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Analysis of Correlation Between Internal Financing and External Financing (Empirical Study on Manufacturing Companies Listed on Indonesia Stock Exchange during 2010–2015)

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Abstract—The purpose of this study is to obtain empirical evidence about the negative relationship between internal and external funding for manufacturing businesses. The study uses multiple linear regression with panel data for manufacturing companies listed on the Indonesia Stock Exchange from 2010 to 2015. The study shows there is a negative relationship between internal and external funding for both constrained and unconstrained firms. The result of this study is consistent with "pecking order" theory.

Keywords—Constrained firms; external funds; internal funds; pecking order theory; unconstrained firms.

I. INTRODUCTION

In today's economic climate, companies must strive to achieve a competitive advantage to succeed in the business world. Companies can obtain competitive advantages such as advanced technology, high quality products, and superior human resources through both internal and external funding. Internal funding is obtained through retained earnings, while external funding can be obtained through a combination of debt and equity [1]. Bank Indonesia revealed that the growth rate of corporate debt in Indonesia has increased each year. In the Rupiah and Foreign Exchange Loan Position Reports provided by Commercial Banks and Rural Banks by the Group of Banks and Establishments, the loan rate in 2015 increased by 10.5% compared to 2014. The average increase in total foreign currency and corporate debt positions from 2011 to 2016 was 17% [2]. Companies generally require external financing as an option to finance short-term operational needs and long-term investments.

Financial flexibility is the main goal of any corporate financial policy in the United States and Europe [3]. Financial policy must be able to ensure sufficient funds are available for both near-term and long-term investment needs, especially when the company faces financial constraints. The selection of a funding structure becomes one of important strategy decisions for a company. The funding structure determines both short-term and long-term funding sources. Company management is responsible for determining the proportion of each within the funding structure to create an optimal funding structure in terms of flexibility as well as cost of capital [4].

Capital structure theory begins with the Modigliani-Miller (MM) theory (1958) which consists of two propositions. The first proposition states that in a world without taxes and without bankruptcy costs, the value of a firm with debt equals the value of the firm without debt. In other words, the choice of capital structure has no effect on the value of the firm. The second proposition states that in the presence of taxes, the value of the firm will increase with the use of debt in the capital structure [5]. The implication of the first proposition is that a company can choose to have as much debt as possible without affecting corporate value. This is only true under the conditions of the MM theory. In reality, companies that have debt in the capital structure should consider the risk of bankruptcy (financial distress). The second proposition of this theory suggests that in the presence of taxes, the funding structure does affect firm value. A debt-funded company will have a larger value than a non-debt funded company because using debt reduces corporate income taxes, since interest expense is deducted from income before taxes. However, in practice the MM theory has been criticized because the assumptions in the theory do not allow for the existence of transactions costs, bankruptcy costs, agency costs, and asymmetric information.

The pecking order theory proposed by Myers suggests that a firm's tendency to use internal funding sources rather than external funds is linked to the information asymmetry between company owners (investors) and management [6]. Information asymmetry makes external funding more expensive. In addition, there is also a trade-off theory that states the value of firms can be increased using tax advantages derived from debt holdings. Company managers are assumed to maintain an optimal debt / equity ratio to minimize costs associated with market imperfections, and to maximize the trade-off between the tax advantage provided by using debt, and financial distress costs caused by a level of debt that is too high [7]. In providing funding for investment and operational activities, the company strives to ensure the availability of funds as they are needed. Companies that have frictions in terms of funding tend to use internal funds before turning to external funds. This happens because external funds (both debt and equity) have higher costs and risks than internally generated funds. In certain circumstances, internal and external funding sources are substituted. The company is said to be experiencing financial constraints when the number of internal fund sources gives a significant effect in corporate financing [8].

Almeida and Campello shows a negative relationship between internal financing (profitability) and external financing (debt) [9]. The results of this study supports the pecking order theory. The negative relationship between internal funding and external financing is more visible in companies that do not experience financial constraints, for example: firms that pay big dividends, have large fixed assets, and have a high quality rating on their public debt issues. In the same study, Almeida and Campello found a complementary relationship between internal and external funding in financially constrained firms [9].

