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# The Effect Of Capital Structure On Firm Performance Of Manufacturing Companies In ASEAN 5 Country

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**ABSTRACT**
The purpose of this research was to find the effects of capital structure of manufacturing companies towards firm performance in Asean 5 Country. The research samples are manufacturing companies listed on stock exchanges in Indonesia, Malaysia, Philippines, Singapore, and Thailand. The data, as samples, is obtained from the company's financial statements from 2014 to 2018. This study uses panel data, which then analyzed by linear regression model analysis. Capital structure that used in this research use 3 variables which are total debt to total asset (TDTA), total debt to total equity (TDTE), and long term debt to total equity (LTDTE) and controlled by asset tangibility, size, and growth. The research found that TDTA affect return on asset negatively significant, TDTA and TDTE affect return on equity negatively significant, and TDTE affect Tobin's Q not significantly negative.

***Keywords-*** *Capital Structure, Manufacture, Firm Performance, ASEAN 5.*

## 1. INTRODUCTION

(McKinsey, 2018) research shows that Industry 4.0 is expected to generate annual economic profits of US
$ 1.2 trillion to US $ 3.7 trillion. Of this amount, ASEAN countries (Association of countries in Southeast Asia) have the potential to reap productivity increases of US
$ 216 billion to US $ 627 billion per year by 2025. In addition to the potential growth of the manufacturing sector, the economic growth of countries in the Southeast Asia is one of the highest economic growth in the world.
With those conditions, manufacturing companies must compete to increase profits in order to seize market and maintain the market that they have. To support these activities, a significant source of funding is needed. The company's funding itself has two sources, internal and external. Internal funding is corporate funding from company cash that can be in the form of retained earnings or equity participation from shareholders, often referred to as equity. While external funding comes from long term and short term debt that can come from various parties, it can be from banks, suppliers, and other creditors.
Company's policy regarding the mixed proportion of debt and equity is what is called as the capital structure. Usage of corporate capital from either debt or equity has their respective advantages and disadvantages. So to determine a good composition needs to be analysed properly. Debt from banks is one of the easiest ways to obtain capital for a company, while the most difficult for company to obtain is issuing new equity. This is consistent with (Myers & Majluf, 1984) which states that financing follows a hierarchy: internal financing is utilized first, then use debt, and issued new equity when no more debt can be used.
In this research, the writer will focus on analysing the effect of proportion of capital structure that used by manufacturing companies towards their firm performance. The analysis used a panel data which is some combination of data from various object in certain period of time during research, and then performed a regression analysis to find the result. The result of this research will help the management determine the proportion of capital structure in order to maximize company performance in the future.

## 2. LITERATURE REVIEW

### Capital Structures

Optimal management of company's resources and assets require proper capital structure decision making, financial managers must pay attention to the proportion of financing that can benefit all company stakeholders.
(Modigliani & Miller, 1958) issued a theory that is now known as the M&M theory which is a modern thought about capital structure. M&M states that capital costs will increase along with increase in debt, but the tax savings amount will be greater than the increasing value of the capital costs.
Utilization of financial leverage will have a positive impact if the income is greater than the financial burden incurred, while the negative side is higher obligations that must be borne by the company. If it is unable to meet its obligations, which consist of debt expenses and interest that

 

must be paid the company will experience financial difficulties and can ultimately lead to bankruptcy.

## Trade Off Theory

Trade-off theory show that company have to balance the tax benefits of debt against the financial distress costs of the debt (Myers & Majluf, 1984), which means that this theory compares (trade off) the advantages and disadvantages that will arise from the use of debt, so the need to find an optimal capital structure between those advantages and disadvantages.
Financial difficulties faced by companies can occur in several forms, namely not being able to meet financial obligations until a certain time, until the difficulty of solvency or commonly called bankruptcy is when the company's financial obligations are greater than the wealth owned by the company.

