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The Speed of Adjustment Capital Structure in The Perspective of Structure-Conduct-Performance Theory

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A B S T R A C T

The research objective is to explain the factors that determine the speed of capital structure adjustment based on market concentrations on profitability, company growth, liquidity, exchange rates and inflation. The research method used is the explanatory method with a causality approach. The unit of analysis for this research is non-financial sector issuers listed on the Indonesia Stock Exchange in 2009-2015. This research finds that the structure-conduct-performance theory can be used as a theory that explains the speed of capital structure adjustment. In addition, the results of the study also found the exchange rate to be a driving factor in increasing the speed of capital structure adjustment. Research findings provide support for the structure-conduct-performance theory which indicates that market concentration is a determining factor in company behavior in adjusting capital structure. This study uses the theory of performance-behavior structure in explaining the variables that determine the speed of capital structure adjustment.

A R T I C L E   I N F O

1. INTRODUCTION

Capital structure as part of financial decisions has a strategic role in achieving company goals, namely profit maximization and corporate value (Modigliani & Miller, 1958). Therefore, the company will always re-formulate the determination of capital structure which is considered optimal as a way to achieve these goals. Myers (1984) mentions a re-formulation to obtain an optimal capital structure is like a puzzle game, where the company always makes adjustments to the capital structure in line with the dynamics of the company it faces.

Optimization of capital structure is not only seen in terms of its achievement towards increasing profitability or firm value, but the focus of researchers has now shifted to the problem of speed of adjusting capital structure, including Smith, Chen, & Anderson (2010) which examines the speed of adjustment of corporate capital structure in New Zealand within the period of observation 1984 to 2009. The results of his research found the variables of leverage, profitability, company growth, size, and tangibility are factors that determine the speed of capital structure adjustment. In addition, they also revealed a significant difference in the speed of adjustment of the company's capital structure with the condition of financial deficits and debt below the target and companies with a financial surplus and debt above the target. Companies with financial surplus and debt conditions above the target tend to adjust capital structure faster than companies with financial deficit and debt conditions below the target.

A somewhat different finding was revealed Mukherjee & Mahakud, (2010) which found the target leverage in manufacturing companies in India was determined by the variable company size, tangibility, profitability and market-to-book ratio. While the factors that determine the speed of adjustment of the capital structure itself include company size, company growth, and distance. Oztekin & Flannery (2012) which examines the speed of capital structure adjustment in 103,411 companies in Asia, America and Europe. They find the speed of capital structure adjustment is determined by profitability variable with negative direction, market to book with positive direction, depreciation with positive direction, company size with negative direction, tangibility with negative direction, R&D burden with negative direction, tax with negative direction, liquidity with negative direction. In addition, they also found the influence of macroeconomic variables, namely inflation with a negative direction, and GDP with a positive direction.

The results of previous studies show the researchers focused on financial and macroeconomic aspects with different results. This means that it is still possible to test using other variables as an alternative to explain the factors that drive the speed of capital structure adjustment.

One very rational factor to study, including market structure. Market structure is considered to be able to provide a more precise explanation in determining the speed of capital structure adjustment, because the market structure describes the conditions faced by companies that will encourage companies to behave in determining capital structure that has implications for performance. This is as stated in the SCP (Structure-Conduct-Performance) Theory which explains the market structure has a linear relationship with company behavior and performance (Neuberger, 1998).

Referring to opinion Lipczynski, Wilson, & Goddard (2013) the market structure indicates the competitive conditions that exist in the market and tends to influence the behavior of the company and in turn affect its performance. This is as explained in SCP theory which describes a linear relationship between structure-conduct-performance.

The speed of capital structure adjustment indicates the company's behavior in responding to company conditions (Jensen & Meckling, 1976; Myers, 2001), including in responding to

market structure conditions faced by the company. In another part, the speed of capital structure adjustment as a behavior is shown by the dynamic optimal capital structure model. The use of dynamic models was first introduced by Jalivand and Harris in Lööf (2004). They explained that in order to achieve the optimal capital structure target influenced by company characteristics as a partial adjustment factor (partial adjustment) in achieving long-term financial targets.

Research Lööf (2004) found that in companies in Sweden, variables that had an influence on optimal capital structure consisted of non-debt tax shields, company growth, profitability, tangibility, and firm size. In the UK company only profitability and company size, and the company in the United States consists of income variability, company growth, company uniqueness, and company size. While the factors considered to have an influence on the speed of optimal capital structure adjustment only occur in companies in the UK in the form of variable distance, company growth, and company size, while in the United States the speed of capital structure adjustment is determined by company growth and company size.