Prameswara's research on banking and mining industry firms listed on the Indonesia Stock Exchange shows that companies with and without financial constraints have behavior consistent with the pecking order theory [1]. The study shows that highly profitable firms tend to reduce their level of debt. These results are supported by research conducted by Sugiyanto, component companies and automotive companies listed on the Indonesia Stock Exchange use internal funds first as a source of funding, only using external funding if internal funds are insufficient [10]. However, Dianti shows that property companies listed on the Indonesia Stock Exchange refer to the trade-off theory in determining the capital structure of a company because it considers the tax benefit of using debt [11].

Therefore, the existing research on this topic in Indonesia has produced inconsistent results. This presents an opportunity for further research. This study focuses on the relationship between internal and external funding on companies that fall within the constrained and unconstrained categories as defined by Almeida and Campello [9]. This research aims to determine the correlation between internal and external funding for companies without financial constraints and the correlation between internal and external financing for companies that operate with financial constraints.

II. LITERATURE REVIEW

The capital structure of an enterprise consists of equity financing and debt financing. Determining the proportion of each type of funding is a decision made by the company's management. The goal is to maximize corporate value [12]. The capital structure can also be viewed as permanent financing consisting of long-term debt, preferred stock, and shareholder capital, including retained earnings [13]. This theory of capital structure was preceded by the MM theory proposed in 1958. According to Frank and Goyal there was no accepted theory of capital structure before the MM theory [14]. Modigliani-Miller reveals that in a world without taxes, the value of a company with debt (VL) and with no debt (VU) is the same. Investors are able to create their own degree of leverage so that leveraged and unleveraged positions can be achieved according to one's preferences. This is often referred to as the MM I proposition. MM also offered a second proposition, namely that, in a world without taxes, the cost of equity will increase as the amount of debt in the capital structure increases. MM propositions I and II assume there are no taxes and no transaction costs, investors and companies can borrow at the same rates, and all parties have access to the same financial information. Over time, MM expanded their theory by adding corporate income tax to the calculation. This development showed the value of a company with debt will be higher than the value of the company that has no debt, due to the tax advantage of interest versus dividends. When the corporate income tax component is included, the firm's value with debt is equal to the value of the firm without debt plus the debt tax shield [5].

The pecking order theory developed by Myers and Majluf suggests that firms tend to choose internal funding over external funding [15]. The same concept is expressed by Frank and Goyal who state there are three sources of funding for a company: retained earnings, debt and equity [16]. Retained earnings have no risk of loss, debt has a low risk of loss, while equity has a high risk of loss. In the view of investors, equity is clearly riskier than debt, which prompts investors to expect higher returns when investing in equity (stocks). For a company with retained earnings sufficient to finance a company's business, the company does not need to access external funding. If the company does not have sufficient retained earnings, the company is likely to choose debt before issuing new equity to satisfy its external funding needs. Cahyadi reveals the condition of information asymmetry and signaling problems as factors that lead to this theory being accepted as the modern capital markets point of view [17].

Frank and Goyal argue that this trade-off theory arose from the debate over the capital structure irrelevance theory advanced by Modigliani-Miller I [14]. The trade-off theory states the optimal debt ratio is determined based on the balance between the profit and loss from taking on debt. According to Myers a company is said to embrace the trade-off theory in determining its funding structure when management regulates the value of the firm's debt and moves toward a debt-to-equity ratio "target" [6]. The target to be achieved by companies that hold this view is a balance between the tax shield provided by debt versus the bankruptcy costs associated with debt. Ross, et.al show that a funding structure based on the trade-off theory would allow the management of the firm to calculate the balance between gains from the debt tax shield and the cost of debt, i.e., the cost of financial distress [5]. To achieve an optimal funding structure, debt costs should not exceed the tax benefits of the debt.

One factor that affects a company's funding decisions is the difficulties and obstacles that companies experience when they want to invest. Almeida and Campello state that companies with financial constraints are firms that face financing constraint costs such as agency costs, information asymmetry, and lack of asset security [9]. This causes a company to tend toward using internal funding for investment rather than external financing because the financing constraint cost causes external funding costs to be higher. In the same study, Almeida and Campello classify companies as facing financial constraints based on four aspects: dividend payout ratio, total assets, bond rating, and commercial paper ratings.

