

# Target and Leverage Adjustment Speed: Evidence on Manufacturing Companies in Indonesia

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## ABSTRACT

The aim of this research is to test the adjustment speed of the target and leverage the company. Company registered on the Indonesia Stock Exchange in that period from 2014 to 2018, is the object of this research, particularly in terms of testing the factors that affect the adjustment speed toward target leverage. This study used a sample of 66 companies manufacturing forming observation. This research uses a dynamic approach that takes into account the possibility of deviation between the actual leverage ratio with the targeted leverage ratio of the company. The results showed that the profitability variable has no significant effect on the adjustment speed, while the variable of company size, distance, and current liabilities to total liabilities ratio negatively and significantly affect the adjustment speed.

**Keywords-** *Target of Leverage, The adjustment speed, Indonesia Stock Exchange.*

## 1. INTRODUCTION

Research on capital structure has been done a lot, but the research is only done in static conditions. Static conditions mean that optimal capital structures are observed (Drobtz and Wanzenried, 2004). Byoun (2012) states that this model does not consider fluctuations in asset values over time. In addition to the static model theory, dynamic theory refers to companies that have an optimal capital structure and will adjust to the optimal capital structure all the time. The adjustment process or commonly known as this adjustment requires speed in adjusting the direction of the target leverage or optimal capital structure called the speed of adjustment (SOA). Low speed of adjustment is a prediction of the existence of a high adjustment cost, a high adjustment cost states that deviations from the target capital structure become more expensive (Mahakud & Mukherjee, 2011). Target of leverage is something that can not be observed. Some studies solve these obstacles by using a static framework observed leverage ratio as a proxy of the optimal ratio of leverage with the various factors that influence it. However, Heshmati (2001) revealed that the static capital structure theory did not explain the target leverage ratio, but rather the actual leverage ratio between the companies. Further stated that the observed leverage deviate from optimal leverage (target) and not the constant adjustments made by the company. The adjustment speed will show different results on each company is different and at different time periods and even at the level of economic development of different countries. Loof (2003), using dynamic adjustment approach to examine the capital structure and leverage

research results indicate that the observed deviate from the targeted leverage. Estimated leverage the adjustment speed is consistent with efforts to rebalance the capital structure of the company. Heshmati research results (2001), Drobtz and Wanzenried (2006), DeHaas and Peeters (2006), Kim et al (2006) and Chipeta and Mbululu (2013) shows that the distance variable speed adjustment positive effect on corporate leverage

Research on the adjustment speed carried out in Indonesia by Surwanti 2015; Patricia, 2016, Batubara, 2017. In addition, there are inconsistent results, and the differences in the use of variable speed of adjustment which becomes the determinant of leverage on previous studies. Positive and significant impact on the profitability variable speed adjustment of leverage indicated by studies Chipeta and Mbululu (2013), where as a negative and significant effect was shown by research Heshmati (2001) and Naveed et al (2015). While positive and significant effect of firm size variable is shown by a study Loof (2003) and Chipeta and Mbululu (2013), where it is caused by differences in the results of a comparison of the use of the leverage ratio to examine the antecedent of the adjustment speed of leverage.

Variables used to gain leverage targeted companies in this study are variable profitability, tangibility, firm size (firm size), growth (growth), and non-debt tax shield, wherein the variables are factors that characterize the company. After knowing the targeted leverage of the company, it will be calculated the adjustment speed towards the target leverage (Heshmati, 2001 ; Loof, 2003; DeHaas and Peeters, 2006; Drobtz and Wanzenried, 2006; Kim et al, 2006; Nosita, 2012; Chipeta and Mbululu, 2013 ; Wett y, 2013; Surwanti, 2015; Naveed et al, 2015). This study uses a dynamic approach that takes into account

the possibility of deviation between the actual leverage ratio with the targeted leverage ratio of the company.