## Agency Theory

Agency Theoretical Framework explains the agency relationship between shareholders and managers who have different interests between the parties, debt alleviates agency problems between shareholders and manager but can also create new institutional problems between debt holders and shareholders. Management is expected to take company policies, especially in the content of agency relationship. Financial policies that benefit company owners are one of the policies that must be taken into consideration. Agency problems will arise if management decisions are detrimental to the company's owners.
This relationship might cause agency conflict (agency conflict) so supervision needs to be done. (Jensen & Meckling, 1976) mention that there are 2 types of agency conflicts, which are: conflicts that happen amid shareholders of the company and managers, and conflicts amid shareholders and debt holders. The first conflict occur when shareholders employ other parties or agents as representatives of their interests. Costs arising from the conflict are referred to as agency costs, whereas conflicts between share holders and debt holders occur when creditors force management to take on projects that have little risk, small returns will incur losses for shareholders who expect large returns.

## Pecking Order Theory

The pecking order theory (Myers & Majluf, 1984) consider three sources of funds available to company, which are retained earnings, debt, and equity. From an outside perspective as an investor, equity has more risk than debt. From a company's perspective, a retained earnings that is internal financing is better source of funds compared to external financing. Company need to issue new debt as source of fund of there is no internal funding available . Equity is only used when the two options can no longer be used. Pecking order theory shows the order of preference for corporate financing choices because of the information asymmetry. Information asymmetry occurs when management has better information than outside investors. Where the information will benefit management and will harm outside investors.

## Firm Performance

Measurement of company performance can be seen in terms of financial and non-financial. In terms of finance, the firm's performance can be seen from its financial statements. The company can be said to have a good performance if it reaches its goal, which is maximizing shareholders wealth. Whereas the non- financial performance is usually seen from the achievement of the utilization of its human resources.
In general, financial performance is more often used to assess whether a company has a good performance or not because it can be seen with numbers, so that the valuation process becomes easier. Measurement of the financial performance showed by the ratios that calculated from financial statements issued by the company. Because the company's main goal is to maximizing the shareholders wealth, the ratio used to measure is the profitability ratio.

## Hypothesis Development

Based on the study of theory and previous research, a conclusion can be drawn on the research problem in the form of an alternative hypothesis in response to this research. The hypothesis are:
Several studies of capital structure theory show that debt capital costs are often cheaper than equity costs, so businesses often use more debt to increase business value. Moreover, (Khan & Ali, 2017) declare that capital structure effect company profitability significantly positive. According to (Vithessonthi & Tongurai, 2015) internationally oriented companies' capital structure have significantly positive effect of on firm performance. Therefore, the research hypotesis is:
Hypothesis 1: Capital structure has positive effect on company performance

# 3. METHODOLOGY

## Data

The population that used this study is all manufacturing companies that listed on stock exchange in the Asean 5 country, which are Indonesia, Malaysia, Philippine, Singapore, and Thailand. While, the sample is the manufacturing companies that have complete financial report from 2014 to 2018. Secondary data that needed

to be processed is taken from the Thomson Reuters data stream. Variables

## Measure of firm performance

There are 3 variables used in this study to show the firm performance, which are ROA, ROE, and Tobin's Q. ROA and ROE are used because they can show the firm performance based on records, which is from financial statements. Whereas Tobin Q is used because it can show the market value of the company compared to the book value of the company, which reflects the investor's assessment of firm performance.

## Measure of capital structure

Capital structure is the composition of the company's funding sources in conducting its business that consists of a combination of equity and debt. In this research the variables used to define the capital structure using 3 variables, which are TDTA, TDTE, LTDTE which is consistent with research conducted by (Kodongo, 2014)

## Measure of control variables

The variable control that used on this research can be seen in table 1 that also show the formula of the variables.
Table 1: Variable Control

| Variables | Formula |
|---|---|
| Tangibility (TAN) | $\frac{\text{Total Fixed Asset}}{\text{Total Asset}}$ |
| Size (SIZE) | Ln Total Asset |
| Sales Growth (GRO) | $\frac{Sales_t - Sales_{t-1}}{Sales_{t-1}}$ |

## Data Analysis

In testing the model, an understanding of regression techniques is needed. The data collection method that will be used in this study is the pooled data method or panel data.
The models used in panel data analysis are:

$$Y_{it} = \alpha + \beta_1 X_{1\,it} + \beta_2 X_{2\,it} + \ldots + \beta_n X_{n\,it} + \varepsilon_{it} \quad (1)$$