In another section, research Flannery & Rangan (2006) builds the hypothesis of the speed of capital structure adjustment based on the theory of trade-offs, pecking orders, and market timing. The results of his research found non-financial companies showed faster capital structure adjustments with a longer target leverage than financial companies as seen from the aspect of the ratio of gross profit before tax compared to total assets, market to book ratio, company size, ratio of fixed assets to total assets, and the ratio of research and development costs to total assets.

The speed behavior of capital structure adjustment is also shown by research Nguyen & Shekhar (2007) which found the behavior of capital structure in Japanese companies is consistent with the partial adjustment model. In addition, the results show that the determinants of target leverage and the speed of adjustment to target leverage in various groups of companies were observed to be significantly different. Specifically, companies with high leverage are more dependent on the availability of internal cash flow compared to companies with low leverage. Adjustment of capital structure of companies with lower profitability is much higher than companies with high profitability.

Research Camara (2012) found internal and external aspects that affect the speed of capital structure adjustment in companies in the United States. Internal aspects consist of company size, tangibility, profitability, non-debt tax shield. He also found variables of economic growth, inflation, and commercial paper spread as external aspects that affect the speed of capital structure adjustment. This finding confirms that the macroeconomic aspect is one of the situations that companies consider in determining capital structure.

Research Lemma & Negash (2014) shows that internal factors that affect changes in capital structure in the short term are company size, profitability, and tax shield. In the long run, internal factors affecting capital structure are earnings volatility, profitability, tangibility, and dividend policy. While the factors that affect the speed of adjustment in the short run are only profitability, while in the long run are company size, and distance. Macroeconomic factors that influence changes in capital structure and the speed of capital structure adjustments are tax rates, inflation, and economic growth as measured by GDP. Therefore, the research question that is focused on is whether market concentration, asset tangibles, profitability, growth, liquidity, inflation, and exchange rates are the determining factors for the speed of capital structure adjustment.

2. METHODS

The stages of optimal capital structure velocity calculations in this study refer to research Ozkan (2001), Drobetz & Wanzenried (2006), and Haron & Ibrahim (2012). The first stage, determine the difference in leverage which is the leverage of year t with the leverage of year t - 1 (Drobetz & Wanzenried, 2006). Leverage proxy is the ratio between total liabilities and total assets. The second stage, determine the target leverage (LV*it) which is a regression of the factors that determine the target leverage is written as follows:

$$LV^*_{it} = \sum_{j=1}^{L} \alpha_j X_{jit} \qquad \textbf{(a)}$$

Based on equation (a), the variables used to determine target leverage are: tangibility, profitability, company growth, and liquidity. Leverage is the ratio between debt to total assets; Tangibility is the ratio of the value of fixed assets to total assets; Profitability is proxy by using Return on Assets (ROA), which is the ratio of profit after tax to total assets; Growth is proxies by comparing the difference in t-year sales with t-1 sales against t-1 sales; Liquidity is proxy by using the ratio between current assets and current liabilities.

Based on the calculation of the difference between leverage and target leverage, the speed of capital structure adjustment is measured using the equation:

$$\delta_{it} = (LV^*_{it} - LV_{it-1}) / (LV_{it} - LV_{it-1}) \qquad \textbf{(b)}$$

If $|\delta_{it}| = 1$, meaning that adjustments are made quickly, adjustments are made within a span of one period, so that the debt ratio owned by the company is right at the target leverage. Whereas if $|\delta_{it}| < 1$ then the company is not optimally making adjustments, so it is not in an optimal capital structure. The results of calculations can also show results $|\delta_{it}| > 1$, this result means that the company made more adjustments than needed, so it had to make more adjustments, because it was not yet at the optimal debt ratio level.

To explain the adjustment and speed of change in capital structure, it is assumed that ⊠it varies from time to time and is a linear and constant term function that is explained by several variables. The determinant of the speed adjustment variable is labeled Zit., As shown in equation (c).

$$\delta_{it} = \beta_0 + \beta_1 Z_{it} \qquad \textbf{(c)}$$

Zit in this study is a variable market concentration, tangibility, profitability, company growth, company liquidity i year, inflation year t, and the value of the exchange rate year t. A description of all the variables studied can be seen in **Table 1.**