## 2. LITERATURE REVIEW

### Capital structure

Van Horne and Wachowicz (2007: 211) defines the capital structure is the proportion of the company's long-term permanent funding as indicated by debt, preferred stock equity, and common stock

### Capital Structure Theory

The theory of capital structure began in 1958 by Professor Franco Modigliani and Merton Miller (hereinafter referred to as M M) that publish 25 articles a financial titled "The Cost of Capital, Corporation Finance and the Theory of investment" which next become a source for the development of the theory of the structure of modern capital

Here are the theories used to explain the capital structure:

1. Trade-Off Theory  
Trade-off theory developed by Krauss and Litzenberger (1973) with the assumption that the company's value can be maximized by balancing the benefits obtained from the use of debt (tax shield) and the costs incurred by the use of such debt (bankruptcy cost).
2. Pecking order Theory  
Another theory of capital structure pecking order theory proposed by Myers and Majluf in 1984. Myers and Majluf (1984) revealed that in the pecking order theory, corporate funding decisions are based on hierarchy or sequence of preference election funding sources, namely internal funding more preferred over external funding.
3. Agency theory  
The ensuing capital structure theory is agency theory, agency theory proposed by Jensen and Meckling (1976), which depicts the correlation among the principal (the investor or owner of the company) and the agent (manager or person employed).

### Optimal Capital Structure

Modigliani and Miller (1958) explains that if there is a capital structure that is targeted at the enterprise, it shows that the market is not perfect. Market imperfections vary over time and can be caused by internal or external factors. Capital structure decisions is affecting the condition and value of the company, so companies need to know the fact that could affect the company capital structure. Variables that will be used by researchers to form the structure of capital or leverage target is variable

profitability, company size, tangibility of assets (fixed assets), growth, and non-debt tax shield, which of these variables is a factor of the characteristics of the company.

1. Profitability. Profitability is the company's ability to make a profit. Research that uses this variable is research conducted by Rajan and Zingales (1995), Banerjee, Heshmati, and Wihlberg (2000), Drobetz and Wanzenried (2003), Nishioka and Baba (2004), Flannery and Rangan (2006), Haas and Peeters (2006), Byoun (2008), Mukherjee and Mahakud (2010), Nguyen and Wu (2011), Ramjee and Gwatidzo (2012), Ebrahim et al. (2012), Getzmann, Lang, Spremann (2014), Lemma and Negash (2014), and Surwanti (2015).
2. Firm Size. Firm size is a level regarding the size of the company. Drobetz and Wanzenried (2003) state that company size is a proxy for information asymmetry between parties within a company and the capital market.
3. Company Growth. Company growth is the company's ability to improve market performance through comparison between market value and the book value of company equity (Bessler, et al., 2011).
4. Distance. Distance is the deviation between the actual leverage with target leverage (Wetty, 2013). If the company's capital structure is not yet at its target point, the company has bankruptcy and financial distress costs, which the farther the distance, the greater the costs borne by the company.
5. Current liabilities to total liabilities ratio. Current liabilities are short-term debt or current debt the company listed on the balance sheet. Current liabilities to total liabilities ratio is measured using the ratio of current debt to total debt (Kim et al, 2006; Nosita, 2012).

### Dynamic Capital Structure

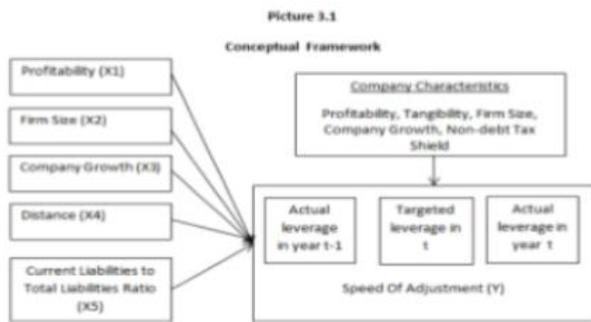
Capital structure with a dynamic model has a better explanatory power than the static model, due to the dynamic models offer a representation of financial behavior is more complete. Surwanti (2015) explained in three ways: first, the dynamic model to accommodate the possibility that the company is not located at the targeted level of leverage, where leverage targeted not the same as the realization of corporate leverage. Second, estimate the adjustment speed, in which firms adapt their capital structure toward the targeted leverage. Third, dynamic models incorporate parameter in determining the adjustment speed of the company capital structure.

