

**THE IMPACT OF DEBT TO EQUITY RATIO, DEBT TO ASSETS RATIO,
TANGIBILITY, INTEREST COVERAGE RATIO AND FINANCIAL LEVERAGE
MULTIPLIER ON FIRM VALUE**

**(Empirical Study of the Manufacturing Companies that Listed on Indonesia Stock
Exchange (IDX) during the Period 2010-2015)**

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ABSTRACT

The purpose of this research is to examine if there exists any influence and impact of capital structure variables on firm value. The research samples are 29 manufacture companies that listed in Indonesia Stock Exchange (IDX) during period 2010-2014. The research uses purposive sampling method, regressed and descriptive analysis. Capital Structure are measure by 5 variable which are Debt to Equity Ratio (DER), Debt to Assets Ratio (DAR), Tangibility (TGB), Interest Coverage Ratio (ICR) and The Financial Leverage Multiplier (FLM) and for the Firm Value is measured by Price to Book Value (PBV). The research indicates Capital structure has positive influence to Firm Value.

Keywords: Capital Structure, Debt to Equity Ratio (DER), Debt to Assets Ratio (DAR), Tangibility (TGB), Interest Coverage Ratio (ICR), The Financial Leverage Multiplier (FLM), Firm Value, Price to Book Value (PBV)

A. Research Background

Capital structure decisions are the most significant finance decisions companies that counter by firm. It has been long discussed whether capital structures are influential of cost of capital and firm value. Actually, in business activity, all of company needs fund in order to support the operational activity within the company. The managers are responsible to determine an appropriate decision in financing the operational activity. The process of financing on operational activity in firms can separated to two part which are external financing and internal financing. The external financing process is debt in the bank and

obligation and the internal process are stock, depreciation and retained earning. The decisions in term of financing are can separated become 2 side which is long term and short term.

The topic about capital structure has been the subject of many studies and many researches. It has argued that profitable firms were less likely to depend in debt in their capital structure than less profitable ones. It has also been argued that the firms with a high growth rate have a high debt to equity ratio (Tian&Zeitun, 2007).

The capital structure is the comparison between internal financing and long term debt of firm. The capital structure is important because capital structure influence the performance and the value of firm immediately. So, firm so need to find the optimal capital structure (Lukas SetiaAtmaja, 2003). In fact, firm's goals are responsible to maximizing the firm's revenue and minimizing the firm's cost. Therefore, the explanation above is one of measurement of success managers that can identify the optimal capital structure. The inappropriate of capital structure can make the profitability of firm decreased, make problem in financial condition and maybe can make company bankrupt.

Generally, the theories of capital structure base on two theories, which is *Trade off* theory and *Pecking* Theory. Trade off theory can exist because of combination theory of Modigliani –Miller that involves the financial distress and the agency cost. This situation indicate that there is saving tax shield and bankruptcy cost. The high debt is the high of tax shield gained. In other view, the higher of debt make the higher chance to gain bankruptcy.

Pecking Order Theory suggests that financing decision follow the hierarchy which the internal source financing is priority than external source financing. In this case within the theory, debts become more prior than financing from internal resource. This occurrence can emerge because there is *asymmetric information* in order to gain the fund from external side.

The policy to determine the capital structure is one of reflection of firm's policy. There are many of factors that affect managers to determine the capital structure. According to Brigham and Houstonv (2006), there are four the main factors that influence the process determining the capital structure such as business risk, flexibility of finance, tax position, conservatism or aggressiveness of management.

The studies found that according to Riyanto (2001), capital within a firm can separated become two components, which are individual capital and foreign capital (debt). Specific combination between individual capital and foreign capital (debt) in term of financing to cost the activity of firm is capital structure. Base on understanding that explains by Riyanto (2001), that capital structure is a permanent expenditure that shows by the balance

of individual capital and foreign capital (debt). The balance of both individual capital and foreign capital (debt) influence the level of risk and the level of return that expect by firm.

B. Problem Statement

Based on the research background that has elaborated in this study this study will examine the effect of capital structure on firm value. And the indicator of the firm value that use in this research is Price to Book Value. The question that appear in problem statement is “Does the capital structure affect the firm value?”