The company can be said to be free of financial constraints when the company has large amounts of assets, distributes large dividends, and has a strong public bond rating. Meanwhile, a company is said to be experiencing financial constraints when it has a small amount of assets, pays a small or no dividend, and has no bonds rating. For companies that are financially unconstrained, internal funding and external financing will be substitutes. This happens because of a negative relationship between the profitability of the company and the use of external funds [9]. The advantage of companies that are financially unconstrained is that they can access

external funds at a lower cost. One reason for this is a low information asymmetry among shareholders. Meanwhile, for companies experiencing financial constraints, internal funding and external financing will be complementary. This supports the relationship between investment decisions and funding decisions. For example, when a company that has financial constraints wishes to borrow, the amount of debt that can be supported depends on the amount of collateral that can be given to the bank or other lender. Companies in this category are likely to experience a great deal of information asymmetry, causing the cost of external financing to be more expensive. In this case, the pecking order theory applies.

III. Research Methodology

This study aims to determine the relationship between internal funding and external funding for companies in Indonesia that have and do not face financial constraints. The analysis was conducted based on the financial statements of public companies listed on the Indonesia Stock Exchange from 2010 to 2015. The dependent variables used are external funding and internal funding. External financing is represented by the amount of debt and equity on the company's balance sheet. Meanwhile, internal funding is represented by the amount of cash, inventories, and receivables owned by the company. The independent variables in this study are cashflow (measuring company profitability), Q, size, tangibility, debt-to-equity ratio, cash holdings, inventory, and fixed assets. All variables used in this study refer to research conducted by Almeida and Campello [9]. The study excludes companies in the financial sector, such as banks, insurers, securities firms and other financial institutions. The reason for excluding the finance sector is the significant difference in the capital structure in the financial sector versus that of non-financial companies. This research uses the purposive sampling method in selecting the research sample. The purposive sampling method determines the sample based on certain criteria and characteristics.

This research refers to Almeida and Campello. In that study, several models are tested to show the relationship between internal funding and external funding in constrained firms and unconstrained firms [9].

Cash Flow Sensitivity of External Financing: Baseline model. This model aims to test the sensitivity of external funding to corporate profitability, for both constrained firms and unconstrained firms. The research model used is as follows:

$$\boldsymbol{External\ financing_{i,t} = \alpha_1 Cashflow_{i,t} + \alpha_2 Q_{i,t} + \alpha_3 Size_{i,t} + \sum_i Firm_i + \sum_t Year_t + \epsilon_{i,t}}$$

The dependent variable in this model is external financing measured as the ratio of total debt issued to total equity issued. The independent variables in this model consist of: cash flow, used to measure profitability, Q, to measure investment opportunities, and company size.

The results of Almeida and Campello show that there is a negative relationship between internal funding and external funding [9]. This is evident from the value of the cash flow coefficient that measures the profitability of a negative company. The results of this study are also supported by the research of Johan, which proves that profitability negatively affect the capital structure [18].

Cash Flow Sensitivity of External Financing: Augmented regression model. Alternative research models to test external financing sensitivity can be obtained from the company's decision to issue equity and debt based on the amount of its current assets (cash, inventory, receivables) and gross plant, property, and equipment at the beginning of the year. The research model used is as follows:

$$\boldsymbol{External\ financing_{i,t} = \alpha_1 Cashflow_{i,t} + \alpha_2 Q_{i,t} + \alpha_3 Size_{i,t} + \alpha_4 Cash\ holding_{i,t-1} + \alpha_5 Inventory_{i,t-1} + \alpha_6 PPE_{i,t-1} + \alpha_7 Debt/Equity_{i,t-1} + \sum_i Firm_i + \sum_t Year_t + \epsilon_{i,t}}$$

The dependent variable in this model is external financing measured from the ratio of total debt issued to total equity issued. The independent variables consist of: cash flow, used to measure profitability, Q, to measure investment opportunities, company size, cash holding at beginning of year, inventory and accounts receivable at the beginning of the year, property, plant and equipment, and the debt/equity ratio at the beginning of the year. This model adds inventory, cash, PP&E, and debt/equity as factors that become part of internal funding. Companies that have large inventory and cash holding tend to reduce external funding and try to optimize the use of inventory and cash holding. Meanwhile, large PP&E ownership can be a guarantee used by companies to obtain external debt financing [9]. The debt / equity ratio is used to help a company determine whether or not it can support an increase in its debt.