Table 1. Variabel Definition

Variable	Measurement	Source
Independent:		
1. Market Concentration (CONC)	Herman Hersfindal Index (sum of market share square)	Financial Report
2. Tangibility (TANG)	*Fixed asset/Total asset*	Financial Report
3. Profitability (PROF)	*Earnings After Tax/Total asset*	Financial Report
4. Growth (GRWT)	*Sales* t *– Sales* t-1/*Sales* t-1	Financial Report
5. Liquidity (LIQU)	*Current asset/Current liability*	Financial Report
6. Inflation (INFL)	Inflation per year	Badan Pusat Statistik
7. Currency Rate (KURS)	Currency rate per year	Bank of Indonesia
Dependent:		
Speed of Adjustment (SOA)	$d_{it} = (LV^*_{it} - LV_{it-1}) / (LV_{it} - LV_{it-1})$	Financial Report

The study was conducted on the issuers of the Indonesia Stock Exchange with the criteria, first: not a company engaged in banking and financial institutions, and second: not suspended in trading during the years 2009-2015. Thus, the sample was selected as many as 281 issuers with observation time 2009 - 2015.

3. RESULTS AND DISCUSSION

The results of the panel data analysis in **Table 2** show the variables that can be accepted as determinants of target leverage on companies on the Indonesia Stock Exchange are tangibility, profitability, and liquidity.

Table 2. Panel Regression of *Target Leverage*

Variable	Coefficient	t-Statistic	Prob.	
C	0.4802	82.70243	0.0000	-
TANG?	0.2134	46.34621	0.0000	***
PROF?	-0.0927	-7.593150	0.0000	***
LIQU?	-0.0156	-7.143223	0.0000	***
R-squared	0.4679			
Adjusted R-squared	0.4667			
Prob(F-statistic)	0.0000			

***Significant at a 1%, 5% and 10%

The equation of the company's target leverage on the Indonesia Stock Exchange using equation (a), is formulated as follows:

$$LV^*it = 0.4801 + 0.2134^*TANG - 0.0927^*PROF - 0.0156^*LIQU \qquad \text{(d)}$$

Based on this formulation, the speed of adjustment of capital structure can be determined by entering the value of tangibility, profitability, and liquidity in the study year. A more complete description of the variables studied is shown in **Table 3**.

Table 3. Variable Description

Variable	N	Mean	Max	Min	Stdev
CONC (%)	1302	6.78	98.90	0.10	16.79
TANG (%)	1302	33.65	598.90	0.01	29.11
PROF (%)	1302	5.66	347.50	-155.60	20.16
LIQU (%)	1302	223.32	7511.00	0.40	353.89
INFL (%)	1302	5.44	8.40	2.80	2.24
KURS (Rp)	1302	9,286	9,527	9,112	0.15
SoA (x)	1302	0.67	12.03	0.01	1.09

Table 3 informs that the average company has a low concentration level of only 6.78%, meaning that the average company has a high level of competition. This condition is estimated to be one of the important considerations for companies to make capital structure adjustments. This is in line with the opinion Lipczynski, Wilson, and Goddard (2013) that the market structure in SCP theory is a consideration of companies to make decisions, including financial decisions.

Tangibility relates to the amount of assets that can be used as collateral; this is seen as a way to reduce the risk of creditors. The greater the proportion of assets tangibility, creditors will more easily lend so that the company's debt level becomes large. In general, companies that have collateral for debt will be easier to get debt than companies that do not have collateral for debt (Brigham & Houston, 2006). Based on this description, **Table 3** provides an illustration of the average company in Indonesia has fixed assets that are relatively smaller than the total assets owned, so it is possible that the capital structure that originates from debt will adjust to the amount of assets held as collateral.

The achievement of profitability of companies in Indonesia has not been well achieved. However, there are a number of companies with excellent profitability. Corporate liquidity illustrates the average ability of a company to guarantee short-term debt with current assets it has is very good.

Exchange rates in the range of research observations show reasonable exchange rates in the context of the economic situation in Indonesia. But seen from the speed of capital structure adjustment, the average speed of adjustment is below 1, meaning that the company is not optimal in making adjustments to its capital structure, so it is not in an optimal capital structure (Drobetz, Pensa, & Wanzenried, 2006).

The results of the panel regression analysis of market concentration, tangibility, profitability, company growth, liquidity, inflation, and exchange rate variables are presented in **Table 4**.