### Speed Adjustment of Leverage

Balance adjustment speed is the speed of capital structure on a targeted leverage levels (Surwanti, 2015). The quicker adjustment of the company provides a low signal recapitalization costs, capital costs and their optimal

overall financial flexibility (Cainara, 2012). In general, every company has a different capital structure and facing the capital market conditions are also different. This is what causes the difference in speed between the company's capital structure adjustments that one with another company. The capital structure of the company can move to deviate from its targeted leverage when there is a shock in a company, but then slowly going back to the target position of leverage. De Haas and Peeters (2006) stated that the company will make adjustments to achieve the target of his leverage. Surwanti (2015) defines the adjustment speed (adjustment speed) as balancing speed on the capital structure targeted leverage levels.

**Conceptual Framework**



**Research Hypothesis**

- H1 : Profitability influence the adjustment speed of corporate leverage.
- H2: Firm size influence the adjustment speed of corporate leverage.
- H3: The company growth influence the adjustment speed of corporate leverage.
- H4: Distance influence the adjustment speed of corporate leverage.
- H5: Current liabilities to total liabilities ratio influence the adjustment speed of corporate leverage.

**3. DESIGN AND RESEARCH METHOD  
OPERATIONAL DEFINITION AND  
MEASUREMENT OF VARIABLES**

**Dependent Variables**

**Speed Of Adjustment**

The adjustment speed to the targeted leverage / Speed of Adjustment (6) Can be measured by:

$$LV_{it} - LV_{it-1} = \delta_{it}(LV_{it}^* - LV_{it-1})$$

(Heshmati 2001; Drobetz dan Wanzenried, 2006; Wetly, 2013; Surwanti, 2015)

**Independent Variables**

**Profitability**

Profitability is calculated using the following formula:

$$BEP = \frac{EBIT}{Total\ assets}$$

(Naveed et al, 2015; Surwanti, 2015)

Company Size (Firm Size)

Firm size (Size) is measured using the following formula:

Size = Natural Logarithm (Ln) Total Assets  
(DeHaas and Peeters, 2006; Nosita, 2012; Chipeta and Mbululu, 2013; Naveed et al, 2015; Surwanti, 2015)

**Company Growth**

The company's growth is denoted with GROWTH, its measurement is:

$$GROWTH = \frac{Total\ aktiva_t - Total\ aktiva_{t-1}}{Total\ aktiva_{t-1}}$$

(Nosita, 2012; Surwanti, 2015)

**Distance**

Distance formulated as follows :

$$DIST_{it} = |LV_{it}^* - LV_{it}|$$

(Drobetz dan Wanzenried, 2006; Wetly, 2013)

**Current Liabilities to Total Liabilities Ratio**

Current liabilities to total liabilities ratio measured using good debt ratio to Total debt is defined as follows:

$$CLTL = \frac{Utang\ lancar}{Total\ Utang}$$

(Kim et al, 2006; Nosita, 2012)

**Approach and Types of Research**

This study uses a quantitative approach and included in this type of explanatory research.

Population and Sample Research The population in this study is that its issuers classified by Indonesia Stock Exchange (IDX classification) as the manufacturing sector and listed companies until 2018. The criteria are set as follows:

1. Companies that used in this study are a registered company and report its financial reports in the Indonesian Stock Exchange at least from 2014 until 2018 and never delisted during the observation period.
2. Companies gain (profit) during the study period.
3. Based on these criteria, there were 66 samples selected.

**Data Sources and Data Collection Techniques**

This study uses secondary data, namely the company's annual financial statements derived from the Indonesian Stock Exchange. Financial reporting data used is the balance sheet and income statement ended on December 31 in each year of observation. Data collection techniques used in this research is an indirect way.

**Data analysis method**

The analytical method applied in this study is panel data regression. That use of panel data is to overcome the weaknesses that exist in the method of time series and cross-section.

**Selection of Panel Data Regression Model**

Mechanical panel data regression model estimation can be performed using three mrxlels approach, which is pooled (common effect), fixed effect and random effect. Each model has its assumptions respectively.

**Classic Assumption Testing**

After the panel data regression model was selected, then the classical assumption test. Classical assumption test include:

- 1) Test Normality  
Normality test intends to determine whether this distribution of the data follow or approach a normal distribution or not.
- 2) Test autocorrelation  
Autocorrelation testing aims to test whether a linear regression model there is a correlation between bullies error in period t with an error in period t- 1 (previous).
- 3) Test Multicollinearity  
Multicollinearity test intends to test whether the regression model there is a relationship between the independent variables.
- 4) Test Heteroskidastity  
Heteroskedasticity a variance heterogeneity, which test intends to determine whether the regression model of the residual variance occurs inequality between the considerations with other considerations.