Debt or Equity? The third research model aims to test the firm's profitability sensitivity with debt and equity separately. The dependent and independent variables in this research model refer to model ***Cash Flow Sensitivity of External Financing: Baseline***. The difference is that the dependent variable is tested separately between debt and equity. The formulas used are:

$$\boldsymbol{Debt\ financing_{i,t} = \alpha_1 Cashflow_{i,t} + \alpha_2 Q_{i,t} + \alpha_3 Size_{i,t} + \sum_i Firm_i + \sum_t Year_t + \epsilon_{i,t}}$$

$$\boldsymbol{Equity\ financing_{i,t} = \alpha_1 Cashflow_{i,t} + \alpha_2 Q_{i,t} + \alpha_3 Size_{i,t} + \sum_i Firm_i + \sum_t Year_t + \epsilon_{i,t}}$$

The first equation uses debt financing as the dependent variable, while the second equation uses equity financing as the dependent variable. Meanwhile, the independent variables in this model consist of: cash flow used to measure profitability, Q, to measure investment opportunities, and size.

As noted earlier, based on the pecking order theory, firms tend to choose debt financing in advance of choosing equity financing. The company's consideration is that debt has a lower risk than equity financing. Based on the results of Ignasius research shows that size and profitability have a

positive influence on capital structure [19]. Ignasius explains that this relationship occurs in accordance with the trade-off theory that states the company will increase its external financing to benefit from the taxes generated by the cost of debt, i.e., interest [19].

Cash Flow Sensitivity of External Financing: Credit Multiplier Model. This research model refers to the baseline model but adds a new proxy, tangibility. According to Almeida and Campello, tangibility is a proxy for corporate assets used as collateral for borrowing [9]. This type of guarantee is often a requirement of a debtor. The model is:

$$\boldsymbol{External\ financing_{i,t}} = \boldsymbol{\alpha_1 Cashflow_{i,t}} + \boldsymbol{\alpha_2 Q_{i,t}} + \boldsymbol{\alpha_3 Size_{i,t}} + \boldsymbol{\alpha_4 Tangibility_{i,t}} + \boldsymbol{\alpha_5}(\boldsymbol{Cashflow} \times \boldsymbol{Tangibility})_{i,t} + \sum_i \boldsymbol{Firm_i} + \sum_t \boldsymbol{Year_t} + \boldsymbol{\epsilon_{i,t}}$$

The dependent variable is external financing measured from the ratio of total net debt issuance and net total equity issuance. The independent variables in this model consist of: cash flow used to measure profitability, Q, to measure investment opportunities, firm size, tangibility used to measure the effect of collateral in the form of fixed asset to external funding, and the interaction between cash flow and tangibility.

This model adds tangibility component as one of the factors that determine management decision in determining funding source of the company. Almeida and Campello state that tangibility as measured by plant, property, and equipment is the component that can influence the lender to lend to the company [9]. PP&E owned by a company can be used as collateral to obtain external funding, especially debt. Sugiyanto's research shows that the ownership structure of the company's assets has a negative effect on the capital structure [10]. Companies tend to use asset ownership optimally to achieve the company's financial goals.

Internal* and *external financing. The final research model aims to examine the relationship between internal funding and external funding. The model used is:

$$\boldsymbol{Internal\ financing_{i,t}} = \boldsymbol{\alpha_1 Cashflow_{i,t}} + \boldsymbol{\alpha_2 Q_{i,t}} + \boldsymbol{\alpha_3 Size_{i,t}} + \sum_i \boldsymbol{Firm_i} + \sum_t \boldsymbol{Year_t} + \boldsymbol{\epsilon_{i,t}}$$

In this model, the dependent variable is internal financing that measures the internal funding needs of the firm. The independent variables in this model consist of: cash flow used to measure profitability, Q, to measure investment opportunities, and company size.