Table 4. Panel Regression of *Speed of Adjustment*

Variable	Coefficient	t-Statistic	Prob.	
C	2.7011	2.7598	0.0059	-
CONC?	0.2149	2.0435	0.0412	**
TANG?	0.0815	1.5479	0.1219	-
PROF?	-0.2292	-3.1870	0.0015	***
GRWT?	0.0959	3.6666	0.0003	***
LIQU?	-0.0123	-2.5916	0.0097	***
INFL?	-0.4474	-0.6083	0.5431	-
KURS?	-0.2439	-2.2769	0.0230	**
R-squared	0.4378			
Adjusted R-squared	0.3317			
Prob(F-statistic)	0.0000			

**Significant at a 5% and 10%
***Significant at a 1%, 5% and 10%

Table 4 shows the speed at which capital structure adjustments are determined by variables of company concentration, profitability, company growth, liquidity, and exchange rates. While the tangibility and inflation variables do not affect the speed of capital structure adjustment. This finding is in line with research Flannery & Rangan (2006), Drobetz et al (2006), Huang & Ritter, (2009) which agrees that the dynamic behavior of an optimal capital structure is determined by various factors that determine the capital structure itself both from internal and external company.

Partially the results of the panel data regression analysis inform market concentration variables significantly influence the speed of capital structure adjustment in a positive direction. This finding is in line with SCP theory, where market concentration as a proxy of market structure determines companies to make capital structure adjustments. Referring to opinion Lipczynski, Wilson, and Goddard (2013) the market structure indicates the competitive conditions that exist in the market and tends to influence the behavior of the company and in turn affect its performance. The speed of capital structure adjustment indicates the company's behavior in responding to company conditions (Jensen & Meckling, 1976; Myers, 2001), including in responding to market structure conditions faced by the company. In another part, the speed of capital structure adjustment as a behavior is shown by the dynamic optimal capital structure model.

The next finding is profitability has an influence on the speed of capital structure adjustment in a negative direction. This finding is in line with the results of the study Lööf (2004), Mukherjee & Mahakud (2010). The finding of the negative effect of profitability on the speed of capital structure adjustment supports the pecking order theory which explains that the fulfillment of capital will be done based on the order of the amount of available sources of capital for the company, thus a company with a large profit level will certainly prioritize the fulfillment of capital through the utilization of the profits obtained and minimize utilization through external sources.

Company growth was found to have a significant effect on the speed of capital structure adjustment in a positive direction. This finding is also in line with the explanation in the pecking order theory, a company with a high growth rate is likely to have the ability to fund its business internally so that the company is not too tempted to find external funding sources. This finding is also in line with research Lööf (2004), Drobetz & Wanzenried (2006), Mahakud & Mukherjee (2011).

Liquidity has an influence on the speed of capital structure adjustment is liquidity with a negative direction. This finding shows that companies with high liquidity tend to avoid using debt as a source of capital, because when a company is in a liquid condition, it reflects that the company has adequate funds in the context of fulfilling capital. This finding also reinforces the results of previous research conducted by Drobetz, W., & Wanzenried, G. (2006) which further reinforces support for the pecking order theory.

Exchange rates have an influence on the speed of capital structure adjustment in a negative direction. These results indicate that an increase in the variable foreign exchange rate resulted in a decrease in the company's capital structure. The results of this study are in accordance with the hypotheses that predict variable foreign exchange rates affect the capital structure of the company as stated in the study Flannery & Rangan (2006), Elsas & Florysiak (2012).

The structure-behavior-performance theory used in this study shows the result that market concentration as an indicator of industrial market structure is one of the factors that determines a company's behavior in managing its business. This finding is another piece of evidence that adjusting the capital structure as a form of corporate behavior is a form of corporate response in carrying out its strategy when the market structure changes. Thus, these findings can clarify that the company's behavior so far identified by Bain (1968), Ferguson (1994), Lipczynski, Wilson, and Goddard (2013), namely pricing strategy, product strategy, research and development that must be carried out by the company. Now this theory in terms of accounting and finance provides empirical evidence that the market structure determines the behavior of companies in adjusting their capital structure.

4. CONCLUSION

The findings of the study inform the speed of capital structure adjustments based on internal and external conditions of the company which include variables of market concentration, profitability, company growth, liquidity, and exchange rates. These findings provide support that SCP theory is relevant in explaining the linear relationship of structure and corporate behavior, but has not yet been tested for its linear relationship on firm performance. Therefore, in the next research the speed of capital structure adjustment needs to be tested for its impact on company performance.

The speed of the company's capital structure is considered relatively slow with a delta value greater than 1, which shows that the average company always adjusts its capital structure because the use of debt has not shown an optimal level of leverage. In response to this condition, the company in the future should really conduct an adequate analysis of various investment options with funding sources from debt. Whereas in the short term, the company should optimize the revenue center by making various innovations on the investment of its choice at this time, so that the use of debt that has occurred can increase the company's efforts to obtain profits.

This research was conducted in the period of observation in normal economic situations, so that in an economic crisis situation it could become a research agenda later in an effort to understand the speed of capital structure adjustment.

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