

## Pecking Order Theory: Evidence from Malaysia and Thailand Food and Beverages Industry

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### Abstract

Capital structure decision is crucial for a firm to ensure credit is not a threat to a firm, instead it acts as a boosting factor for the company growth and survival. Companies commonly refer to the two competing theory, the pecking order theory and the trade-off theory in determining their optimal capital structure. The comparative study is to find evidence of the application of the pecking order theory in food and beverages industry in two countries, Malaysia and Thailand. The paper includes five explanatory variables in determining companies leverage; which are profitability, asset tangibility, growth opportunity, firm size, and liquidity level. Employing the unbalanced panel data, the study estimates the random effect model for Malaysia and the fixed effect model for Thailand. The study covers ten (10) years period from 2004 to 2013 of 37 Malaysian F&B companies and 38 Thailand F&B companies, all are publicly listed in the Bursa Malaysia and the Stock Exchange of Thailand respectively. The results find evidences of the pecking order theory application in both countries. Except for asset tangibility and growth opportunity, findings for Malaysia and Thailand are relatively similar.

Keywords: Pecking Order Theory, Trade-off Theory, Food and Beverages

### Introduction

Firms should have their own target capital structure. Capital structure can be defined as a combination of debt, equity and other sources that are used to finance business operation. Hence, a firm should have an optimal capital structure that would maximize the firm value. Abor (2005) documents capital structure choices that will not affect the firm value under perfect condition market. Md-Yusuf et al.(2013) argue that optimal capital structure should have lowest possible weighted cost of capital (WACC) and having a favorable target capital structure.

Many previous studies investigate on the determinants of capital structure in multi-sectors such as construction, industrial and other sectors but this research aims to look the differences between food and beverages (F&B) companies in Malaysia and Thailand

whether both countries share the same factor that influence the capital structure decision. The study uses dominant possible factors in determining capital structure which are profitability, asset tangibility, firm size, growth opportunity, and liquidity. Dutta (2013) states that F&B industry involve in import and export activities to meet demand in the market. Thailand is a major food processing country due to popular tourist destination (Jong, Verbeek, & Verwijmeren, 2010). Meanwhile, recently Malaysia is focusing to build halal hub which serves as the gateway for Muslim in the world (Chen & Chen, 2011). By the end of the paper, the study investigates and identifies whether F&B industry in Malaysia and Thailand follow the pecking order theory (or the competing theory) in determining their capital structure.

### Review of the Literature

*Capital structure theories*

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In order to design optimal capital structure, two major theories can be used either the trade-off theory or the pecking order theory for firms financing decision. Companies that follow the pecking order theory will give a priority to use internal funds for their financing option, followed by debt financing and issuing equity as a last resort (Md-Yusuf, et al., 2013). Jibrán et al. (2012) state profitable firms are less levered than non-profitable firms. Firms with higher profit tend to use less debt. The trade-off theory set a target debt to firm value. Ting and Lean (2011) explain based on this theory, profitable companies prefer to use debt financing compare to equity financing to exploit tax benefits through the interest tax shield. On the other hand, high debt level force to a financial distress. This is due to company incapability to meet their debt obligations.

#### *Determinants of capital structure*

Variety studies from many countries discuss on the determinants of capital structure in different sector or industry. Among others, Md-Yusuf et al. (2013) focus on electrical and electronic manufacturing, Baharuddin et al. (2011) highlight on construction, Wahab et al. (2012) investigate Malaysian property developer. Ting and Lean (2011) conduct a comparative study between government linked companies (GLCs) and non-government linked companies (NGLCs) in Malaysia. Deesomsak, Paudyal et al. (2004) documents that managerial decision on capital structure may varies across countries because it has a different corporate governance, legal framework and institutional environment of the countries in which the firm is operates. In addition, (Deesomsak, et al., 2004) states Malaysia and Thailand consider countries with weaker investors right, therefore it may force to use more internally generated fund as compare to external fund likely to be pricey. The study, test the determinants of capital structure of F&B in Malaysia and Thailand. The five variables are profitability, asset tangibility, growth opportunity, firm size, and liquidity. Chosen variable is based on references to major capital structure theories of pecking order theory and trade-off theory.

Paydar and Bardai(2012) state leverage ratio as an indicator to assess a firm's capital structure. Many researchers use financial ratio as proxy to capital structure, such as total debt to total asset ratio

\*(Baharuddin, et al., 2011; Gwatidzo, 2012; Md-Yusuf, et al., 2013). Other than that, some researcher split current and long-term debt to proxy capital structure (Saarani & Shahadan, 2013). Hence, the paper uses debt ratio to proxy capital structure decision. It is suitable to use leverage ratio or total debt ratio as a proxy of capital structure.

