Leverage Deviation and Speed of Adjustment toward Target Leverage: Evidence from Indonesia Stock Exchange

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Abstract

The study tested the heterogeneity and asymmetry of adjustment speed between groups of analyzes formed based on the interaction between the direction and distance of deviation from target leverage using two-step partial adjustment model. The results show speed adjustment differences among the analysis groups and the asymmetry of the speed of adjustment where the group deviated far above the target has the highest speed of adjustment and the group deviated near below the target of leverage has the lowest adjustment speed. The group of companies deviated far above the target bear the greatest deviation costs while companies in the group diverged near below the target bear the smallest deviation costs. This result is consistent with expectations that companies bearing the highest deviation costs have the greatest pressure to immediately return to the target leverage so that the speed of adjustment will be high, while companies bearing lower deviation costs do not have greater pressure to immediately return to the target leverage so that the speed adjustment towards the target will be lower.

Deviasi Leverage dan Kecepatan Penyesuaian ke Arah Target Leverage Perusahaan yang terdaftar di bursa efek indonesia

Abstrak

Penelitian ini menguji heterogenitas dan asimetri kecepatan penyesuaian diantara kelompok-kelompok analisis yang dibentuk berdasar interaksi antara arah dan jarak deviasi dari target leverage menggunakan two-step partial adjustment model. Hasil penelitian menunjukkan adanya heterogenitas kecepatan penyesuaian diantara kelompok analisis dan adanya asimetri kecepatan penyesuaian dimana kelompok yang terdeviasi jauh diatas target leverage memiliki kecepatan penyesuaian paling tinggi dan kelompok yang terdeviasi dekat target leverage memiliki kecepatan penyesuaian paling lambat. Kelompok perusahaan yang terdeviasi jauh diatas target leverage menanggung biaya deviasi paling besar sementara perusahaan kelompok perusahaan yang terdeviasi dekat dibawah target leverage menanggung biaya deviasi paling kecil. Hasil penelitian ini konsisten dengan dugaan bahwa perusahaan yang menanggung biaya deviasi paling besar memiliki tekanan kuat untuk segera kembali ke target leverage, sementara perusahaan yang menanggung biaya deviasi lebih rendah tidak memiliki tekanan untuk segera kembali ke target leverage sehingga kecepatan penyesuaian akan lebih lambat.

JEL Classification: G10, G32, M10

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INTRODUCTION

The trade-off model emphasizing costs and benefits from debt usage indicate there is an optimal debt ratio that is the target of corporate leverage, and assumes that companies make funding decision that minimize the deviation cost from this optimum level (Kraus & Litzenberger, 1973; Miller, 1977). When actual and target leverage are not at the same point (actual leverage is diverged from the target), the company has the choice to return to the target or stay in a position that deviates from the target. The decision will depend on the comparison of the adjustment costs towards the target and the deviated costs from the target. The company will return to the target if the cost of adjustment to the target is smaller than the cost of the deviation from the target. The company will make adjustments to the target at a certain speed of adjustment.

Determinant of adjustment speed is the magnitude of deviation, that is the company's actual leverage distance from target leverage (Mukherjee & Wang, 2013; Aflatooni & Khazaei, 2020) and the direction of deviation, namely whether the company is overleverage or underleverage (Clark et al., 2009; Lemmon et al., 2008). Companies having leverage near the target will have a slower rate of adjustment than those having leverage far from the target because the deviation cost is lower. Over-leveraged companies hold a higher speed of adjustment than underleverage ones as a result of higher cost deviations (V. Dang et al., 2010). Mukherjee & Wang (2013) confirmed the sensitivity of adjustment speed to leverage deviation and this sensitivity is positive. It can be said that the adjustment speed is positively related to the deviation distance of actual leverage from the target.

Previous studies identified an adjustment speed asymmetry between overleveraged firms and underleveraged ones. Companies that are deviated above the target will have a relatively higher adjustment speed than those that are deviated below the target (Lemmon et al., 2008; Clark et al., 2009; Dang et al., 2010; Dufour et al., 2018). The cost borne by companies in an over-leveraged position is higher than when they are under-leveraged, so overleverage companies will face greater pressure to make adjustments towards the target (Clark et al., 2009; Dang et al., 2010).