C. Research Scope

- 1) In this research the capital structure will measure by Debt to Equity Ratio (DER), Debt to Assets Ratio (DAR), Tangibility, Interest Coverage Ratio (ICR), and Financial Leverage Multiplier (FLM). And the firm value will measure by Price to Book Value.
- 2) This study is focused on the effect of the capital structure on firm value. The firm that use for the object in this study is the firm that already listed in the IDX (Indonesia Stock Exchange).
- 3) The firm that will appear in this research is the firm that classify as the mining company that listed in IDX (Indonesia Stock Exchange). The company that will be choose is the company that have a complete financial report that needed by the variable in this research. The interval of year in term of collection the data is 5 years which from year 2010 until year 2015.

D. Research Objectives

The capital structure and the firm value is quite interest in the study of finance. There are many of researches have been identify about the containing of both the capital structure and the firm value. In this study the researcher wants to identify the relation of both capital structure and the firm value. So the researcher want to state what is the main objective of this study. The objective of this research is to analyze the effect of capital structure on firm value. Whereas the capital structure will measure by Debt to Equity Ratio (DER), Debt to Assets Ratio (DAR), Tangibility, Interest Coverage Ratio (ICR), and Financial Leverage Multiplier (FLM).

Accorsing the explanation on above, it can be conclude that this research objective are identify the impact of Debt to Equity Ratio on Firm Value, the imoact of Debt to Assets Ratio

on Firm Value, the impact of Tangibility on Firm Value, the impact of Interest Coverage Ratio on Firm Value, and the last is to identify the impact of Financial Leverage Multiplier on Firm Value.

E. Hypotheses Development

H1: There is a positive impact of Debt to Equity Ratio on firm value.

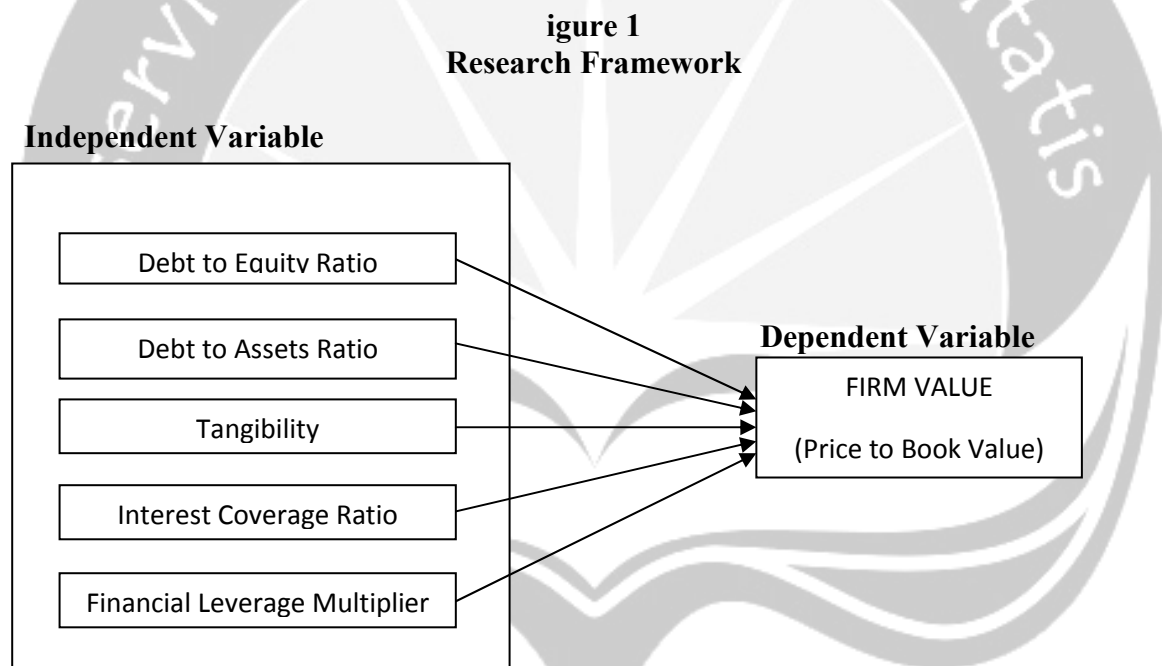
H2: There is a positive impact of Debt to Asset Ratio on firm value.

