

The Determinants of Capital Structure: Evidence from Malaysian Companies

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Abstract—The aim of this study is to investigate the determinants of capital structure for Malaysian manufacturing companies. The studied subjects were 174 Malaysia manufacturing companies listed on Bursa Malaysia from year 2011 to year 2014. Firm fixed-effect with robust standard was used in data analysis to address the potential heterogeneity and endogeneity that arise from panel data. The analysis shows that firm profitability and non-debt tax shield are negatively related to firm leverage. On the other hand, several corporate governance mechanisms, namely, ownership concentration, separation of CEO-chairs, board independence, are not related to firm leverage. Liquidity, firm size and asset structure are also not related to firm leverage of manufacturing firms.

Keywords— *Capital structure; firm leverage; corporate governance; manufacturing firms; Malaysia*

1. Introduction

The research on capital structure has been gaining traction in finance literature since the conceptualization of capital structure by Modigliani and Miller since 1958. In general, capital structure refers to the combination of debt and equity, which is to finance firm's long term asset [1]. Capital structure represents an important long-term decision made by the management team to maximize value of firm [2]. Firms' capital structure is closely linked to its financial performance,

such as returns of assets or equity [3].

Prior literature largely suggest that capital structure can affect the firms' operation and profitability [4]. Many studies on the determinants of capital structure are conducted but the findings are generally mixed. That is, there is consistent findings on the determinants of capital structure choice. In this regard, the institutional context or single country context play an important role to explain the mixed findings. An interesting study by Krishnan and Moyer [5] found out that capital structure can be depends on the governance variables. Meanwhile, current literature also points out that capital structure choice is related to firm investment, the cost involves and the expected returns. This indicates that determinants of capital structure may include corporate governance and financial variables.

In the case of manufacturing firms, which reside in a highly competitive business environment, the capital choice could be unique due to its nature high firm investment in technological assets. The understudied capital choice in manufacturing firms in emerging economies is thus a very interesting research gap to be filled. Thus, this study intends to identify the determinants that affect capital structure of Malaysian manufacturing firms.

2. Theoretical Frameworks

2.1 Information Asymmetry

Information asymmetry happens when a company's internal information, i.e., the financial and risk status is not known outsiders [6]. Information asymmetry occurs when one party is positioned to have better information than the others [7]. If the principal does not have complete knowledge of what the agent's actions are, this will allow the agent to pursue their own interests without detection. There are two determinations for the level of information asymmetry, which includes the extent to which basic common knowledge exists between participants and the level of coordination or communication among team members.

Entrepreneurs have different perceived information asymmetry costs that vary with firm size [8]. Some may think it is value for it, some may not, and this is affected by how the information transfers. This situation happens especially when investors of a company do not know everything about a company and the information reveal by the company is limited, this will affect the results on estimation of growth opportunities by investors. Hence, outside investors often cannot see clearly the internal function of a company [9]. The greater the information asymmetry, the more uncertain investors will be regarding growth predictions [8]. As a result, investor will expect for higher premium for the risk that they risking. When the premium is too high and the company does not have ability to pay it, firms will lower the investment. Firms with high levels of intangible assets is also difficult to be valued and the information asymmetry will be larger. Consequently, there is less investor willing to invest due to the undisclosed information. That means the investment for the company decline, and it affects the growth rates of the company. This is because when a company intend to borrow money, the company will be publicly observed by the lender [10]. The financing would be successful only if lender also believes the company can pay back the loans.

2.2 Agency Theory

Jensen and Meckling [11] define the agency relation as a contract when the principal engages another parties, which known as agents, to perform firm management. Principals will delegate decision making power in firms to the agents. Agency costs incurred due to conflicts of interest between principals and agents after power and control are given to the agents to control firm's action [12]. Agency theory can also be used to explain firm's capital structure which the firm try to minimize the cost with the separation of ownership and control [13]. That is, lender's monitoring and controlling the firm's actions also consider as agency cost [11]. When managers possess more information of the firm in terms of future prospect than investors, there will be additional agency cost in the capital structure.