The magnitude of the deviation from the target leverage also affects the company's capital structure behavior. There is a different dynamic behavior between companies with large magnitude and companies with small magnitude. Larger magnitude deviation make the company have more pressure to make adjustment towards the target. While a small deviation makes the company not having pressure to immediately make adjustment towards the target. This condition causes companies that have actual leverage near the target leverage to have slower adjustment speed than those that have actual leverage far from the target.

This study aims to analyze the behavior of companies listing on the Indonesia Stock Exchange in adjusting leverage by analyzing the interaction of magnitude and direction of leverage deviation in influencing adjustment speed towards the target to answer the question whether there is speed of adjustment heterogeneity between groups and whether the speed of adjustment is asymmetrical between overleveraged group and underleveraged one. The novelty of this study is to interact direction and magnitude of deviation and analysis the effect on the targeting behavior of listed firms on the Indonesian stock exchange, while previous studies that examined the effect of direction and magnitude deviation on the speed of adjustment separately.

This study results succeeded in documenting the heterogeneity of the speed of adjustment between groups of analysis formed based on the direction and distance of the deviation. This indicates that each analysis group bear unequal cost, so the speed of adjustment of each group is also different. Furthermore, the findings of the study also show the existence of an asymmetry of speed of adjustment between over-leveraged and under-leveraged groups. Far above group has the highest adjustment speed and close under group has the lowest adjustment speed. This

result show that companies deviated far above the target bear the greatest deviation cost while companies deviated close under the target bear the smallest cost of deviation. This result is consistent with the expectation that companies bearing the highest deviation cost have the greatest pressure to immediately return to the target leverage, so the adjustment speed will be high, while firms that bear lower deviation cost do not have greater pressure to immediately return to the target, so the adjustment speed towards the target will be lower.

Trade-off theory

In contrast to irrelevant theory (Modigliani & Miller,1958), the purpose of the trade-off theory is to exhibit that the company's capital structure decision is relevant. The trade-off theory connects two market imperfections, that are payment of taxes and cost of bankruptcy, brings a view that companies should select their capital structure by balancing the benefits of debt taxes and financial distress costs. With this simple and comprehensive logic, this view has received a lot of support from academicians since the beginning of the emergence of seminal work from Kraus & Litzenberger (1973).

However, a large amount of empirical research emerged, showing the companies' failure to follow the basic idea of the trade-off theory. The point is that the postulate trade-off theory that companies are the subject of optimal capital structure where the deviation from the target is only temporary which gives rise to an adjustment. However, this rationality is difficult to implement. If the tax shield estimate looks relatively undebatable, determining the exact cost of bankruptcy is highly unlikely in reality (Myers, 1984).

Some empirical findings contradict the trade-off theory. First, empirical research discovered that firms dealing with large growth opportunities and having huge intangible assets are the subjects for less debt financing. Second, the most basic issue related to trade-off theory validity is the empirical finding of a negative relationship between the company's profitabi-

lity and debt ratio. According to the idea of a trade-off theory, the connection between the two is positive. Profitable firm is identified by low bankruptcy costs and can gain benefits from tax shields by using huge debt financing. However, empirical research contradicts that rationality. Specifically, profitable companies show a tendency having higher equity ratio than non-profitable companies. Third, history shows that companies have used leverage long before corporate income tax exists. Consequently, the corporate income tax that cannot be calculated for the structure of US companies does not affect much after the corporate income tax exists.

Targeting Behavior and Speed of Adjustment

Targeting behavior is related to trade-off theory which states that companies have optimal leverage ratio to balance bankruptcy risk and tax benefits from debt financing. Companies will strive to balance the benefits and costs related to debt by keeping leverage ratio at certain target level (Baxter, 1967; Jensen & Meckling, 1976; Fischer et al., 1989). However, in company operations, there is often a shock that causes the actual leverage to be deviated from the target leverage. Since being not in target leverage position is a non-optimal condition for companies, they will always try to go back to the target. This behavior is called as targeting behavior.