$Y_{it}$ : Dependent variable of individual i in year t
$X_{it}$ : Independent variable of individual i in year t
$\alpha$ : Constants
$\beta$ : Variable coefficient
$\varepsilon_{it}$ : error item

In analyzing panel data there are 3 models that can be used, which are ordinary least square (common effect) model, fixed effect model, random effect model. Determination of the use of models in analysing panel data can be done using 3 test, which are Chow test, Haussmann test and the Lagrange multiplier test. The first test ia Chow test that used to decide which model between Common Effect and fixed Effect model is the most suitable for use in panel data analysis. After the results of the chow test come out, the next test used is the Haussmann test, which is used to select the right model to be used between fixed effects or random effects. And the last test, Lagrange multiplier used to decide whether the model used is random effect model or common effect model (OLS)

## Research Model

Based on the description that has been described above, the research model that will used in this research is:

$$FP_{it} = \alpha + \beta_1 CS_{1\,it} + \beta_1 Z_{it} + \beta_n X_{n\,it} + \varepsilon_{it} \quad (2)$$

$FP_{it}$ : Firm performances of company i at year t
$CS_{1\,it}$ : Capital structures of company i at year t
$Z_{it}$ : Control variables of company i at year t

Based on the model above so there will be 3 models in this research since there are 3 dependent variables that are used in this research.

# 4. FINDINGS

## Descriptive Statistic of Data

Summary of the statistics that needed of all variables used in this research can be seen in Table 2. The average total debt to total assets (TDTA) of manufacturing companies in ASEAN 5 is around 22.7% while the total debt to total equity (TDTE) reaches
70.27% which the ratio of long-term debt to total equity (LTDTE) was only around 27.1% for the 2014-2018 period. Those variables have a very wide range, where the TDTA have range between 0.003% until 86.17%; TDTE ranges from 0.003% to 15151.12%; while LTDTE has a range from 0% to 1158.25%.
While in terms of performance, manufacturing companies in ASEAN 5 have very varied performance but are generally have positive performance. In terms of ROA companies recorded 3.34% annually with a fairly wide range between -144.52% to 73.07%. While in terms of ROE, the companies averaged a ROE of 5.41%.
In general, investor also assesses that manufacturing companies in ASEAN 5 are more than the assets they have, where the average Tobin's Q is at 1.59.

Table 2: Descriptive Statistic of Firm Performance and Capital Structure

| | Mean | Median | Min | Max | SD |
|---|---|---|---|---|---|
| ROA | 0.0334 | 0.034 | -1.4452 | 0.7307 | 0.0948 |
| ROE | 0.0541 | 0.0597 | -3.939 | 1.7473 | 0.2203 |
| TOBIN'S Q | 1.5921 | 0.8139 | 0.0007 | 228.5227 | 7.0833 |
| TD/TA | 0.227 | 0.2007 | 0.00003 | 0.8619 | 0.1658 |
| LTD/TE | 0.271 | 0.0616 | 0 | 111.5825 | 2.0823 |
| TD/TE | 0.7027 | 0.3657 | 0.00003 | 151.5112 | 3.0879 |
| TAN | 0.4663 | 0.4583 | 0.0002 | 0.9937 | 0.1947 |
| SIZE | 18.7178 | 18.4991 | 14.8026 | 24.5457 | 1.5938 |
| GRO | 0.1014 | 0.0095 | -0.9925 | 136.7839 | 2.5168 |

## Correlation Analysis

The result of correlation coefficients analysis among variables that used in this research is presented in Table 3. It can be seen that for all independent and control variables none have a significant influence on each other (correlation coefficient more than 0.8), so all variables can be used in concurrent regression without causing multicollinearity effects.

