSION

The manufacturing company listed on the Indonesia Stock Exchange 2016 until 2018 which were used as sampling of this research showed that the liquidity (Current Ratio) did not affect the capital structure, the profitability (Return On Equity) affected the capital structure, and the Sales Growth (SG) did not affect the capital structure. This research implies that huge cash in a company will not grow the company, since, the liquidity needs to develop the business. The high profitability will reduce the company taxes by increasing the debt ratios. The sales growth will minimize the costs incurred and will minimize capital from long-term debt.

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