Previous research shows that targeting behavior is not homogeneous between companies; there is no single adjustment speed that is suitable for all companies (Flannery & Hankins, 2013; Lemmon et al., 2008; Clark et al., 2009; (Dang et al., 2014). Empirical estimates of the speed of adjustment toward target leverage give very varied results between studies (Byoun, 2008; Lemmon et al., 2008; Huang & Ritter, 2009; Cook & Tang, 2010; Elsas & Florysiak, 2011; Faulkender et al., 2012; Abdeljawad et al., 2013; Drobetz et al., 2014; Dufour, 2017; Husain et al., 2020). Some studies revealed that companies move quickly toward target leverage (Flannery & Rangan, 2006; Lemmon et al., 2008), other studies have discovered that companies make moderate adjustments (Huang &

Ritter, 2009) and there are also studies those who find adjustments towards target leverage occur at very slow speed (snail's pace) (Fama & French, 2002).

This difference in speed of adjustment is identified because of firm specific factors including profitability, company size, asset tangibility, growth opportunities, financial constraint (Byoun, 2008), deviation distance from the target (Mukherjee & Wang, 2013); macroeconomic factor (Huang & Ritter, 2009) and business cycles (Korajczyk & Levy, 2003).

Previous studies also identified the existence of speed adjustment asymmetry between over-leveraged companies and under-leveraged companies where companies deviated above the target would have a relatively higher adjustment speed than companies below the target (Lemmon et al., 2008; Clark et al., 2009; Dang et al., 2010). Asymmetry of the speed of adjustment is interpreted as a result of deviation cost asymmetry from the target (Flannery & Hankins, 2013; Husain et al., 2020). The cost borne by the overleveraged companies is biger than that of the underleveraged companies, so overleveraged companies will face greater pressure to make adjustments towards the target (Lemmon et al., 2008; Clark et al., 2009; Dang et al., 2010). Over-leveraged companies have more reasons to worry about the deviation from the target leverage compared to under-leveraged companies. Deviation cost for under-leveraged companies increase slowly as the deviation increases below the target, while the cost of deviation associated with over-leveraged increases rapidly (Abdeljawad & Mat Nor, 2017).

The deviation cost above the target is an increase in the likelihood of financial distress which will cause more barriers to add new debt Jensen & Meckling, 1976; Myers, 1977), while below the target deviation cost is the loss of tax benefits from debt use; the decrease of debt role as a tool to discipline managers (Jensen, 1986).

Deviation above the target leverage is more expensive than the deviation below the target because bankruptcy costs and debt agency costs will be intensified rapidly along with

the deviation that is increasingly far above the target. So, the over-leveraged companies need to make adjustment more quickly to reduce costs – disregarding the market conditions they face, while adjustments of the under-leveraged companies are less urgent to make adjustment to target leverage so that it is possible for companies to better consider market conditions in their funding decision (Abdeljawad et al., 2013; Husain et al., 2020).

The speed of adjustment heterogeneity between companies also comes from the difference in magnitude deviation or the distance between actual leverage and target leverage (Mukherjee & Mahakud, 2010; Mukherjee & Wang, 2013). The dynamic behavior of companies with large magnitude deviation and companies with small magnitude deviation is different. Larger magnitude deviation make the company have more pressure to make adjustment towards the target. While a small deviation makes the company have no pressure to immediately make adjustments towards the target. This condition causes companies having actual leverage close to the target leverage to have slower adjustment speeds than companies having actual leverage far from the target leverage.

Different magnitude deviation causes differences in costs borne by the companies. Deviation costs for companies deviated far from the target will be higher than companies deviated close to the target. The deviation cost will increase along with increasing deviation distance and the sharpest increase will occur at the deviation above the target (Abdeljawad & Mat Nor, 2017). The speed of adjustment towards target leverage is responsive to the magnitude of leverage deviation. Mukherjee & Wang (2013) found this sensitivity to be positive; the greater the deviation distance from the target, the greater the incentive to make adjustment and the higher the speed of adjustment towards the target. Faulkender et al. (2012) found that the sensitivity of the speed of adjustment to the deviation of leverage depends on whether the company's capital structure is below or above the target of leverage. The dynamic behavior

of the company which is deviated far from the target and the company that is deviated close to the target is different; where a larger deviation makes the company more critical to make adjustment (Abdeljawad et al., 2013).

