# Capital Structure: The Factors that influence it. (Empirical Study on Manufacturing Companies in Indonesia Stock Exchange)

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**Abstract**

The purpose of this study is to examine the factors that affect the capital structure of the manufacturing companies listed on the Indonesia Stock Exchange. As the subject of research is manufacturing companies in Indonesia Stock Exchange. The variables used in the study is the tangibility, profitability, firm size, liquidity, and capital structure. The study uses panel data, which is a combination of data time series and cross section. Analysis of data using multiple linear regression method.The results showed that tangibility positive effect on the capital structure on a significance of less than 1%. Profitability (ROA) negatively affect the capital structure on a significance of less than 1%, and liquidity (CR) negatively affect the capital structure on a significance of less than 5%. While the firm size has no effect on the capital structure.

**Keywords:** Tangibility, Profitability, Firm Size, Liquidity and Capital Structure,

## 1. BACKGROUND

The capital structure is a structure round of funding companies that demonstrate corporate financing source from which it came. This concept evolved from the study results Modigliani and Miller (1958), in which the research marked the beginning of the era of the modern capital structure, so that the research further concentrated to undermine the assumptions of Modigliani and Miller in a bid to develop the theory of capital structure realistic. Stiglitz and Fama, relax the assumption of the same risk class and a risk-free debt, showed that the changes in the funding decision will be offset by the investors with making debt (leverage) itself, resulting in redistribution of wealth [40] and [15].Stiglitz and Fama, relax the assumption of the same risk class and a risk-free debt, showed that the changes in the funding decision will be offset by the investors with making debt (leverage) itself, resulting in redistribution of wealth [40] and [15].Miller, consider the corporate tax (tc) and individual income tax derived from shares (tps) and bonds (tb), with assuming a tax increase. At equilibrium (equilibrium condition) occurs (1 - tc) (1 - tps) = (1 - tb), leverage proved irrelevant to the value of the company [27].

Subsequent developments, Modigliani and Miller to correct their model by considering the existing corporate tax [28]. The presence of corporate taxes showed that the use of debt reduces taxable income, so companies that use debt to pay less tax than companies that do not use debt. The significance of the change in the assumption of corporate taxes is that the use of debt as a solution to maximize the value of the company. This assumption is proved by research conducted by Masulis [15], that the tax-based theory is more powerful than the bankruptcy theory and the theory of redistribution of wealth. The development continued until up to now has been a lot of research results regarding capital structure, both linked to the performance of the company, the value of the company up to the factors that determine the amount of capital structure.

Phenomena that occur within the company is that almost all companies use external funding sources, the use of debt to meet its capital needs. This happens because in general the use of internal funds are insufficient, so that in practice companies use a combination of funding sources internal and external funding sources. Use of funds from internal sources and external sources have the same goal, namely in order to for business development. Source of internal funds derived from retained earnings, while external funding sources can come from debt and equity capital. The use of external funding sources, whether from debt and equity capital will make the company's capital structure be changed. Various factors are considered before a decision is determined financing, because these decisions can impact strategic for the company.

The capital structure of the company can be seen on the right side of the balance sheet, which shows the proportion of debt to total capital used by the company. According to Ross, et al, "Capital structure is a specific combination of long-term debt and equity used by companies in the finance company" [35]. Every company is trying to achieve an optimal capital structure in order to maximize the value of the company. Brigham and Houston [9] says that the optimal capital structure should be on the balance between risk and return is maximizing stock prices.

Capital structure, related to management policies in determining funding decisions for the company. The decision is one of the strategic decisions of management, will therefore have an impact on the company's

performance. Therefore, the decision should be based on consideration of the very good, the various factors that can affect the capital structure considered. It is intended to deliver the best outcome, namely the level of optimum capital structure for the company.