Agency theory suggest two type of conflicts: (1) conflicts between managers and shareholders and (2) conflicts between debt holders and shareholders; the latter is known as agency costs of debt [11]. The first type of conflicts occur when the managers make decision based on own preferences, not profit maximization, this will only maximizes manager's own wealth (Berger and Di Patti, 2006; Nikolaos et al., 2007). The second type of conflicts occur when shareholders' priority their interests and ignore debtholders' interest in term of honoring the loan payment.

3. Hypotheses Development

Trade-off theory suggest profitability and capital structure have positive relationship as higher profitability will encourage the use of debt to get the tax shield benefits [12]. However, based on pecking order theory, it suggests a negative relationship between profitability and capital structure as profitability is source of internal funds. We submitted the following hypothesis for further testing.

H1: Profitability has a significant relation to firm leverage.

When a firm size is large, then it may bring benefits to the company [4]. Larger firms tend be more diversified and according to the trade-off

theory. Thus, larger firms have less probability to go bankruptcy and have lower bankruptcy cost, lower agency cost. This is because it has less cash flow and will borrow more. A firm may also reduce its transaction cost when firm size is large as it has effect on its capital structure [14]. As the size of firm larger, it should able to reduce the information asymmetry, risk, cost reduction and it open up external finances. Hence, it can increase debt levels. As the firm size gets larger, it will have larger debt; when the debt is larger, it can act as debt finance to reduce the cost in getting capital. Thus, firm size and debt level may have positive relationship. Thus:

H2: Firm size has a positive relation to firm leverage.

Asset structure is one of the determinants in capital structure due to information asymmetry [4]. Based on pecking order theory, asset is used as collateral and asset will decrease the information asymmetry effect on the firm. In order to know the asset structure, a formula which fixed assets over total assets is used [15]. Some researchers like Myers and Majluf [16] and Friend and Lang [17] calculate asset structure by using intangible assets over the fixed assets. Tangible assets can be pledged as collateral and thus the larger share of tangible assets in the overall asset structure, the higher the leverage.

H3: Asset structure has a positive relation to firm leverage.

Non-debt tax shield is the substitute of the tax shields on debt financing [18]. Hence, when a firm has higher non-debt tax shields, it will have less debt. When a firm reports its income as low or negative, the tax shield benefits will be reduced. Hence, the firm need to pay for heavy interest payment [12]. Thus:

H4: Non-debt tax benefits have a negative relation to firm leverage.

According to Nadeem Ahmed and Zongjun [12], there is a positive relationship between liquidity and leverage as trade-off

theory state that firm with high liquidity ratio could borrow more. However, pecking theory says that when a firm have greater liquidity, it will prefer to generate fund internally compare with externally. Hence, there is a negative relationship between liquidity and leverage. Thus:

H5: Liquidity has a positive relation firm leverage.

Ownership concentration is used to define the percentages of voting rights by shareholders. The shareholders could be included directors, firm's officers, family members and individuals [19]. In ownership concentrations, the voting right is held by largest shareholders. To achieve effective control on the firms, controlling shareholders have to concentrate on ownership to influence the long-term strategies of the firm. This situation can resolve the differences of interest between shareholders and firm management. The concentration ownership able to provide powerful incentives to major shareholders, and they will be the controlling shareholders, but when the interested are not divided perfectly, it also may cause conflicts between the controlling shareholders and minority shareholders. Thus, it can be expected that a high ownership concentrated structure and lead to high level of debts because it can increase the return on equity holders, especially the largest shareholders.

H6: Ownership concentration has a positive relation to firm leverage.

Board independence indicates the ratio of independent directors to total board memberships. A firm is delegating the monitoring services to independent professional to ensure the firm's corporate disclosure at a quality level. A people who are lack of independence could not perform close monitoring. The proportion of outside representatives of shareholders on board will have influence on the de facto powers of owner-managers [20]. Board independence is generally effective to monitor top management [21]. If good board governance exists, the boards should opt an optimal capital structure to increase firm returns. Thus, it can be expected good governance boards will opt a high level of debts in the firm to increase higher return on shareholders.

