

The Testing of Empirical Trade Off Theory in Determining Value of the Firm in Manufacturing Industries in Indonesia

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Abstract: This research aims to determine the application of trade off theory in determining the value of the firm by observing the factors of institutional ownership structure, liquidity and profitability that affect the capital structure and test the differences in capital structure in LQ-45 firms. The results showed that the independent variables jointly had a significant effect on the dependent variable of 15.90% with the fixed effect model as a fit model for measuring capital structure. The results showed that the structure of institutional ownership and profitability had a significant effect on capital structure variables, while the current ratio had no significant effect on capital structure variables. This research found that firms with high Institutional Ownership Structure (KPI) can increase external funding so that the capital structure is higher. Liquidity (current ratio) does not affect the capital structure (DER). Low profitability (return on equity) will increase the capital structure (DER), because firms need external funding to overcome their profitability. The results of this research indicate that there is no difference between the capital structure of firms that have high value and low value. Thus, the results of the research do not support the trade off theory in capital structure decisions in manufacturing firms in Indonesia.

Keywords: Trade Off Theory, Capital Structure, Institutional Ownership Structure, Liquidity, Profitability, Value of The Firm.

I. INTRODUCTION

Trade off theory indicates that there is one optimal leverage level in finding the relationship between capital structure and value of the firm. The firm would try to optimize the leverage up to certain level in order to maximize the value of the firm by making use of tax due to the use of debt. The capital structure explains that the financial policy of the firm in determining the capital structure (the combination of debt and equity) aims at optimizing the value of the firm. It is very important for the firms to strengthen their financial stability because the change in capital structure may cause the changes of the value of the firm. The decreasing of the value of the firm may influence the decreasing of their share value. The value of the firm is a very essential element because it reflects their performance related to the share price. A high share price makes a high value of the firm. The value of the firm is measured by the price to book value, while the capital structure is measured by the debt to equity ratio. Price to Book Value (PBV) with a number higher than one indicates that the firm has a bigger share price than their book value. Thus, they have a higher profit as well. A high Price to Book Value (PBV) will make the market believe in the performance and prospect of the firms in the future. Debt to Equity Ratio (DER) with a number below one indicates that the firm has a lower debt than their capital (equity). For DER higher than one shows the total composition of the debt (short-term and long-term). The bigger it is compared to the total capital, the bigger the firm's burden towards the creditor. The institutional ownership structure has an influence towards the performance and quality of the firm in order to achieve their vision, i.e. maximizing the value of the firm. The increasing level of institutional ownership is able to create a bigger supervision that it can prevent opportunistic behavior from the managers and minimize agency conflicts between managers and shareholders. A high liquidity reflects the firm's capacity to pay their debt that the creditor do not feel doubtful in providing loans for the firm. A high profitability of the firm shows that the firm's performance is great and it has a long-term prospect that can attract investors to buy shares. This research aims at testing the implementation of trade off theory on a manufacturing firm in BEI.

II. LITERATURE REVIEW

Trade off theory is a theory of capital structure which states that the firm exchanges the benefit of the tax from debt funding with the problem inflicted by the potential of bankruptcy (Houston, 2006). From this model, it can be stated that the firms which do not use any loan and those which use their loan completely for investment funding are amiss. The best decision is the moderate decision by considering both funding instruments. Trade off theory assumes that there is a tax benefit due to the use of debt that the firm will use the debt to a certain extent to maximize the value of the firm. The essence of trade off theory in the capital structure is balancing the benefit and sacrifice inflicted as the cause of using debt. As long as the benefit is bigger, the additional debt is still allowed. If the sacrifice due to the use of debt is bigger, then the additional debt is not allowed anymore. The 100% use of debt is difficult to find in practice and it is opposed by the trade off theory. In fact, the more debt the firm has the higher the burden that they have to bear, such as bankruptcy cost, agency cost, an increasingly bigger interest expense and so forth. Trade off theory has considered some factors such as corporate tax, bankruptcy cost, and personal tax in explaining why a firm has a certain capital structure (Husnan, 2000).