Almeida and Campello found that the greater the profit and sales of a company the more the company will save excess cash flow to fund the company's business [20]. The results of this study showed a complementary relationship between cash flow, Q and size with internal funding required by the company. The results of this study are also supported by research conducted by Abushammala and Sulaiman which shows that there is a positive relationship between profitability and cash holdings [21].

In our test, the research sample is divided into two categories, namely: unconstrained firms and constrained firms. Each category of the company is tested in accordance with the conceptual framework described above. Based on the description above, the hypotheses proposed in this study are as follows:

H1: Internal financing has a negative relationship to external financing in companies that do not have financial constraints

H2: Internal financing has a negative relationship to external funding in companies that have financial constraints

IV. RESULTS

The results of the research shown in Table I indicate that manufacturing companies as a whole consistently adhere to the pecking order theory. This can be seen from the coefficients of each variable. Cashflow variables, that illustrate the profitability of the company, have a negative relationship to external funding. The variable Q (investment opportunity) has a positive relationship to external funding. A company that has the opportunity to expand its business tends requires more funding. External financing (both debt and equity) can be an alternative for management. The size variable has a negative relationship to external funding. This shows that the larger the company as described by sales, the less external funding is needed to fund its operational and investment activities. The results are in line with Almeida and Campello [9], which suggests that profitability has a negative relationship with external funding and Q has a positive relationship to external funding. Meanwhile, the positive relationship of the size variable is in line with research conducted by Prameswara [1].

For constrained firms and unconstrained firms, the relationship of internal funding to external financing is substituted. This statement can be seen in Table I, which shows that of the three criteria for defining the financially constrained category, the firms have substitutionary relationships. Profit and firm size have a negative relationship to external funding, while investment opportunities have a positive relationship to external funding. This illustrates that the greater the profit and size of a company, the more the company tends to reduce external funding and use funding from internal sources. In contrast, the greater the opportunity of investment that is represented by the variable Q, the more the company needs additional funds. The results of this study are similar to those of Almeida and Campello which suggest that there is a substitutable relationship between internal funding and external financing; however, more sensitive relationships occur in companies that are not financially constrained [9].

The research model in this test adds four variables to represent the company's judgment in determining to use external funding. The four variables are cash holding, inventory, plant property and equipment (PPE), and debt/ equity ratio. This section examines the testing of all companies listed on the BEI and manufacturing companies listed on the BEI.

TABLE I. REGRESSION RESULT MODEL I

Dependent Variable	Independent Variables		
External Financing	Cashflow	Q	Size
All manufacture sample	−0.1226 ***	0.0120 ***	−0.0192 *
Payout Policy			
- Constrained Firm	−0.3227 ***	0.0310 *	0.0088
- Unconstrained Firm	−0.1652	−0.0008	−0.039 **
Firm Size			
- Constrained Firm	−0.2134 ***	0.0142 ***	−0.0757 ***
- Unconstrained Firm	−0.2940 ***	0.0068 **	−0.0068
Bonds Rating			
- Constrained Firm	−0.1084 **	0.0124 ***	−0.0035
- Unconstrained Firm	−0.4486 **	0.0307 ***	−0.0052

Tests of this research model use sample manufacturing companies listed on the BEI. The results of the research, shown in Table II, shows that cashflow (profit), size (sales), and cash holdings have a negative relationship with external funding. This indicates that manufacturing companies in Indonesia adhere to the pecking order theory in determining the capital structure of the company. Meanwhile, investment opportunity (Q) has a positive relationship with external funding. Manufacturing companies use more external financing to finance their investments. This is done by management considering the cost of debt versus the rate of return generated from the investment. In companies facing financial constraints, research results show that cashflow (profit), size (sales), and cash holdings have a negative relationship with external funding. This result means that companies prefer internal funding rather than external funding after considering the higher capital costs associated with agency costs, information asymmetry, and bankruptcy costs. Meanwhile, investment opportunity, Q, has a positive relationship with external funding. A company requires external funding to finance additional investments. Inventory, PPE, and debt/equity ratios have no relation to external funding. This implies that firms with financial constraints tend to embrace the pecking order theory as proposed by Myers and Majluf [15].