Already a lot of literature that discusses the capital structure and the factors that influence it, both conceptually and discussion of the results of empirical research. Optimum capital structure becomes a very important part in order to maintain a balance between the use of funds from the debt and equity capital. Several studies of the factors that determine the capital structure has been done before, among others by Myers, Titman and Wessels, Harris and Raviv, Rajan and Singales), Bevan and Danbolt, Omet and Nobanee, Huang and Song, Antoniou, et al, Caesar, and Holmes, Chen, Bauer, Deesomsak, et al, Buferna, et al, Delcoure, Abor, Khraiwish and Khraiwesh, Vatavu, and Boakye, [30], [42], [19], [34], [4]. [33], [20], [2], [10], [11], [4], [13], [6], [14], [1], [24], [45], and [7].

This study was conducted to examine the factors that determine the company's capital structure in the case of manufacturing companies listed on the Indonesia Stock Exchange. Given the manufacturing companies in the Indonesia Stock Exchange is currently experiencing a period of recovery after a period of crisis a few years ago. The consequences of future developments is the increasing capital requirements, and management must be able to search for the cheapest source of funds in an effort to finance his efforts. On the other hand, management must also be able to maintain a balance between risk, profitability and liquidity of the business.

Based on the explanation of the concept and the results of previous studies, the problem in this research is how Tangibility, Profitability, Firm Size and Liquidity affect the capital structure. Given this research are expected to contribute ideas based on empirical conditions of the policy management in determining sources of financing companies, especially manufacturing companies listed on the Indonesia Stock Exchange.

## 2. REFERENCES

Theories that explain the capital structure began in 1958, when professor Merton Miller and Franco Modligiani publish the most influential financial articles, entitled "The Cost of Capital, Corporation Finance, and The Theory of Investment". Modigliani and Miller proves with some assumptions, that the value of a company should not be affected by capital structure. Proposition of Modigliani and Miller in that was the start of a new era of development of the modern financial theory to date. In the development of financial theory, until now there are two established financial theory, the theory of capital structure and agency theory, both theories have a very close relationship [27].

The modern theory of capital structure paper begins with Modigliani and Miller, which is a new breakthrough in modern financial management [27]. The proposition put forward Modigliani and Miller had enormous support until now. Proposition stating the irrelevance of financing decisions provide important implications, namely in what circumstances the decision becomes irrelevant, and implicitly also raises questions on the conditions in the decision becomes relevant [19].

Having experienced a very long discussion, Modigliani and Miller loosen one of the assumptions about their company tax [28]. That if any company tax, then the financing decisions to be relevant, the use of debt will increase the company's value. The next development for over forty years, a variety of theoretical and empirical research has been done by releasing some of the basic assumptions of the Modigliani and Miller propositions. Various research has enriched proposition of Modigliani and Miller to include tax factors, costs of financial distress, bankruptcy costs, agency costs, and transaction costs [29]. [30], and [21].

Efforts to incorporate a variety of factors and removed one by one from various imperfections of this market has spawned two new financial theory of opposites, namely the trade-off theory, known as balancing theory and pecking order theory [31]. Although both theories states that the financing decision is relevant in capital structure policy on the capital market conditions are not perfect.

The trade-off theory [30], predicts that in the search for the relationship between capital structure to the company's value, there is one level of leverage (debt ratio) is optimal. The use of debt will increase the company's value up to a certain leverage limits (optimal), and after the use of debt would lower the value of the company, due to the use of debt after optimal leverage will cause the cost of bankruptcy is greater. According to this theory, large companies generally tend to be less likely to go bankrupt, making it easier to attract bank loans compared with small companies.

Pecking order theory is a form of development of the theory of Static Trade-Off (STO), proposed by Myers and Majluf [30]. According to this theory, that the determination of the optimal capital structure based on hierarchy funding decisions based on the capital cost of the most expensive, which is based on internal sources of funds (profit) to external funding sources (debt and shares). At first this theory lack of support theoretical and empirical evidence [3], but later after receiving the support of the argument information asymmetry, in addition to the arguments profits from taxes, and the significance of transaction costs, so the pecking order theory more widely known [29, [30], [31].