H3: There is a positive impact of Tangibility on Firm Value

H4: There is a positive impact of Interest Coverage Ratio on firm value

H5: There is a positive impact of Financial Leverage Multiplier on firm value

F. Research Framework



G. Data Analysis

1. Descriptive Statistic

Descriptive statistics were used to describe the conception of research data. The variables used in this study are includes Equity Ratio (DER), Debt to Assets Ratio (DAR), Tangibility (TGB), Interest Coverage Ratio (ICR) and The Financial Leverage Multiplier (FLM) as the independent variable and Price to Book Value (PBV) as the

dependent variable. The number of samples that processed before trimming in this study was 174.

Table 1
Descriptive Statistic

	N	Minimum	Maximum	Mean	Std. Deviation
PBV	174	.03000	57.92000	4.2352299	7.80534038
DER	174	.14467	17.02404	.9249312	1.44320866
DAR	174	.02607	.86598	.3863069	.17905547
TGB	174	.02160	4.62980	.3168701	.35549947
ICR	174	-6.50064	419.59221	55.5307529	82.17734267
FM	174	.47213	206.15917	31.3360776	36.76733669
Valid N (listwise)	174				

Source: Data Processing with SPSS in Appendix C

2. Classical Assumption Test

A good regression model must meet BLUE (Best Linear Unbiased Estimator) criteria based on Gujarati (1995) in Kuncoro (2013). The classical assumption test in this study will use normality test, multicollinearity test, heterocedasticity test and autocorrelation test. The results of the overall data with total 174 samples actually did not pass the classical assumption test because it found the existence of outliers. Therefore, it needs trimming or eliminating outlier data.

Table2

The result of Normality Test, Multicollinearity Test, Heterocedasticity Test, and Autocorrelation Test

No	Test	Test Result	Explanation
1	Normality Test	Value of probability > 0,05 which is 0,301.	The data is normally distribute
2	Multicollinearity Test	The VIF (Variance Inflation Factor) value all of variable is less than 10 and the Tolerance value all of variable is more than 0,1.	There is multicollinearity
3	Heterocedasticity Test	the dots spread randomly as well as spread both above and below 0 on the Y axis	There is no Heterocedasticity
4	Autocorrelation Test	Durbin Watson (DW) value of 2,053 state between 1,804 until 2,196.	There is Autocorrelation

3. Hypothesis Testing

a. Multiple Regression Analysis

The statistical tool used to test the hypothesis of this study is multiple regression test by pooling the data because in the regression analysis, besides measuring the strength of the relationship between two or more variable, also shows the direction of the relationship between the dependent variable and independent variable (Ghozali, 2006). The influence of independent variable on the dependent variable was tested at a significance level of 5% and a confidence level of 95%. Multiple regression model used in this study:

$$PBV = \beta_0 + \beta_1 DER + \beta_2 DAR + \beta_3 TGB + \beta_4 ICR + \beta_5 FLM + e$$

Where:

DER : Debt to Equity Ratio

DAR : Debt to Assets Ratio

TGB : Tangibility

ICR : Interest Coverage Ratio

FLM : Financial Leverage Multiplier

β_0 - β_5 : Estimated Coefficients

e : error

b. Simultaneous Hypothesis Testing (F Test)

Simultaneous Hypothesis Testing or F test was used to assess the goodness of fit regression models tested in this study. A good regression model showed that the independent variables are able to explain or predict the dependent variable when tested simultaneously. The criteria used in the decision making according to Ghozali (2011) are:

- 1) If F Value > F Table, then H_0 : Capital Structure variable (DER, DAR, TGB, ICR, FLM) has no influence on Firm Value PBV, is rejected
- 2) If sig < 0.05, then H_0 : Capital Structure (DER, DAR, TGB, ICR, FLM) has no influence on Firm Value (PBV), is rejected