Profitability is one applause determinant that significantly influences the capital structure of the company. Based on the trade-off theory, there are positive correlation between profitability and leverage (Vätavu, 2012). Highly profitable company have greater tendency to borrow from financial institutions to take advantage of the tax deductible incentive. (Kariuki & Kamau, 2014) states that profitable firm easier to get loan from the creditors. Meanwhile, pecking order theory suggests that profitability and leverage has a negative relationship (Ahmed Sheikh & Wang, 2011; Matemilola, Ahmad, Kareem, Mautin, & Sakiru, 2015). This theory suggests that firm should use internal financing, followed by debt and equity issuance.

Asset tangibility is an important criterion for capital decision due to the collateral requirement for debt. In addition, tangible asset shows the stability of the company. Md-Yusuf et al. (2013) state that lower tangible asset might leads to higher risk of bankruptcy. (Deesomsak, et al., 2004) states insignificant effect of tangibility due to tight family held and concentrated ownership as well as the close relationship of firms with their lenders. On top of that, the relatively high level of government ownership can also affect the result. Trade-off theory recommends positive relationship because fixed asset can be collateral for debt financing (Wahab, et al., 2012). In addition on this issue, firms in the countries that have more corrupt tend to use less equity and more debt, mainly short-term debt\*(Fan, Titman, & Twite, 2012). Meanwhile, many studies document pecking order theory has negative relationship between asset tangibility and leverage (Ahmed Sheikh & Wang, 2011; Ting & Lean, 2011b). This theory assume that company with more tangible asset will be less affected from asymmetric information problems and reduces agency cost (San & Heng, 2011).

In capital structure determinants, growth opportunity is measured by many variables. Among others, researcher use sales growth, assets growth and intangible asset

composition. Based on the trade-off theory, company with greater future growth opportunity holds more intangible asset has less borrowing due to limited access to the debt market. This theory predicts negative relationship between leverage and growth opportunity where the more the intangible assets, cause to lower leverage (Md-Yusuf, et al., 2013; Suhaila, Mahmood, & Mansor, 2008). In contrast, the pecking order theory has a positive relationship between growth opportunity and leverage (Dutta, 2013; Kariuki & Kamau, 2014b). Based on Matemilola et al. (2015), if a company fully depends on internal financing, the growth opportunities may be restricted. The company has opportunities to grow by maintaining low level of debt by issuing equity. Thus, align with pecking order theory, greater growth opportunity contribute to higher external borrowing.

Size of the company is one of the factors that affect capital structure determination. Mixed findings on the relationship between the two variables is due to different sectors and industries analysis. (Paydar, 2012) document insignificant relation can attribute to industry and period effect. For example period effect can change the result of study, if the study makes by consider pre and post of financial crisis. Meanwhile for industry effect when the study tests on construction companies therefore this company are heavily dependent on debt financing (Baharuddin, 2011). Based on trade-off theory there are positive relationship between firm size and leverage. This theory predicts that larger firms have a higher debt capability and induce to higher leverage for the company (Md-Yusuf, et al., 2013). Meanwhile, pecking order theory has a negative relationship with leverage due to similar argument as the asset tangibility. Larger firms are less affected from the asymmetric information issue, thus have lower leverage. Inter alia, Ab Razak and Rosli (2014) and Wahab et al. (2012) report negative significant relationship between firm size and leverage. Deesomsak, et al (2004) state that where firms receive government support and thus face less risk of financial distress whatever the size of the firm.

Mat Kila and Wan Mansor (2008) state the relationship between liquidity and capital structure has a significant impact on debt ratio. The trade-off theory suggests companies with higher liquidity tend to borrow more due to greater capability to meet debt obligation on time. This theory predicts that liquidity and leverage

has a positive relationship. Opposite to the trade-off theory, the pecking order theory predicts liquidity and leverage has a negative relationship (Ahmed Sheikh & Wang, 2011; Alipour, Mohammadi, & Derakhshan, 2015; Saarani & Shahadan, 2013). This theory suggests company with a higher liquidity level have more flexibility to utilise internal financing rather than using debt financing. Ahmed Sheikh & Wang (2011) states that has a negative relationship between leverage and liquidity due to firms that has excessive liquidity maintained. This will encourage managers to consume more than the optimal level of perquisites.