The capital structure is a combination of debt, preferred stock, and common stock used by the company to plan to get funding (capital). Thus, the composition of the use of debt, preferred stock, common stock will

determine the amount of the company's capital structure. The companies that are growing, requiring large capital, these companies tend to use these instruments to meet capital requirements.

There are several measures of capital structure that is often used as its proxy, the ratio of total debt to total assets, long-term debt to total assets, long-term debt to equity, short-term debt to total assets, short-term debt to equity, and long-term debt to capitalization ratio. Although there are several proxies as a measurement, but the use or the selection of its proxy tailored to the needs of researchers. While the factors affecting capital structure today is very complex, but according to Harris and Raviv, that the factor which increases the leverage or capital structure is fixed assets, non-debt tax shields, investment opportunities, and firm size [19]. While the factors that decrease the leverage or capital structure is volatility, advertising expenditures, the probability of bankcrupcy, profitability, and the uniqueness of the product. Along with Harris and Raviv, then Rajan and Zingales, focuses on four variables that affect the capital structure, namely; tangibility of assets, the market-to-book ratio (proxy for investment opportunities), firm size, and profitability [19], [34].

The results of the Rajan and Zingales, shows in USA tangibility of assets, the market-to-book, firm size (LogSale) and profitability, significant effect on leverage (capital structure) [19]. The market-to-book and profitability, a negative effect, while the tangibility of assets and firm size (LogSale) positive effect. Research from Omet and Nobanee, performed at industrial companies in Jordan show that the size and retairned earnings to total assets, and tangible assets have a significant effect on the capital structure [33]. Huang and Song, doing research on companies in China, and the results show that there is a significant positive effect between profitability and leverage [20]. While research Bauer in the Czech indicate a positive effect between the size on the capital structure, while ROA and tangible assets significant negative effect on the capital structure [4].

Research Khrawish and Khrawesh in industrial enterprises in Jordan, showed that the size and tangibility significant positive effect on leverage, while profitability significant negative effect on leverage [24]. Research from Vatavu in manufacturing companies in Romania, shows that the size effect positive significantly to the capital structure, while tangibility and investment opportunity has no effect [44].

**2.1 Tangibility**

Tangibility are intangible assets which constitute fixed assets, such as land, buildings, machinery and equipment. Fixed assets, based on the perspective of the trade-off theory and agency theory, companies that have fixed assets in significant amounts, will tend to have a total debt more than companies that have fixed assets in small amounts [37]. This is because the fixed assets can be used as collateral if the company is experiencing financial difficulties, so that the company will seek a loan from the outside. Fixed assets have physical form and easily assessed by a creditor, because it is more easily fixed assets rather than intangible assets pledged.

Tangibililty, or the composition of the asset structure is relatively fixed assets owned by the company. It represents a number of assets that can be pledged as collateral were measured by comparing the fixed assets and total assets. According to Brigham and Houston, a company that has a large fixed assets to serve as collateral for loans, and the company thus tend to use debt [9]. Assets for general purposes that can be used by many businesses may be good insurance, and otherwise on the assets to a special purpose. The structure of assets is an important factor in its financing decisions, because the assets owned by the company acts as a guarantee for the lender in the event of financial difficulties. Companies that have a high level of asset structure tend to use relatively large debts in its financing sources for the survival of the company.

**2.2 Profitability**

Profitability is the company's ability to earn a profit by using its equity through business activities does. Thus, the profitability include all revenue and expenses incurred by the company as the use of assets and liabilities within a specified period. Profitability can be used as the information for the various parties concerned with companies such as shareholders and investors.

According to Frank and Goyal, that companies with a high level of profitability, tend to have low debt levels, because they use the profits as a source of funds to meet capital requirements [16]. Frank and Goya, research results showed that firms with high profitability tend to have low leverage, companies with tangible assets that tend to have high leverage, and companies with large scale tend to have high leverage [16].