H7: Board independence has a positive relation to

firm leverage.

It is possible that the chief executive officer (CEO) is also the chair of the board of director for a firm [21]. The separation of CEO-chairs means that the CEO is not serve as board chairperson [22]. According to agency theory, if the CEO is also the chair of board of director, it will bring strong individual power base and weaken the board independence. The separation of CEO-chairs can be considered a form of good board governance. Thus, it can be expected separation of CEO-chairs will opt a high level of debts in the firm to increase higher return on shareholders.

H8: Separation of CEO-chairs has a positive relation to firm leverage.

4. Methods

The data for are 184 Malaysian manufacturing companies are collected between year 2011 to 2014. All the data is collected from annual reports published in website of Bursa Malaysia and financial data from DataStream. After the data screening, there are 174 companies to be used in this study, which contributes to 94.57% of valid sample. The research model is shown as below whereas the table 1 explains the measures of variables.

$$\text{Cap. St} = \beta_0 + \beta_1 \text{owncon1} + \beta_2 \text{sCEO} + \beta_3 \text{BoaID} + \beta_4 \text{Pro} + \beta_5 \text{Fsize} + \beta_6 \text{Asset.s} + \beta_7 \text{ndts} + \beta_8 \text{Liq} + \epsilon_0$$

Table 1. Measure

Variable (Notation)	Measure
Capital Structure (Cap. St)	Total Debt / Total Assets
Ownership concentration (owncon1)	The percentages of voting rights by the largest shareholders
Separation of CEO-chairs (sCEO)	If CEO is not serve as board chairperson, the value will be ‘1’ and if CEO is serve as board chairman, the value will be ‘0’
Board independence	Ratio of independent directors to total board memberships

(BoaID)	
Profitability (Pro)	Pretax income / Total Asset
Firm size (Fsize)	Net Sales
Asset structure (Asset.s)	Fixed Asset (Property, plant, equipment) / Total Asset
Non-debt tax shield (ndts)	Interest Expenses on Debt
Liquidity (liq)	Current Asset / Current Liabilities

5. Findings and Discussion

In this study, we used firm-fixed effect regression with robust standard errors to perform causal analysis of determinants on capital structure. Firm-fixed effect not only eliminate heterogeneity in the panel data but also mitigate the potential endogeneity issue. Table 2 shows the regression estimation results for the firm’s capital structure.

Table 2. Regression results

Load time	Coefficient (Z Value)
Ownership Concentration	-0.0004 (-1.27)
Separation of CEO-Chairs	0.0126 (0.94)
Board Independence	0.0104 (0.26)
Profitability	-0.0719*** (-2.97)
Firm Size	0.0000 (-0.44)
Asset Structure	0.0271** (2.41)
Non-debt Tax Shield	0.0000*** (3.78)
Liquidity ratio	-0.0019 (-1.69)
Constant	0.0804 (3.23)

Note: **/** denotes significant at 0.05 / 0.01 level

It is important to note that firm profitability has a negative and significant impact on the firm leverage. This result is consistent with study of pecking order theory [12]. It supports that a firm prefer to generate funds internally compare with debt and external financing. It also consistent with several studies[14, 23], which they found there is negative relationship between profitability and

capital structure. These findings imply that an increase in profitability is associated with a decrease in capital structure. On the other hand, the results of non-debt tax benefits have a positive relation to capital structure but the effect is marginal. It seems that larger non-debt tax shield is not an important criterion for firms' capital structure decisions. Liquidity ratio is negatively related to capital structure which is consistent with pecking order theory. That is, if a firm have lower liquidity, it will prefer to generate fund externally through borrowing. Finally, asset structure was found to have a positive impact on capital structure. This supports the pecking order theory that larger share of tangible assets in the overall asset structure will result in higher leverage.

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