**Data analysis and results**

The paper is focusing on the application of pecking order theory of food and beverages (F&B) sector under manufacturing industry in Malaysia and Thailand. Using unbalanced panel data, the study covers ten (10) years period from 2004 to 2013. The sample comprises of 37 companies and 38 companies for Malaysian and Thailand F&B companies respectively. The study aims to identify, investigate and compare the practice of capital structure decision in the two countries. The data include the five possible determinants that influence capital structure decision in Malaysian and Thailand F&B companies. The variables are profitability, asset tangibility, growth opportunity, firm size, and liquidity level. All data were obtained from the Osiris database by Bureau van Dijk. Table 1 provides a list with proxy and definitions of the capital structure and the explanatory variables used in the model.

Table 1: Variables Definitions

Variables	Proxy	Definition
<i>Dependent variable:</i>		
Leverage	Debt ratio	Total debts to total assets
<i>Explanatory variables:</i>		
Profitability	Return on average assets	Earnings before interest and taxes to average total assets
Asset tangibility	Asset tangibility ratio	Fixed assets to total assets
Growth opportunity	Intangible asset ratio	Intangible fixed assets to total

Firm size	Total assets	assets Natural logarithm of total assets
Liquidity	Current ratio	Current assets to current liabilities

Using Statistic/Data Analysis (Stata) software application version 12 the study employs random effect model (REM) for Malaysian data and fixed effect model (FEM) for Thailand. Note that Breusch-Pagan Lagrange Multiplier test is statistically significant for Malaysian sample while Hausman test is statistically significant for Thailand sample.

The panel data GLS estimation for Malaysia and Thailand is presented in Eq. (1) and Eq. (2) respectively:

$$LEV_{it} = \delta_0 + \delta_1 PRO_{it} + \delta_2 TAN_{it} + \delta_3 GRW_{it} + \delta_4 SIZE_{it} + \delta_5 LIQ_{it} + \omega_{it} \quad (1)$$

$$LEV_{it} = \beta_0 + \beta_1 PRO_{it} + \beta_2 TAN_{it} + \beta_3 GRW_{it} + \beta_4 SIZE_{it} + \beta_5 LIQ_{it} + \epsilon_{it} \quad (2)$$

Where, *LEV* is the interest variables while *PRO*, *TAN*, *GRW*, *SIZE*, and *LIQ* representing profitability, asset tangibility, growth opportunity, firm size, and liquidity level respectively.

The paper is to investigate factors that influence capital structure decision followed by the conclusion either F&B companies in Malaysia and Thailand is closer to the pecking order theory of more leaning to the competing theory such as the trade-off theory. In achieving the objectives, the study specifies the following hypotheses:

H<sub>1</sub>: There is a significant relationship between profitability and leverage in Malaysian F&B companies.

H<sub>2</sub>: There is a significant relationship between asset tangibility and leverage in Malaysian F&B companies.

H<sub>3</sub>: There is a significant relationship between growth opportunity and leverage in Malaysian F&B companies.

H<sub>4</sub>: There is a significant relationship between firm size and leverage in Malaysian F&B companies.

H<sub>5</sub>: There is a significant relationship between liquidity and leverage in Malaysian F&B companies.

H<sub>6</sub>: There is a significant relationship between profitability and leverage in Thailand F&B companies.

H<sub>7</sub>: There is a significant relationship between asset tangibility and leverage in Thailand F&B companies.

H<sub>8</sub>: There is a significant relationship between growth opportunity and leverage in Thailand F&B companies.

H<sub>9</sub>: There is a significant relationship between firm size and leverage in Thailand F&B companies.

H<sub>10</sub>: There is a significant relationship between liquidity and leverage in Thailand F&B companies.

### Discussions

Table 2 presents the GLS estimation of our model. The results can be summarized as in Eq. (3) and Eq. (4) for Malaysia and Thailand respectively:

$$LEV_{it} = 0.75 - 0.39PRO_{it} - 0.29TAN_{it} - 0.46GRW_{it} - 0.005SIZE_{it} - 0.03LIQ_{it} \quad (3)$$

$$LEV_{it} = 0.80 - 0.31PRO_{it} + 0.22TAN_{it} + 0.46GRW_{it} - 0.03SIZE_{it} - 0.06LIQ_{it} \quad (4)$$