**2.3 Firm Size**

Firm size describes the size scale of the business, the larger the firm size the larger the scale of the business. Large-scale enterprises tend to use debt financing, because these companies tend to have high credibility. With high creditability, the large companies have better access to sources of finance, just as the stock market. In contrast to companies with small-scale enterprise, the company with the scale less likely to have cash flow coming in low in the face of investment opportunities profitable, do not have access to enter the capital market, so that at the same time small companies are reluctant to invite outsiders as a partner or colleague [38].

Based on the concept of trade-off theory, the effect of firm size of the debt is positive, where large companies are usually more diversiable, face the risk of bankruptcy is lower, and supporting a high proportion of debt usage. Companies with large scale also has great access to the financial markets, because of his reputation (Rajan and Zingales; Booth et al; Chen; Vatavu [30], [8], [11], [45]. Rajan and Zingales, the research found no effect signifkan between size with debt at stable economic conditions, and concluded that smaller companies also use debt, because smaller companies face the risk of low market (Vutavu [40], [45].

**2.4 Liquidity**

Liquidity is the ability of companies to fulfill all the obligations that have matured by means of its liquid. If the company uses a lot of current assets, means that the company can generate cash inflows to finance operating activities and investments. Current assets are greater indicates that the company has the ability to meet debt obligations. Ability to pay this debt can result in increased public confidence, particularly investor to the company, and if this capability is realized, it may decrease the proportion of debt in the capital structure.
The research results from Sibilkov, shows that liquidity positively related to leverage. Further analysis revealed that the relationship between liquidity assets and guaranteed debt is positive, while the relationship between liquidity assets and unsecured debt is curved (non-linear) [37]. Furthermore, research from Udomsirikull, et al found an inverse relationship between liquidity and leverage [43]. While Kajananthan and Achchuthan, shows that liquidity significant effect on the capital structure [23].

## 3. RESEARCH METHODS

**3.1 Data**

This study uses panel data is the data sourced from the secondary and ICMD. Population and sample of this research is manufacturing companies listed in Indonesia Stock Exchange (BEI) in the period 2012-2014.

**3.2 Research Variable**

This study will examine the factors that determine capital structure, using variables tangibility that is proxied by asset structure, profitability is proxied by return on assets (ROA), firm size is proxied by sales growth, and liquidity is proxied by the current ratio (CR) on the capital structure of companies listed on the Indonesia Stock Exchange.

**3.3 Specifications Model**

The analysis in this research is done by using multiple linear regression model. The regression model was formulated as follows:

$$CS = a + b_1Tang + b_2Profit + b_3Size + b_4Liq + e$$

**Information:**
CS = Capital Structure
a = Constant
$b_i$ = regression coefficient (i = 1,2,3,4,5)
Tang = Tangibility
Proft = Profitability
Size = Firm Size
Liq = Liquidity
e = error (residual)

## 4. RESULTS AND DISCUSSION

**4.1 Description Analysis**

As already described above, and in accordance with proxy used to measure tangibility, profitability, firm size (size), and liquidity as independent variables, and capital structure (CS) as the dependent variable. Statistical description for the dependent variable and independent variables can be explained by Table 1.Empirical data were analyzed using multiple regression model to estimate the influence of the factors that affect the company's capital structure. The results of the analysis are shown in Table 1.