In the testing the effect of capital structure variable on Firm Value, it is conducted by multiple linear regression analysis partially. Whereas, the independent variables on this research are DER, DAR, TGB, ICR, and FLM and the dependent variable is PBV. The F test result it can be seen from the table above, it can be known that the

level of significance in this model is $0.000 < 0.05$ which means there is significant influence simultaneously on the independent variable in the form DER, DAR, TGB, ICR, FLM on the dependent variable is PBV.

c. Coefficient of Determination (Adjusted R^2)

Coefficient of determination is used to determine the percentage contribution of the influence of the independent variable on the dependent variable. The coefficient of determination (Adjusted R^2) was also used to measure how well the regression line in accordance with the actual data. This coefficient of determination measures the percentage of the total variation in the dependent variable Y that is explained by the independent variables in the regression model (Ghozali, 2011). The coefficient of determination lies between 0 and 1 ($0 \leq \text{Adj. } R^2 \leq 1$). Adjusted R^2 will be better if it is getting closer to 1 in the regression model because independent variables provide almost all the information needed to predict the variation of the dependent variable. The value of adjusted R^2 is 0.489 or 48.9%, which means that the independent variable in the form of DER, DAR, TGB, ICR, FLM can explain 48.9% of the PBV while the remaining 50.1% is explained by other variable outside the model

d. Partial Hypothesis Testing (t Test)

T tests were performed to test the significance level effect of independent variables DER, DAR, TGB, ICR, FLM and the dependent variables PBV. Conclusions can be seen from whether significant or not the independent variables on the dependent variable. If the probability value > 0.05 then it can be concluded to be insignificant and vice versa. Decision-making criteria to see the effect of each independent variable can be done in two ways (Ghozali, 2011), such as:

1) Influence or no influence

- If $\text{sig} > 0.05$, then H_0 : Capital Structure has no influence on Firm Value, is accepted
- If $\text{sig} < 0.05$, then H_0 : Capital Structure has no influence on Firm Value, is rejected

2) Positive or negative influence

If $\beta > 0.00$, then H_{a1} , H_{a2} , H_{a3} , H_{a4} , and H_{a5} are accepted

Where:

- Ha1: Debt to Equity Ratio has positive influence on Firm Value as measured with PBV
- Ha2: Debt to Assets Ratio has negative influence on Firm Value as measured with PBV
- Ha3: Tangibility has positive influence on Firm Value as measured with PBV
- Ha4: Interest Coverage Ratio has positive influence on Firm Value as measured with PBV
- Ha5: Financial Leverage Multiplier has positive influence on Firm Value as measured with PBV

Table 3
t Test Result

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.819	.541		-1.515	.132		
	DER	-.093	.142	-.045	-.655	.514	.721	1.386
	DAR	4.173	1.320	.232	3.162	.002	.625	1.601
	TGB	-.502	.516	-.059	-.974	.332	.906	1.104
	ICR	.028	.003	.602	9.586	.000	.848	1.179
	FM	.047	.009	.314	5.261	.000	.940	1.064
2	(Constant)	-.749	.529		-1.415	.159		
	DAR	3.756	1.154	.208	3.255	.001	.814	1.229
	TGB	-.516	.514	-.061	-1.003	.317	.907	1.102
	ICR	.028	.003	.602	9.598	.000	.848	1.179
	FM	.048	.009	.316	5.310	.000	.942	1.061
	3	(Constant)	-.817	.525		-1.557	.122	
DAR		3.441	1.111	.191	3.099	.002	.879	1.138
ICR		.028	.003	.601	9.580	.000	.849	1.178
FM		.049	.009	.324	5.485	.000	.958	1.044

a. Dependent Variable: PBV

Source: Data Processing with SPSS in Appendix D Table C

From the table 3 it can be seen the result of t Test that can be creating an analysis. It can be seen that the DER beta coefficient is -0.093 with significant value 0.514. t Test result showed that DER has negative influence on firm value. It means that the higher the DER will contribute negative influence of PBV.

It can be seen from the result that the DAR beta coefficient is 4.173 with significant value 0.002. t Test result showed that DAR has positive influence in firm value.