A. *The Value of the Firm*

Theory of the firm assumes that the main purpose of a firm is to maximize the value of the firm. This is reflected in the present value of all expected firm profits in the future. The value of the firm depends not only on the ability to generate cash flow, but also on the operational and financial characteristics of the firm being taken over. The main objective of the firm according to the theory of the firm is to maximize the value of the firm (Salvatore, 2005). Maximizing the value of the firm is very important for a firm, because maximizing the value of the firm also means maximizing shareholder prosperity which is the firm's main goal. Firm value is the investor's perception of the level of success of the firm that is often associated with stock prices. High stock prices can increase the value of the firm so as to be able to give confidence to the market towards the firm's performance and prospects in the future. Firm value is defined as market value, because it can provide maximum shareholder prosperity if stock prices increase. Various policies taken by management in an effort to increase the value of the firm through increasing the prosperity of owners and shareholders reflected in the stock price. (Houston, 2006), "firm value can be seen from the comparison between market prices per share and book value per share". The firm value in this research was confirmed through Price Book Value (PBV).

B. *Capital Structure*

(Gitman, 2009) the firm's capital structure illustrates the comparison between the amount of debt and equity capital used by the firm. Managers must be careful about making funding decisions for firms that are related to determining the capital structure, because this decision can affect the value of the firm and ultimately affect the achievement of objectives to maximize the welfare of shareholders. The funding decision (financing) of the firm relates to the determination of funding sources used to finance investment proposals that have been decided previously. Meeting these funding needs can be provided or obtained from internal and external sources of the firm. If the firm meets its funding needs from internal sources, then the firm carries out internal financing, namely in the form of retained earnings. Conversely, if the firm meets its funding needs from an external source, then the firm carries out external financing. Capital structure is the balance of the amount of permanent short-term debt, long-term debt, preferred stock and ordinary shares. The optimal capital structure is the ratio between the value of debt and equity that maximizes the firm's stock price.

III. HYPOTHESES

(Meckling, 1976) states that the addition of institutional ownership will help firms control managers and can reduce agency conflicts. Management will be more careful in determining funding sources. The tendency of the management will avoid funding sources through debt, because it will risk taking part in bearing the cost of capital from the use of the debt. The results showed that there was a significant negative relationship between institutional ownership and financial leverage. This means that an increase in the ratio of institutional ownership can reduce financial leverage (Cinko, 2017).

H1: Institutional ownership has a negative effect on the capital structure.

A high liquidity ratio shows the strength of the firm in terms of its ability to meet current liabilities of its current assets so that it increases the confidence of outside parties in the firm. The more liquid the firm, the higher the level of creditor trust in lending funds. The increase in liquidity will affect the level of debt on the

firm's capital structure decisions. The results of the research show that there is a positive correlation between liquidity and capital structure, because decision making on capital structure is highly dependent on the management of corporate liquidity (Achchuthan, 2013).

H2: Liquidity has a positive effect on the capital structure.

Firms with high returns have the ability to finance most of the funding needs with funds generated internally so that the use of debt is relatively small. Firms that have high profits basically do not need financing costs with debt, because this firm can use internal funds for its operations. The findings show that there is a negative relationship between profitability and capital structure and a positive relationship between financial leverage to capital structure. If profitability increases, financial leverage decreases (Hussain, 2016).

H3: Profitability has a negative effect on the capital structure.

Additions to institutional ownership will help firms control managers so that they can reduce agency conflicts. Management will be more careful in determining funding sources. The tendency of the management will avoid funding sources through debt, because it will risk taking part in bearing the cost of capital from the use of the debt. Firms that have a high level of liquidity indicate the opportunity to grow the firm tends to be high. The increase in liquidity will affect the level of debt on the firm's capital structure decisions. Firms with high returns have the ability to finance most of the funding needs with funds generated internally so that they do not need financing with debt. The results of the research state that the liquidity and profitability variables have a significant relationship with firm leverage, but the ownership structure has a negative and not significant relationship to the capital structure (Gharaibeh, 2015).