**Table 1**
**Description Statistics**

| | N | Range | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|---|
| CS | 129 | 1,81 | ,07 | 1,88 | ,7780 | ,48553 |
| Tangibility | 129 | ,84 | ,01 | ,85 | ,3250 | ,19606 |
| Profitability | 129 | 39,41 | ,03 | 39,44 | 9,6878 | 8,04146 |
| Size | 129 | 177,80 | ,19 | 177,99 | 17,9348 | 22,41872 |
| Liquidity | 129 | 52,47 | ,18 | 52,65 | 2,6096 | 4,65922 |
| Valid N (listwise) | 129 | | | | | |

Based on the Table 1 above, statistical description indicates that the lowest capital structure of 7 percent and 188 percent higher, on average 77.48 percent. Thus, although the lag use of debt is quite high, at 181 per cent, but the average use of debt is still lower than the capital itself is used, ie 77.8 percent. This shows that the average manufacturing company in a secure position against the possibility of bankruptcy, because of its own capital position is higher than the debt being used.

The amount of fixed assets owned low of 1 percent, and the highest 85 percent, with an average value of 32.32 percent of total assets are used. Thus, the average investment in fixed assets of manufacturing enterprises amounted to 32.32 percent of all assets that were used. The consequences of this have an impact on working capital increased, so that liquidity becomes relatively higher.

In terms of liquidity, the liquidity of the lowest is 18 percent, and the highest 5265 per cent, the average liquidity 262.02 percent, 465.92 percent, while the standard deviation. Thus, the difference in liquidity of the manufacturing companies in the Indonesia Stock Exchange is relatively high.

In terms of profitability, profitability as low as 3 percent, and the highest 39.44 percent, the average value of 9.69 percent. The standard deviation of profitability of 8.04 percent, still lower than the average, thus resulting profitability between companies do not differ much. With an average profitability of 9.69 percent, indicating that manufacturing companies in the Indonesia Stock Exchange in relatively good condition.

In terms of company size, company size low 0.19 percent, and the highest 177.19 percent, the average size of the company 17.93 percent, with a standard deviation of 22.42 percent. Company size proxy for sales growth, as such, then this condition indicates that the lag sales growth among companies in the Indonesia Stock Exchange is relatively high, because the average growth greater than the standard deviation. This means that competition between companies is relatively high, and the company faced strong competition.

**4.2 Analysis**

The test results of test models, as in Table 3 and Table 4 (in the appendix), indicates the amount of Adjusted R-Square 13.5 percent, with significant value F is less than 1 percent. Thus, the regression equation meets the requirements of goodness of fit, as required by OLS, with accuracy independent variables to predict the capital structure of 13.5 percent, while 86.5 percent is determined by other variables outside the model.There are still many other variables that affect the capital structure, because the capital structure is the result of a management policy that is filled with a variety of considerations.

The regression analysis in Table 2, shows the influence of each independent variable; tangibility, profitability, firm size, and liquidity to capital structure as follows:

**Table 2**
**Regression Equations**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | ,998 | ,110 | | 9,040 | ,000 |
| | Tangibility | ,038 | ,211 | ,015 | ,179 | ,858 |
| | Profitability | -,020 | ,005 | -,336 | -3,989 | ,000 |
| | Size | ,001 | ,002 | ,065 | ,788 | ,432 |
| | Liquidity | -,023 | ,009 | -,224 | -2,686 | ,008 |

a. Dependent Variable: CS

Note:
* Significant at the level of less than 10%
** Significant at the level of less than 5%
*** Significant at the level of less than 1%

CS = 0,015Tang - 0,336Profit + 0,065Size - 0,224Liq

Tangibility is proxied by asset structure has no effect on the capital structure. The results of this study do not correspond with the results of research from Harris and Raviv, Rajan and Zingales, Bevan and Danbolt, Omet and Nobanee, Huang and Song, Antoniou et al), Buferna, et al, and Khrawish and Khrawesh [19], [34], [5], [33], [20], [2], [6], [24]. The results of this study are also not in accordance with the results of Bauer (2004), who found a negative influence between tangibility to the capital structure, the study was conducted in the Czech Republic. Nevertheless, the results are consistent with studies of Vatavu, who found no effect of tangibility to capital structure, namely the long-term debt and total debt, but the short-term debt are the effect is significant at the significance level of less than 10% [45].