**Coefficient Determination Test and Feasibility Model**

Testing the coefficient of measurement (adjusted R2) is used to estimate how much the independent variables can explain the variable dependent

**Hypothesis test**

T statistical test applied to test the hypothesis of this study, the impact of the independent variables on the dependent variable.

**4. RESEARCH RESULT**

Table 1. Testing Results

Effect	Direction	Significant	Hypothesis Testing
BEP→SOA	+	Not significant	H1 rejected
SIZE→SOA	-	Significant	H2 accepted
GROWTH→SOA	+	Significant	H3 accepted
DIST→SOA	-	Significant	H4 accepted
CLTL→SOA	-	Significant	H5 accepted

Based on a test completion are presented in Table 1 , the results of partial significance test (t test) is as follows:

**Profitability Influence Of Adjustment Speed (Speed of Adjustment)**

These results indicate that profitability is not a significant impact on the adjustment speed, where it is not in accordance with the research hypothesis which states that the company's profitability impact the adjustment speed of corporate lev' erage. Therefore, these results indicate that the level of corporate profits does not affect the speed of the adjustments made by the company. A company with a great advantage having financial flexibility, so that enterprises can choose an alternative source of funding.

**Influence Against Company Size Speed of Adjustment**

The results showed that the size of the company has a significant impact on the adjustment speed, where the results of this study in accordance with the hypothesis that formed are firm size influence the adjustment speed of corporate leverage. Consideration of costs to be incurred by the company in making the adjustment, be a reason for companies to be immediately and quickly make adjustments, so that the adjustments made by the company takes a long time.

## **Effect of Growth Companies to Speed of Adjustment**

These results indicate that the growth of the company has a positive and significant impact on the speed of adjustment, where the results of this study the hypothesis that appropriate and established that the company's growth impact on the adjustment speed of corporate leverage. Based on Table 1, low fluctuate company growth data from one period to another period, but it tends to be around the average value, then declined in 2014 as the decline in the adjustment speed. In addition, the speed coefficient of variation. However fluctuation adjustments and the speed of adjustment data shows the level fluctuation of the data is quite high. Rate fluctuation risk adjustment speed supported by the risk of fluctuations in the company's growth for second sequence as shown in column growth companies tend to provide significant results with a positive direction. The data obtained can still provide an overview and explanation of the company's growth influence on the adjustment speed is based on the model selected.

## **Effect of Distance to Speed of Adjustment**

The results of this study indicate that the larger the deviation or farther distance between the target and actual leverage lead to adjustments made by the company is getting slower. Based on descriptive statistics presented in Table 1, it can be seen if adjustment leverage manufacturing companies in Indonesia will slow down if the deviation between leverage real time and leverage target is large enough, and instead will increase the adjustment speed of leverage if the deviation between leverage actual and target leverage shrink. This can be caused by a consideration of adjustment costs faced by firms, so companies are reluctant to make adjustment immediately.

## **Effect of Current Liabilities to Total Liabilities Ratio of The Speed of Adjustment**

These results indicate that the current liabilities to total liabilities ratio adversely affect the adjustment speed, where it is in line with the hypothesis that established namely current liabilities to total liabilities ratio of companies affects the adjustment speed of corporate leverage. The results of this study indicate that the higher the current ratio of liabilities to total liabilities of the company, then the slower adjustment of leverage undertaken by the company. These results indicate that the high ratio of short-term debt manufacturing companies in Indonesia do not speed up the adjustment of leverage undertaken by the company. This is evidenced by the descriptive statistics presented in Table 1, where it can be seen that the high ratio of short-term debt manufacturing companies in Indonesia it is inversely proportional to the

adjustment speed of leverage indicate slowdown in corporate leverage adjustment. This can be caused by the transaction costs that will be incurred by the company to reduce its current debt ratio is higher than the cost to be borne by the company if it is not located in the targeted debt ratio. However, it can be viewed that the development of short-term debt. ratio is relatively constant, so it can also be assumed that the constant of short-term debt because the debt can be used by employers to control the actions of financial managers.