Internal financing in companies that are financially unconstrained has a substitution relationship with external funding. This is indicated by the cashflow (profit), size (sales), cash holding, PPE, and debt/equity ratios. The results of this study indicate that companies that are financially unconstrained and have sufficient internal funding will still choose to use internal funding rather than external funding.

The results of this study differ from research conducted by Dianti [11]. That study tested profitability, firm size, and growth rate on capital structure in property companies, showing that property firms tend to adhere to the trade-off theory. This happens because the company has a tax benefit from interest expense on real estate loans.

The research model in this section aims to prove there is a negative relationship between internal funding (cash flow, Q, and size), and external financing in the form of debt and equity. Tests conducted on manufacturing companies listed on the BEI Stock Exchange. Manufacturing companies are used because they have a capital structure and asset structure that are similar from one company to another. Tables III and Table IV, show that the pecking order theory is relevant in explaining the capital structure for manufacturing companies listed on the BEI. These companies prefer internal funding rather than external funding when internal sources of funds are sufficient. However, when companies need external financing, debt financing is preferred over equity financing. This is related to the relative costs incurred to obtain these source of funds.

Table III shows that manufacturing companies listed on the BEI also adhere to the pecking order theory. This is seen by the results of the cashflow variables on debt financing that has a coefficient of −0.1168. Companies with large profits tend to reduce their debt financing. The results also show a positive relationship between investment opportunities and debt financing. If the company has a large investment opportunity, it will need additional funding to finance its investment and debt is the primary choice. The results show consistent results for companies that are categorized as financially unconstrained and for those with financial constraints. All companies appear to be consistent with the pecking order theory in determining the capital structure.

The bigger the company's cash flow and size, the more the company will reduce its external funding. The greater the investment opportunity in the future, the more the company will use external funding as one of the funding sources. In addition, the results of this study prove that in companies experiencing financial constraints the substitution relationship between internal funding and debt financing is greater than for companies that do not experience financial constraints.

TABLE II. REGRESSION RESULT MODEL II

Dependent Variable	*Independent Variables*						
External Financing	*Cashflow*	*Q*	*Size*	*Cash Holding*	*Inventory*	*PPE*	*Debt/Equity*
All manufacture sample	-0,1158 **	0,0119 ***	-0,0203 *	-0,1605 ***	-0,0442	0,0011	-0,0008
Payout Policy							
- Constrained Firm	-0,3371 ***	0,0325 *	0,0106	0,0315	0,0810	-0,0066	-0,0010
- Unconstrained Firm	-0,1553	-0,0003	-0,0903 ***	-0,3078 ***	-0,0653	-0,0008	-0,0048
Firm Size							
- Constrained Firm	0,2184 ***	0,0143 ***	-0,0742 ***	-0,0851	-0,1726	-0,0142	0,0066
- Unconstrained Firm	-0,2783 ***	0,0043	-0,0149 ***	-0,2100 ***	-0,0245	-0,0836 ***	-0,0114 ***
Bonds Rating							
- Constrained Firm	-0,1082 ***	0,0123 ***	-0,0046	-0,1804 ***	-0,0419	-0,0130	-0,0008
- Unconstrained Firm	-0,8824 ***	0,0031	-0,1236 ***	0,1052	0,3206	0,0123	-0,0488 *

TABLE III. REGRESSION RESULTS MODEL III

Dependent Variable	Independent variables		
Debt Financing	Cashflow	Q	Size
All manufacture sample	−0,1168 *	0,0115 ***	−0,0088
Payout policy			
- Constrained Firm	−0,1871 *	0,0341	−0,0306
- Unconstrained firm	−0,2163 *	0,0002	−0,0325
Firm size			
- Constrained Firm	−0,5064 ***	0,0135 ***	−0,0731 ***
- Unconstrained firm	−0,4640 ***	0,0106 ***	0,0063
Bonds rating			
- Constrained Firm	−0,1980 ***	0,0118 ***	−0,0359 *
- Unconstrained firm	−0,5010 ***	0,0323 ***	−0,0075