The results of this study are also not in accordance with the opinion of Brigham and Houston, which states that companies that have large fixed assets to serve as collateral for loans, and the company thus tend to use debt [9]. Thus, the enterprises of manufacturing industry in Indonesia Stock Exchange does not use the asset structure in determining funding policy, especially in the use of debt as a source of corporate funding. The results of this study do not support the argument trade-off theory and agency theory, in which the companies have fixed assets in large amounts, would tend to use debt as a source of corporate funding.

Profitability is proxied by return on assets (ROA) a significant negative effect on a significance level of less than 1%. This result is consistent with the arguments of Harris and Raviv, that a company with a strong financial position can be relatively easy access to debt, and therefore easier to invest than the weak financial position of the company [19]. The results of this study are also consistent with studies of Rajan and Zingales, Bevan and Danbolt, Huang and Song, Antoniou, et al, Bauer, Buferna, et al, and Khrawish and Khrawesh [34], [5], [20], [2], [4], [6], [24].

The results also correspond with the arguments of Frank and Goyal (2004), which states that companies with a high level of profitability, tend to have low debt levels, because they use the profits as a source of funds to meet capital requirements. Based on these results, the manufacturing companies in the Indonesia Stock Exchange that have a high income tend to use profits as a source of corporate funding. This supports the argument that the Pecking Order Theory of determining the optimal capital structure based on hierarchy funding decisions based on the capital cost of the least expensive which is based on internal sources of funds (profit) to external funding sources (debt and shares).

Firm size is proxied by sales growth had no effect on the capital structure. The results support the argument Myers, which states that companies with high growth opportunities tend to use equity in the financing of its capital, since companies with high leverage are more likely to miss a profitable investment opportunity [29]. The use equity as a source of financing is not in accordance with the concept of trade-off theory arguments, which according to this theory perspective is debt as a major source of financing. The results are consistent with research conducted by Rajan and Zingales, which found no significant relationship between the size of debt [34].

The results are consistent with the concept of argumentation pecking order theory, which assumes a negative relationship between size and leverage, because companies that generate high profits, and making investments based on internal funding sources. Manufacturing companies in Indonesia Stock Exchange does not use size as a funding decision. The results also support the research of Lim, who found a negative relationship between the size with long-term debt [25]. However, these results do not correspond with the research of Titman and Wessel, Huang and Song, Antoniou, et al, Bauer, Khrawish and Khrawesh, and Vatavu, who found a positive effect of size with the capital structure [42], [20], [2], [4], [24], [45].

Liquidity is proxied by the current ratio (CR) a significant negative effect on a significance level of less than 1%. The results are consistent with research from Udomsirikull,et al and Olayinka, who found an inverse or negative relationship between liquidity and leverage [43], [32]. However, these results do not correspond with the research of Sibilkov, Uremadu, and Khalaj, Farsian and Karbalaee shows that liquidity is positively related to leverage - capital structure [37], [44], [23].

Liquidity is the ability of the company to meet all the obligations that have matured, including the ability to pay debts and interest thereon. The higher level of liquidity of a company, the lower the capital structure, due to the high liquidity of companies tend to reduce the use of debt to run its operations. According to the pecking order theory, companies that have high liquidity will tend not to use of debt financing. That is because companies with high liquidity has a large internal funds, so that the company will be using its internal funds to finance its investment in advance before using external financing through debt.

## 5. CONCLUTION

Based on the analysis, it can be given some conclusions as follows:

5.1 Companies with high fixed assets (tangibility) does not use debt as a source of funding, thus high fixed assets not used as collateral for the debt.

5.2 Companies with high income (profitability) tend to avoid the use of debt. Capital from the inside of choice in financing, because capital of the company's low cost.

5.3 Sales growth (firm size) is not used as a consideration in determining the source of financing, in particular to the use of debt as a source of financing.

5.4 Companies with high-current assets (liquidity) does not use debt as a source of financing, because the company can meet the needs of the working capital fund owned.

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