## **5. CONCLUSION**

Based on the stages of research and test results, it can be concluded as follows:

1. This study showed that the adjustment speed of leverage undertaken by manufacturing firms in Indonesia is still very slow. This is due to the adjustment costs borne by the company, the time adjustment, and the process of making adjustments.
2. Profitability does not significantly influence the adjustment profitability. The effect of speed that no significant effect on the adjustment speed can be caused by a decrease in the level of profitability of companies that encourage companies that are in financial distress so that the adjustments made by the company are made without considering the level of profitability, but it is done through the issuance of shares. In addition, the company is stuck in a pattern or practice specific funding
3. The size of the company has a negative effect on the adjustment speed. Consideration of costs to be faced by companies when making adjustments, the reason for the company to not immediately make adjustments. In addition, large companies tend to make adjustments by reducing the debt level through the use of internal funding sources.
4. The company's growth has positive influence on the adjustment speed. Companies with high growth, it is easier to change the composition of its capital structure by changing the composition of the new capital they earn and have the ease of obtaining external funding that are more likely to make changes to the level of its leverage at an optimal level.
5. Distance negatively affect the adjustment speed. The farther the deviation (distance) between the actual target leverage and leverage, then the slower adjustment of the company. The slow adjustment of leverage that the company may need to make adjustments due to the company's internal financing through dividend policy, so that adjustments are made without external capital market transactions.
6. Current Liabilities to total liabilities have a negative effect on the adjustment speed. The high current ratio of liabilities to total liabilities of the company, triggering a slowdown in the company's leverage adjustment toward target leverage level. This can be caused by the transaction costs will be incurred by

the company to reduce its current debt ratio is higher cost by the company if it is not located in the targeted debt ratio, and the company gradually reduce its debt level through internal funding or equity.

## 6. SUGGESTION

Based on the results and conclusions of this study gives some suggestions for further research development, among other things:

1. For companies are expected to pay attention to the level of its leverage in order to irregularities that may occur in leverage can be minimized, and companies need to consider the composition of the factors that affect the adjustments made by the company that the costs will be borne by the company can be minimized and enhance shareholder value.
2. For investors, this research can serve as a reference to make investment decisions. Investor need to consider the financial condition of the company and when it is appropriate for investors to invest in order to avoid losses.
3. Future studies could use another proxy, primarily related to variable profitability, as well as add other fundamental variables to establish leverage dan variabel macroeconomic targets and the adjustment speed.

## REFERENCES

- [1] Baker, M., and J. Wurgler. 2002. Market Timing and Capital Structure. *Journal of Finance*, Vol. 57, pp. 1-32.
- [2] Cainara, Omar. 2012. Capital Structure Adjustment Speed and Macroeconomic Conditions: US MNCs and DCs. *International Research Journal of Finance and Economics*, ISSN 14-2887 Issue 84.
- [3] Chipeta, C. and Mbululu, D. 2013. Firm heterogeneity, Macro economic Conditions and Capital Structure Adjustment Speeds: Evidence From The ISE. *Investment Analysts Journal*, No. 77.
- [4] De Haas, Ralph, and Peeters, Marga. 2006. The Dynamic Adjustment Towards Target Capital Structures Of firms In Transition Economies. *Economic of Transition Volume 14 (1)*, pp.133-169.
- [5] Drobetz, Wolfgang, and Wanzenried, Gabrielle. 2006. What Determines The Speed of Adjustment to the Target Capital Structure. *Applied Financial Economics*. Vol. 6, pp. 941 - 958.
- [6] Fischer, E., Heinkel, and Zechner R., J. 1989. Dynamic capital structure choice: Theory and tests. *Journal of Finance*, 44, pp.19-40.
- [7] Flannery, Mark, and Hawkins, Kristine W. 2007. *Estimating Dynamic Panels*. Working Paper.
- [8] Getzmann, A., Lang, Sebastian, and Spreman, Klaus. 2010. Determinants of The Target Capital Structure and Adjustment Speed - Evidence From Asian Capital Markets. *The European Financial Management Association, Asian Finance Symposium 2010*
- [9] Ghozali, Imam. 2005. *Applications Multivariate Analysis With SPSS Program*. Publisher Agency Diponegoro University Semarang.
- [10] Ghozali, Priest, and Ratinono, Dwi. 2013. *Multivariate Analysis and Econometric Theory, Concepts and Applications with Eviews 8*. Publisher Agency Diponegoro University Semarang.
- [11] Graham, John R, and Harey, CR., 2001 . The Theory and Practice of Corporate Finance Evidence From the Field., *Journal of Financial Economics* 60, pp.187-243.
- [12] Hovakimian, A., Opler, TC , and Titman, S. 2001., The Debt-Equity Awards: An Analysis Of Issuing firms. *Journal of financial and Quantitative Analysis* 36, pp.1-24.
- [13] Huang, Samuel GH and Song, Frank M ., 2004. The Determinants of Capital Structure: Evidence from China. *Journal of Financial Economics*. pp.1-24.
- [14] Jensen, Michael C., and Meckling, William H. 1976. Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics*. October. 1976, V. 3, No. 4. pp. 305-360.
- [15] Kraus, A., and Litzenberger, RH 1973. A State Preference Model of Optimal Financial Leverage. *Journal of Finance*. pp.45-63.
- [16] Kim, H., Heshmati , A., and Aoun, D. 2006. Dynamics of Capital Structure: The Case of Korean Listed Manufacturing Companies. Working Paper.