H4: There is the effect of institutional ownership structure, liquidity and profitability on the capital structure.

Firms that use debt in their operations will get tax savings, because taxes are calculated from operating profit after deducting debt interest, so that net income that is the right of shareholders will be greater than firms that do not use debt. Evidence of discovery shows that equity capital as a component of capital structure relevant to firm value means that the capital structure is positively and significantly related to firm value, and long-term debt is also found to be the main determinant of firm value (Zhao, 2012).

The trade off theory explains that if the position of the capital structure is below the optimal point, any additional debt will increase the value of the firm. Conversely, if the position of the capital structure is above the optimal point, any additional debt will reduce the value of the firm. (Liu, 2017) empirical results in his research revealed that the relationship between Market Debt Ratio (MDR) and Firm Value is positive when MDR is low, which implicitly involves an optimal debt ratio. Overall, the findings of this study support the trade-off theory.

Signals in the form of information about management performance in realizing the wishes of the owner or shareholder. This information can be conveyed through setting up the firm's capital structure. Setting the firm's capital structure can be done through the sale of new shares or obtaining funds through debt. A credible signal can show the difference between high-quality firms and low-quality firms. (Ross, 1977) shows that the simple incentive signaling model developed in this study provides a theory for determining the firm's financial structure, where the values of the firm will increase with leverage, because increased leverage can increase the perception of market value. (Lawal, 2014) in his research shows that there are differences in capital structure decisions between small-medium firms and large firms.

H5: There is a capital structure difference on the firms which have higher value and those who have lower value.

Based on the hypotheses described above, the research model can be drawn as below:

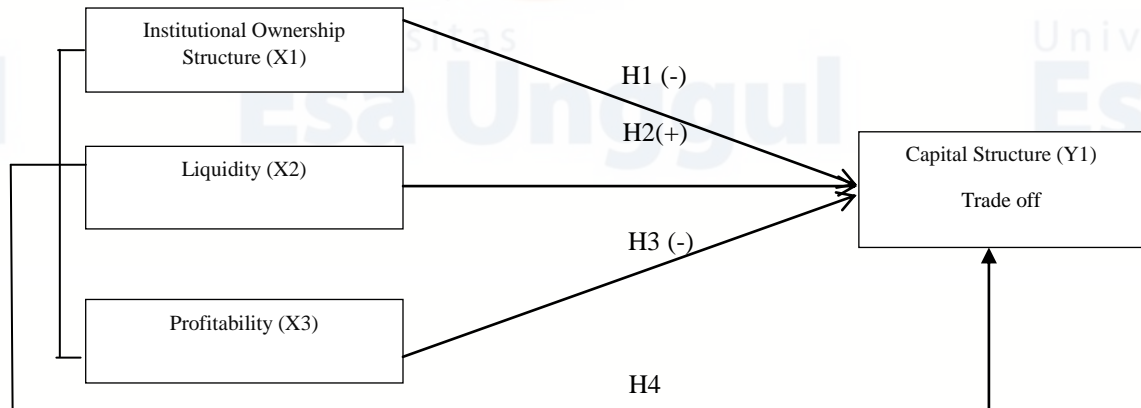


Fig. 1. Research Model I, Determinants of Capital Structure

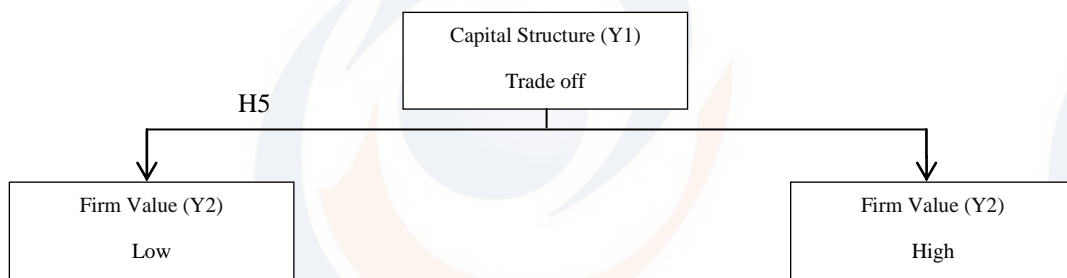


Fig.2. Research Model II, Differential Test of Capital Structure Based on Firm Value

IV. RESEARCH METHOD

This research uses a comparative causal research design. The data used in this research is secondary data. The data used in this research is secondary data which includes capital structure data, institutional ownership structure, liquidity, profitability and firm value. The population in this study are all manufacturing firms listed on the Indonesia Stock Exchange in the period 2013-2017. This research uses a sampling technique using purposive sampling, namely sampling techniques using criteria determined by the researcher. In addition, the criteria for sampling used are firms that have annual financial reports for the period 2013 to 2017, the firm also has complete data for all variables such as DER, Institutional Ownership Structure (KPI), Current Ratio, Return on Equity and PBV from 2013 to 2017. Thus the sample that met the criteria was 125 firms with a total observation of 470 data.

Capital structure (dependent variable) uses DER. The independent variable is the institutional ownership structure using KPI, liquidity using Current Ratio and profitability using Return on Equity (ROE). Furthermore, firm value is measured by PBV.

V. RESULTS AND DISCUSSION

Panel data is a combination of time series data and time section data. Testing of classical assumptions includes normality test, autocorrelation test, multicollinearity test and heteroscedasticity test. In the panel data regression model with the OLS approach, not all classical assumption tests must be done, but only multicollinearity and heteroscedasticity are needed. Basically the normality test is not a BLUE requirement (Best Linear Unbias Estimator). In addition, if the data size (n) > 30, it is assumed that the data is normally distributed. The results of the research data show that there is no heteroscedasticity, multicollinearity and autocorrelation.

VI. DISCUSSION

A. The Results Descriptive Statistics Analysis

Table 1. Descriptive Statistics DER, PBV, KPI, CR, ROE

| | DER | PBV | KPI | CR | ROE |
|--------------|-----------|-----------|-----------|----------|-----------|
| Mean | 0.711328 | 13.59512 | 0.727689 | 2.842925 | 0.172862 |
| Median | 0.625000 | 0.960000 | 0.772000 | 1.732350 | 0.075750 |
| Maximum | 85.87000 | 4935.450 | 0.997700 | 247.5352 | 8.637800 |
| Minimum | -20.83000 | -167.3100 | 0.224800 | 0.033700 | -1.227600 |
| Std. Dev. | 4.233658 | 228.4566 | 0.172449 | 11.47713 | 0.697889 |
| Skewness | 17.00756 | 21.35191 | -0.551136 | 20.69457 | 9.047175 |
| Kurtosis | 351.3877 | 460.3292 | 2.392977 | 441.4797 | 94.51557 |
| Jarque-Bera | 2399566. | 4131567. | 31.00978 | 3798726. | 170424.1 |
| Probability | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Sum | 334.3240 | 6389.705 | 342.0140 | 1336.175 | 81.24520 |
| Sum Sq.Dev. | 8406.290 | 24478234 | 13.94735 | 61778.74 | 228.4261 |
| Observations | 470 | 470 | 470 | 470 | 470 |

Source: Eviews (processed)

Table 1 shows that DER with a mean value of 0.711. The average value indicates that the firm is willing to maximize performance and minimize funding costs by maintaining an optimal capital structure. Firm value or price to book ratio (PBV) variable with a mean value of 13,595 indicates that the value of the firm to find out the firm's market value that reflects the firm's profits in the future, for example, the firm issues a few shares that can be sold at high prices. This shows that the firm has a high value. The KPI variable with a mean of 0.727 indicates that corporate monitoring is carried out by institutional investors so that it can run more effectively and can reduce managerial actions in terms of conducting earnings management. Liquidity or current ratio (CR) with a mean value of 2.842 indicates that high liquidity reflects the firm's ability to pay its debt so that the creditor does not feel worried in providing loans to the firm. Profitability or return on equity (ROE) variable with a mean of 0.172 indicates the firm's performance in obtaining low returns, because most of the capital is financed through debt.