Table 2: Panel Data Estimation for Malaysia and Thailand

	REM	FEM
	Malaysia	Thailand
	Coefficient	Coefficient
Profitability	-0.39*** (-8.39)	-0.31*** (-2.66)
Asset tangibility	-0.29*** (-3.31)	0.22 (1.50)
Growth	-0.46*** (-3.00)	0.46 (1.36)
Firm size	-0.005 (-0.31)	-0.03 (-0.73)
Liquidity	-0.03*** (-8.70)	-0.06*** (-6.83)
Constant	0.75 (4.12)	0.80 (1.84)
Number of obs.	261	239

Number of groups	37	38
R-squared	0.3623	0.3082
	(overall)	(within)
Wald chi2 (5)	185.69	
Prob> chi2	0.0000	
F(5,196)		17.46
Prob> F		0.0000

Notes: Number in parenthesis represents the z-value.  
 \*\*\*z-value is significant at 1%, \*\*z-value is significant at 5%,  
 \*z-value is significant at 10%.

Follows to pecking order theory, companies are expected to have negative relationship between growth opportunities and capital structure decision. Meanwhile, all other variables should be negatively related with capital structure decision.

The panel data estimations reveal profitability is negatively associated and statistically significant with leverage for F&B companies in Malaysia and Thailand. Under pecking order theory, companies prefer internal financing rather than the external financing, debt and equity. Moreover, profitable company is likely to have greater retained earnings and less dependence on external financing. The study implies F&B companies in Malaysia and Thailand have lower external financing with higher profitability. The results is consistent with the pecking order theory (Akinlo, 2011; Kariuki & Kamau, 2014b).

The study managed to reject the null hypothesis for asset tangibility for Malaysia but fail to do the same for Thailand F&B industry. The result indicates there is negative significant relationship between asset tangibility and leverage in Malaysian F&B industry. The finding discovers, Malaysian F&B companies do not rely on tangible asset (collateral) to obtain external financing. The result support the pecking order theory as documented by earlier studies such as Md-Yusuf et al. (2013) and Razak(2014). While the result is leaning towards the trade-off theory (positive relationship), asset tangibility is statistically insignificant to capital structure decision for F&B industry in Thailand.

Under pecking order theory, growth opportunity is expected to have positive association with leverage. Albeit the study fail to reject the null for Thailand, but the positive relationship between growth and leverage support the pecking order theory, where the higher the growth opportunities for a firm leads to higher debt financing due to exhausted internal financing (Dutta, 2013; Saarani & Shahadan, 2013). On the other hand,

the estimation finds significant relationship between growth and leverage in Malaysian F&B companies. The negative relationship is aligned to the trade-off theory where the greater growth opportunities, the lower the external financing due to stronger incentive to avoid underinvestment and asset substitution.

There are similar estimation results for size association and leverage in Malaysia and Thailand. The study fails to reject the null hypotheses although there are negative relationships between the variables. Pecking order theory argues that firm size is negatively related with leverage due to lower asymmetric information for a larger firm. Regardless of insignificant results, both F&B companies in Malaysia and Thailand are aligning with pecking order theory, where the larger the firm size, the lower external financing for a firm.

The inclusion of liquidity level as determinant for capital structure decision proof liquidity is statistically important in leverage determination for both countries. The negative relationship between liquidity and leverage implies Malaysia and Thailand F&B companies apply the pecking order theory in their capital structure decision (Saarani & Shahadan, 2013; Wahab, et al., 2012). Higher liquidity indicates greater flexibility in term of cash generation, thus less dependency on the external financing is expected.

**Conclusions**

A quick recap on capital structure decision commonly follows the pecking order theory if not its competing theory, the trade-off theory. The study tests five possible determinants of capital structure that are profitability, asset tangibility, growth opportunity, firm size, and liquidity level of food and beverages industry in Malaysia and Thailand. Align to pecking order theory, profitability, asset tangibility, firm size, and liquidity level should be negatively related to leverage while positive relationship is expected between growth opportunities and leverage.

A comparative study between Malaysia and Thailand F&B industry finds similar results for the capital structure decision except some opponent results for asset tangibility and growth opportunity. Evidence from the other three variables; profitability, firm size, and liquidity, Malaysia and Thailand apply the pecking order theory in their capital structure decision. To be more precise, except for growth opportunity, the paper finds evidence of pecking order theory application for Malaysian F&B companies. In contrast, the study finds evidence of pecking order theory from all determinants

except for asset tangibility for Thailand F&B companies.

In conclusion, the study portrays both Malaysia and Thailand F&B industry is more prone to the pecking order theory rather than its rivalry in capital structure decision. Malaysian and Thailand F&B industry would prefer to use their internal financing before applying for the external financing from debt and equity.

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