Table 3: Correlation Coefficient

| | ROA | ROE | TOBIN'S Q | TD/TA | LTD/TE | TD/TE | TAN | SIZE | GRO |
|---|---|---|---|---|---|---|---|---|---|
| **ROA** | 1 | | | | | | | | |
| **ROE** | 0.87 | 1 | | | | | | | |
| **TOBIN'S Q** | 0.09 | 0.07 | 1 | | | | | | |
| **TD/TA** | -0.18 | -0.12 | -0.05 | 1 | | | | | |
| **LTD/TE** | -0.05 | -0.19 | -0.01 | 0.17 | 1 | | | | |
| **TD/TE** | -0.07 | -0.21 | -0.01 | 0.27 | 0.74 | 1 | | | |
| **TAN** | -0.1 | -0.09 | -0.04 | 0.19 | 0.06 | 0.03 | 1 | | |
| **SIZE** | 0.18 | 0.15 | -0.03 | 0.31 | 0.08 | 0.07 | 0.22 | 1 | |
| **GRO** | 0.01 | 0.01 | 0 | -0.01 | 0 | 0 | -0.02 | 0 | 1 |

## Model Used In This Research

To choose the model that will be used, it is necessary to test as described in section 3. The results of the test as well as the model to be used in this research can be seen in table 4.

Table 4: Panel Data Model Used

| Dependend Variable | Chou Test | Haussmann Test | Langrage Multiplier | Model Choosen |
|---|---|---|---|---|
| ROA | H0 is not Rejected | H0 is not rejected | | FE Model |
| ROE | H0 is not Rejected | H0 is not rejected | | FE Model |
| Tobin's Q | H0 is not Rejected | H0 is rejected | H0 is not rejected | RE Model |

## Result

The result of the regression analysis can be seen in the Table 5.

Table 5: Regression Analysis

| | Dependent Variable | | |
|---|---|---|---|
| | ROA | ROE | Tobin's Q |
| TD_TA | -0.134*** | -0.1557*** | 0.3773 |
| | (-12.191) | (-6.066) | (0.2629) |
| TD_TE | -0.001 | -0.0115*** | -0.01268 |
| | (-0.400) | (-3.0245) | (-0.1324) |
| LTD_TE | -0.0002 | -0.0036 | 0.0202 |
| | (-0.0793) | (-0.6557) | 0.1438 |
| TAN | -0.054*** | -0.1238*** | 1.0869 |
| | (-6.362) | (-6.206) | 0.8545 |
| SIZE | 0.0167*** | 0.0312*** | -0.4792 |
| | (15.493) | (12.418) | (-1.2581) |
| GRO | 0.0003 | 0.00084 | 0.0066 |
| | (0.4318) | (0.5694) | (0.1918) |
| Observation | 3165 | 3165 | 3165 |
| Adj. R-squared | 0.1033 | 0.09712 | 0.6259 |
| F-test | 61.3413 | 57.36713 | 9.2972 |
| Prob > F | 0.0000 | 0.0000 | 0.0000 |

Note: *** significant at 1%

The results showed that TDTA had a significant negative effect on ROA at a significant level of 1% with a coefficient value of -0.134. It mean that every 1 unit increase in TDTA will decrease ROA by 0.134, TDTA effect on ROE is significantly negative at a significant level of 1% with a coefficient value of -0.1557, it shows that every increase in 1 unit of TDTA and will decrease ROE by 0.1557 units. Whereas TDTA has a positive effect on Tobin's Q but is not significant. TDTE shows that it have negatively singnificant effect on ROE at a significant level of 1% with a coefficient value of - 0.0115. It shows that every 1 unit increase in TDTE and will reduce ROE by 0.0115 units. TDTE also have negative but not significant effect on ROA and Tobin's Q. LTDTE has a negative but not significant effect on ROA and ROE while it have positive not significant effect on Tobin's Q.

While for the control variable, the effect of asset tangibility on ROA and ROE is significantly negative at a significant level of 1% but it have positive but not significant effect on Tobin's Q. Company size positively significant effect on ROA and ROE at a significant level. 1% but has a negative effect on Tobin's Q. And company growth positively effect on all dependent variables but do not have a significant effect on all dependent variables.

## 5. CONCLUSION

This research proves that in general capital structure negatively effect company performance. In this study it can

also be said that the linear test results show that the capital structure variables in this research negatively significant effect ROA and ROE, while capital structure do not have significant effect on Tobin's Q. This study also concluded that sales growth and company size positively effect company performance. While asset tangibility negatively effect company performance but not significant.

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