TABLE IV. REGRESSION RESULTS MODEL III

Dependent Variable	Independent variables		
Equity financing	Cashflow	Q	Size
All manufacture sample	−0,0586 ***	0,0006	−0,0011
Payout policy			
- Constrained firm	−0,3635 ***	0,0004	−0,0458 ***
- Unconstrained firm	−0,0264	−0,0004	−0,0200 *
Firm size			
- Constrained firm	0,0666	0,0005	−0,0370 ***
- Unconstrained firm	0,0258	−0,0004	−0,0056 *
Bonds rating			
- Constrained firm	−0,0606 ***	0,0006	−0,0008
- Unconstrained firm	0,0288	−0,0019	−0,0005

With limited access to debt financing, the company's costs will be much higher than the tax advantages of the debt. The substitution relationship between profit and equity financing occurs in manufacturing companies. This relationship occurs because companies that have high profit do not require equity financing to finance operational activities and investment opportunities. This research is consistent with the findings of Almeida and Campello [9].

The results of research on companies that are financially unconstrained and those that have financial constraints also provides consistent results. These companies adhere to the pecking order theory in determining optimal capital structure. The bigger the company's profits, the less equity funding is needed to fund the business. Likewise with sales, the bigger the sales the less equity funding is needed to fund the business. The results of this study are in accordance with pecking order theory. The results of show that manufacturing companies listed on the BEI prefer debt funding compared to equity financing if the company requires external funding, as shown by the regression results where the coefficient value for debt funding is more negative than for equity financing.

This model involves the tangibility variable to consider the impact of assets owned by the company on external funding. One of the factors that a lender (bank) uses in deciding to make a loan is the strength of the guarantee given by the debtor to the creditor. This guarantee can be in the form of a building, property, and machinery. The hypothesis proposed in this research is a positive relationship between tangibility with external funding.

The results based on manufacturing companies listed on the BEI using this model are similar to the results of research on previous models. Cash flow and size have a negative relationship with external funding. Investment opportunity has a positive relationship with external funding. The results of this study show that asset ownership (tangibility) has no effect for companies in accessing external funding. The results of this study are consistent with research conducted by Almeida and Campello which also shows that other independent variables have a consistent relationship to external funding [9].

Cashflow and tangibility variables have a negative relationship with external funding on manufacturing companies listed on the BEI. The results of this study indicate that when the combination of profit and asset ownership is high the company does not require external funding. The company will seek to maximize the use of assets in its operational activities to generate profits and large net cash flows. The results of this study differ from the research conducted by Almeida and Campello which showed positive results on internal funding [9]. This shows that manufacturing companies in Indonesia tend to adhere to the pecking order theory in their funding decisions. When manufacturing companies are divided into categories based on financial constraints, the results shown in Table V are consistent with respect to the variables cash flow, Q, and size. Here, tangibility has a positive relationship to external funding. This relationship occurs because ownership of assets (buildings, property, and machinery) can be used as collateral for the company in obtaining external funding. However, the combination of cashflow and tangibility has no relation to external funding. The results of Almeida and Campello showed that tangibility has a positive relationship with external funding [9].

The fifth model aims to determine the relationship between internal funding and external funding. Testing is done using the variables of cash flow, Q, and size to predict the change in working capital. Almeida and Campello revealed a complementary relationship between internal funding and external financing in companies facing financial constraints [9]. This complementary relationship occurs because of the company's tendency to store surplus cash flow as internal funds.

The results of the research in Table VI proves that profit has a positive relationship with internal funding. The greater the profit generated by the company the greater the company's internal funding. These results applies to companies with and without financial constraints. As expressed by Almeida and Campello, most companies, especially those experiencing financial constraints, tend to retain cash flow surpluses as a cash holding [9]. This statement also applies to manufacturing companies listed on the BEI.