B. Regression with Fixed Effect Model

Based on the result from Chow Test and Hausman Test, the regression analysis of the panel data focusing on fixed effect model was done. The regression result of panel data using the Eviews using the approaching method fixed effect can be seen in the following table:

Table 2. Summary of results regression test with Fixed Effects Model

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|----------|-------------|------------|-------------|--------|
| C | -2.165499 | 1.349740 | -1.604383 | 0.1095 |
| KPI | 4.899726 | 1.834655 | 2.670652 | 0.0079 |
| CR | 0.009405 | 0.017529 | 0.536531 | 0.5919 |
| ROE | -4.138495 | 0.786813 | -5.259821 | 0.0000 |

Effects Specification

Cross-section fixed (dummy variables)

| | | | |
|--------------------|-----------|-----------------------|----------|
| R-squared | 0.331712 | Mean dependent var | 0.711328 |
| Adjusted R-squared | 0.159713 | S.D. dependent var | 4.233658 |
| S.E. of regression | 3.880874 | Akaike info criterion | 5.731609 |
| Sum squared resid | 5617.821 | Schwarz criterion | 6.588663 |
| Log likelihood | -1249.928 | Hannan-Quinn criter. | 6.068796 |
| F-statistic | 1.928571 | Durbin-Watson stat | 2.892880 |
| Prob(F-statistic) | 0.000007 | | |

Source: Eviews (processed)

The results obtained from regression testing obtained a regression coefficient of 4.899 with a P-value of 0.0079. These results prove that institutional ownership structure (KPI) variables have a significant positive effect on capital structure (DER). The results of this research support the research (Li, 2009) which states that the institutional ownership structure has a significant positive effect on capital structure decisions. This means that the higher the proportion of institutional ownership, the more funding increases through debt in the firm's capital structure. The results obtained from regression testing obtained a coefficient of 0.0094 with a P-value of 0.5919. The fixed effect model regression results do not support the established hypothesis, because the data shows that the current ratio does not significantly effect the capital structure. However, the results of this test support the research conducted by (Zulhlimi, 2018) which states that liquidity does not have a significant effect on capital structure.

The results obtained from the regression testing obtained a coefficient of -4.1384 with a P-value of 0.0000. The fixed effect regression results support findings that show that there is a negative relationship between profitability and capital structure. If profitability increases, financial leverage decreases (Hussain, 2016). The results of this research indicate that the higher the profitability of a firm, the less the debt funding or in other words self-financing is increasingly dominant. This is done to avoid the occurrence of financial distress, where a condition reflects the inability of the firm to survive with all the conditions of the problems faced in the business world.

The constant coefficient value is -2.1654, while the KPI coefficient is 4.899, the current ratio is 0.009 and ROE is -4.138 with a significance level of 5%. Based on the results of the Chow Test and Hausman Test, this research uses the analysis of fixed effect panel data. R^2 test indicated by Adjusted R-Squared value = 0.159 from table 2 above shows that 15.90% of DER variance can be explained by changes in Institutional Ownership, Current Ratio and ROE, 84.10% DER is effect by other factors, as in trade off theory which states that in determining the optimal capital structure by including tax factors, agency cost, financial distress. The F test is used to test the effect simultaneously between independent variables on the dependent variable. The processed data shows that the KPI variable, Current Ratio and ROE simultaneously have a significant effect on DER. Test panel data regression analysis with fixed effect method obtained the regression equation as follows:

$$DER = -2,165 + 4,899KPI^* + 0,009Current\ Ratio - 4,138ROE^* \quad (1)$$

C. Mann Whitney Test

Table 3. Mann Whitney Comparative Test Results

| Test Statistics ^a | |
|------------------------------|-----------|
| | DER |
| Mann-Whitney U | 10936.000 |
| Wilcoxon W | 96841.000 |
| Z | -.688 |
| Asymp. Sig. (2-tailed) | .492 |

a. Grouping Variable: PBV

Source: Eviews (processed)

The result obtained from mann whitney test was Asymp. Sig. value of 0.492 > 0.05. This result shows that there is no significant difference between the capital structure of the firms which have high value (included in LQ-45) and the firms which have low value (not included in LQ-45). The result of this research shows that there is no difference between small firms and big firms in how fast they adaptation towards leverage target as suggested by the Trade Off Theory (Gonzales, 2010).

VII. RESEARCH FINDINGS

The results of this research indicate that there is no effect of firm liquidity on its capital structure, because the firms studied have an average level of liquidity that is quite high or above 100% each year so firms tend to use internal funding or issue shares rather than debt. Another reason that causes liquidity does not affect the capital structure is that the firms studied in this research tend to have good liquidity ratios, so financial managers are more concerned with investment needs and do not consider liquidity in determining their capital structure. Profitability (ROE) has a negative effect on capital structure (DER). The higher the firm's ability to generate profits, the lower the capital of a firm funded from debt. This indicates that the firm prefers funding internally, because it can reduce the costs incurred from debt. Firms whose share ownership is mostly by institutions have a more optimal level of supervision, because it can prevent managers from doing earnings management. In addition, for supervisory firms carried out by institutional parties, they can reduce agency costs. This research obtained results that showed that there was no difference in leverage between high-value firms or including the LQ-45 and low value firms or not included in the LQ-45. This is due to observations made on manufacturing firms so that if the firm has high debt, it is feared that financial pressure will occur. In addition, high-value and low-value firms are not concerned with capital structure but are more concerned with growth and profitability. The results of the research do not support the trade off theory in funding decisions that are dominated by debt in manufacturing firms in Indonesia.

VIII. CONCLUSION AND LIMITATION

The implementation of trade off theory in manufacturing firms is not proven, because the firm maintains an optimal capital structure with an average DER of a manufacturing firm of only 71%, the firm's stock price is 14 times higher than the book value. The KPI variable has a significant positive effect on capital structure (DER). This means that the increase in the ratio of institutional ownership will increase the use of corporate debt, because shareholders have alternative access to additional funding sources obtained from external parties. Liquidity does not affect the capital structure (DER). Profitability (ROE) has a negative effect on capital structure (DER), the higher the firm's ability to generate profits, the lower the capital of a firm funded from debt. This indicates that the firm prefers funding internally, because it can reduce the costs incurred from debt, so this research does not support the trade off theory. KPI, liquidity and profitability simultaneously have an effect on the capital structure of 15.90% and the remaining 84.10% is effect by tax factors, agency cost, financial distress. The results of this research there are no significant differences between the capital structure of firms that have high value and firms that have low value.

A. RESEARCH LIMITATION

The data used is an annual data. The samples used were 125 manufacturing firms registered in Indonesian Stock Exchange. The period used in this research was 5 years from 2013 until 2017. The theory used in this research was limited to the trade off theory. The variable used in this research was the current ratio variable as the variable which shows the firm's liquidity, which turns out to be not influencing the capital structure.

B. SUGGESTION

The future research can be done with an observation towards subjects other than manufacturing firms and lengthening the period of the research for longer than five years. The data observation should not be limited to annual data, instead, it is possible to add quarterly data. Furthermore, the variable used in the research needs to be added in order to obtain optimal results and KPI and ROE variables need to be retested for different samples.

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