In this model, it can be seen from the result that the TGB beta coefficient is -0.502 with significant value 0.332. t Test result showed that TGB has negative

influence in firm value. It means that the higher the TGB will contribute negative influence of PBV.

It can be seen from the result that the ICR beta coefficient is 0.028 with significant value 0.000. t Test result showed that ICR has positive influence in firm value.

In this model, it can be seen from the result that the FLM beta coefficient is 0.047 with significant value 0.000. t Test result showed that FLM has positive influence in firm value. It means that the higher the FLM will contribute positive influence of PBV.

H. Conclusion

Based on the data collected and the result of hypothesis testing using multiple regression, then it can be concluded as follows:

1. Debt to Equity Ratio as the capital structure variable does not influence on Firm Value (PBV) with significant value 0.514 that mean higher than 0.05. Means that Hypothesis 1: "There is a positive impact of Debt to Equity Ratio on firm value" is rejected. Debt to Equity Ratio has negative beta coefficient which is -0.093. Means that Debt to Equity Ratio does not influence on the Firm Value of company that proxy by Price to Book Value (PBV).
2. Debt to Assets Ratio as the capital structure variable positively influence on Firm Value (PBV) with significant value 0.002. The value of significance is lower than 0.05 means that Hypothesis 2: "There is a positive impact of Debt to Asset Ratio on firm value" is rejected. Debt to Assets Ratio has positive beta coefficient with the beta value 4.173. Means that Debt to Assets Ratio positively influences on the Firm Value of company that proxy by Price to Book Value (PBV).
3. Tangibility as the capital structure variable does not influence on Firm Value (PBV) with significant value 0.332. The value of significance shows that the value is higher than 0.05 so means that the Hypothesis 3: "There is a positive impact of Tangibility on Firm Value" is rejected. Tangibility has negative beta coefficient of -0.502. Means that Tangibility does not influence on the Firm Value of company that proxy by Price to Book Value (PBV).
4. Interest Coverage Ratio as the capital structure variable positively influence on Firm Value (PBV) with significant value 0.000. The value of significance is lower than 0.05 means that the Hypothesis 4: "The influence of Interest Coverage Ratio on Firm

Value (PBV)” is accepted. Interest Coverage Ratio has positive beta coefficient of 0.028. Means that Interest Coverage Ratio positively influences on the Firm Value of company that proxy by Price to Book Value (PBV).

5. Financial Leverage Multiplier as the capital structure variable positively influence on Firm Value (PBV) with significant value 0.000. The value of significance is lower than 0.05 so means that the Hypothesis 5: “The influence of Financial Leverage Multiplier on Firm Value (PBV)” is accepted. Financial Leverage Multiplier has positive beta coefficient of 0.047. Means that Financial Leverage Multiplier positively influences on the Firm Value of company that proxy by Price to Book Value (PBV).

I. Managerial Implication

Capital Structure is a thing that crucial on the company. There are many term of capital structure that can implement in the company. Every single company surely needs the capital structure in order to financing the company. The capital structure is need by all company. This study has several managerial implications include:

1. For Management of Companies

This study can be using by the company to financing the company. The independent that already explain in this research can be a reference to company which one the method of capital structure that can proper for certain company. Because the better capital structure is impact the firm value.

2. For Investors

This finding of study can be using by the investor’s view. The describing of the research can delivered the good information for the decision making of investment. The data of this research is from the manufacturing company that listed in the IDX. The information of capital structure of every single company that identify in this research can help investor clearly in order to make decision making.

J. Research Limitation and Suggestion for Further Research

1. Research Limitation

This study has several limitations include:

- a. A sample of study is limited to 29 manufacture companies that listed on IDX during the period 2010-2015.

- b. The independent of this this research are Debt to Equity Ratio, Debt to Assets Ratio, Tangibility, Interest Coverage Ratio, Financial Leverage Multiplier and dependent is Firm Value that proxy by Price to Book Value. There are other independent and dependent variable out of variable on above.

2. Suggestion for Further Research

- a. For further research, the researcher suggests add more the other variable of capital structure to make the research better. Theexample of capital structure are growth, size, etc.
- b. Take time period also can give more better observation result. A longer time period can identify the more specific.