TABLE V. REGRESSION RESULTS MODEL IV

Dependent Variable	*Independent Variables*				
External Financing	*Cashflow*	*Q*	*Size*	*Tangibility*	*Cashflow x Tangibility*
All manufacture sample	-0,0992 **	0,0122***	-0,0184 *	0,0719	-0,0294 *
Payout Policy					
- Constrained Firm	-0,3254 ***	0,0313 *	0,0071	0,0553	0,0124
- Unconstrained Firm	-0,1902 *	-0,0011	-0,0398 *	-0,0946	0,0987
Firm Size					
- Constrained Firm	0,2476 **	0,0143 ***	-0,0911 ***	0,0216 ***	-0,0135
- Unconstrained Firm	-0,2881 **	0,0063 *	-0,0021	-0,0549	-0,0716
Bonds Rating					
- Constrained Firm	-0,0737	0,0122 ***	-0,0205 *	-0,0308	-0,0112
- Unconstrained Firm	-0,9990 **	0,0337	-0,1792 *	0,0883 ***	-0,0256

The results of this study are in accordance with research conducted by Abushammala and Sulaiman [21]. Investment opportunity has a negative relationship with internal funding, as shown in Table I, which shows that when a company has an investment opportunity the company will increase its external funding. Companies use more external funds to fund new investment opportunities. Management uses external funds to take advantage of the tax shield from debt. Size as measured by sales has no relation to the internal funding of a manufacturing company. This is understandable, as sales alone do not determine a cash flow surplus.

TABLE VI. REGRESSION RESULTS MODEL V

Dependent Variable	Independent variables		
Internal financing	Cashflow	Q	Size
All manufacture sample	0.2580 ***	−0.0144 ***	0.0035
Payout policy			
- Constrained Firm	0.1980 **	0.0173	0.0006
- Unconstrained firm	0.3078 *	−0.0112 **	0.0451
Firm size			
- Constrained Firm	0.2374 ***	−0.0141 ***	0.0061
- Unconstrained firm	0.0988	−0.0007	0.0021
Bonds rating			
- Constrained Firm	0.2478 ***	−0.0105 ***	0.0005
- Unconstrained firm	0.1857	0.0095	0.0013

V. CONCLUSION

This study aims to determine the relationship between internal funding to external funding for manufacturing companies listed on the BEI from 2010 to 2015. Research using secondary data and panel data in regression testing provided the following results:

a. Internal funding and external financing have a negative or substitutional relationship for companies facing financial constraints. This happens because companies tend to use internal funds to optimal limits, then the rely on external funds. The results of this study show that companies in Indonesia tend to adhere to the pecking order theory. The limitations of firms in this category make the cost of external financing more expensive than the potential profits to be generated.

b. Internal and external financing have a negative or substitutionary relationship for companies that are not financially constrained. Similar to companies facing financial constraints, companies in this category tend to use internal funds before seeking external funding. Companies prefer to use internal funding because of the risk of bankruptcy that will be faced if they continue to increase the use of external funds, through debt financing. The results of this study shows that companies in Indonesia tend to adhere to the pecking order theory.

The results of the research in this study have several implications, as follows:

a. For investors: The results of this study can help investors to understand the funding behavior of a company based on the financial constraints it faces. Thus, the results of this study can help investors in making investment decisions.

b. For companies: The results of this study can help a company's management in classifying the company as financially unconstrained or financially constrained, so that management can decide the optimal funding structure.

c. For researchers: These results contribute to the literature of the funding structure for companies experiencing and not experiencing financial constraints.

This study has several limitations that can be used as a suggestion and reference for further research. Here are some limitations and suggestions for further research:

1). The sample used in this study does not include companies in the financial sector because of the differences in financial structures between financial companies and those in other sectors. Future research could use a sample of companies engaged in the financial sector for comparison.

2). This study used the feasible generalized least square method. Future research is expected to use generalized method of moment method and seemingly unrelated regression to obtain more accurate result.

3). The period of this study is only five years. Further research is expected to extend the period to at least 10 years to obtain more reliable results.

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