- [17] Performance Report of the Ministry of Industry, 2014. Performance Report of the Ministry of Industry, 2015.
- [18] Economic Report and Banking February 2016 publication of LPS. Accessed May 18, 2016.
- [19] Leary, Mark T., and Roberts, Michael R. 2005. Do Firms rebalance Their Capital Structures?'
- [20] The Journal of Finance. Vol. LX, 6, pp.2575 - 2619.
- [21] Loof, Hans. 2003. Dynamic Optimal Capital Structure and Technological Change. Center for European Economic Research, Discussion Paper N o.03-06.
- [22] Modigliani, Franco and Merton H. Miller. 1958. The Cost of Capital, Corporate Finance and The Theory of Investment. American Economic Review 48, pp.261-275.
- [23] Modigliani, Franco and Merton H. Miller. 1963. Corporate Income Taxes and the Cost of Capital: A Correction. American Economic Review.
- [24] Myers, Stewart C. 1984. Capital Structure Puzzle. Journal of Finance. Massachusetts: National Business of Economic Research.
- [25] Myers, Stewart. C. 2001. Capital Structure., The Journal of Economic Perspectives., Vol.15, No. 2 (Spring, 2001), pp.81-102.
- [26] Myers, Stewart C. and Nicholas S. Majluf. 1984. Corporate Financing and Investment Decision when Firms Have Information Investors Do Not Have. Journal of Finance Economics. 13, pp.187-221.
- [27] Naveed, M., Ramakrishnan, S., Anuar, MA, and Mirzaei, M. 2015. Factors Affecting the Speed of Adjustment Under Different Economic Conditions - Dynamic Capital Structure Sensitivity Analysis. Journal of Chinese Economic and Foreign Trade Studies, Vol.8, Issue 3, pp.165 - 182.
- [28] Nosita, Firda. 2012. Optimal Capital Structure and Speed Adjustment: Empirical Study on Indonesian Stock Exchange. Thesis. Master of Science Faculty of Economics and Business, University of Gadjah Mada, Yogyakarta.
- [29] Nugroho, Asih S. 2006. Analysis of Factors Affecting Capital Structure- Property Companies That Go Public In Jakarta Stock Exchange Untuk Periode 1994 - 2004. Thesis, University of Diponegoro, Semarang.
- [30] Rajan, Raghuram G. and Luigi Zingales. 1995. What Do We Know about Capital Structure,
- [31] Some Evidence from International Data, Journal of Finance 5, 1460 pp.1421 -.
- [32] Surwanti, Arni. 2015. Leverage Adjustment Speed of Companies in Indonesia: Dynamic Model Tests. Dissertation. Faculty of Economics and Business, University of Gadjah Mada, Yogyakarta.
- [33] Titman S, and R. Wessels, 1988, The Determinants of Capital Structure Choice. The Journal of Finance, Vol, XLIII, 1.
- [34] Wetty, Freddy Neinesius. 2013. Determinants of Capital Structure Change Speed In manufacturing companies in Indonesia Stock Exchange. Thesis. Gadjah Mada University, Yogyakarta