METHOD

Data

This study takes a sample of firms listing on the Indonesia Stock Exchange during the period 2007-2016 except the companies in the financial industry because the capital structure of finance companies reflects special regulation and is not an independent company policy. Period of analysis ended at 2016 because in October 2016 Government implemented tax amnesty program in Indonesia. The application of tax amnesty will affect corporate capital structure (Setyorini et al., 2019)

The sample formed consisted of companies in 8 sectors, namely agriculture, mining, basic industries, miscellaneous, consumer goods, property and real estate, infrastructure, utilities and transportation as well as the trade, services and investment sectors. The total sample is 395 companies. Using the panel data unbalance approach, 2777 firm-year observations were obtained as the number of observations. Data were obtained from the Indonesian Stock Exchange (IDX) data base.

Estimation Technique

This study uses a partial adjustment model that describes the partial adjustment towards target leverage depending on the characteristics of the company (Flannery & Rangan, 2006). Partial adjustment models make it possible to estimate the adjustment speed in the direction of the target leverage where the target leverage varies over time and this model can recognize that the deviation from the target does not disappear quickly. For the purpose of the analysis in this study, the analysis of speed adjustment in the subsample uses a more flexible two-step partial adjustment model.

The first step is to estimate the target leverage of each industry by using a fitted value of estimated regression with the actual leverage as the dependent variable with a number of company-specific characteristics identified in the previous study as determinants of target leverage. The estimated target leverage equation is formed for each industry because the leverage behavior of each industry is different. This study uses four independent variables to estimate the target leverage, namely company size, company profitability, asset tangibility, and market to book ratio. The four variables significantly influence leverage (Rajan & Zingales, 1995) and are robustly related to leverage (Frank & Goyal, 2009).

Equation 1 was used to estimate the target leverage by using the unbalanced panel data model.

$$Lev^*_{i,t}=\beta_1+\beta_2 Growth_{i,t-1}+\beta_3 Profit_{i,t-1}+\beta_4 Tang_{i,t-1}+\beta_5 Size_{i,t-1}+\varepsilon_{i,t} \dots\dots\dots\dots\dots\dots\dots 1$$

$Lev^*_{i,t}$ is the company's target leverage at t, $Growth_{i,t-1}$ is the company's growth opportunity i at t-1, $Profit_{i,t-1}$ is the company's profitability i at t-1, $Tang_{i,t-1}$ is the tangibility of the firm i at t-1, is the size of firm i at t-1 and $\varepsilon_{i,t}$ are error terms.

After the estimated target leverage of each industry was formed, the leverage deviation of each of the companies was then calculated using equation 2. Based on the leverage deviation of this company, 4 groups of analysis were formed.

$$Deviation_{i,t}=target\ leverage_{i,t} - actual\ leverage_{i,t-1} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 2$$

$Deviation_{i,t}$ is the company deviation i at t, target leverage$_{i,t}$ is the company's target leverage at t and actual leverage$_{i,t-1}$ is the actual leverage company i at t-1. If the deviation is negative then the company is over-leveraged and if the deviation is positive the company is under-leveraged. Based on the deviation distance, the companies were sorted for under-leveraged and over-leveraged group categories respectively.

The grouping procedure was carried out by following Fama & French (1993) in portfolio formation, which is 30% of companies are those having far deviation range, 40% of companies are those having moderate deviations and 30% of companies are those having closed deviation range. The next step was forming groups based on the interactions between deviation distance and direction. The companies classified as 30% with the farthest deviation and over-leveraged were categorized as far above group. The companies within the 30% closest deviation with a positive deviation were categorized as closed above group. Likewise, the under-leveraged companies also categorized as closed above group. For analysis purposes, the group of companies with moderate deviation was omitted from the analysis. Thus 4 groups of companies were formed, namely Far above (group of companies that deviated above target leverage with a large deviation magnitude), Closed above (group of companies that deviated above target leverage with a small deviation magnitude), Closed under (group of companies deviated under target leverage with a small deviation magnitude) and Far under (group of companies deviated below target leverage with a large magnitude deviation).

The next step is to estimate the speed of adjustment of each subsample using equation 3.

$$Lev_{i,t} - Lev_{i,t-1} = \delta \left(Lev^*_{i,t} - Lev_{i,t-1} \right)$$
$$\varepsilon_{i,t} \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots 3$$

$Lev_{i,t}$ is the company's actual leverage i at t, $Lev_{i,t-1}$ is the company's actual leverage i at t-1, $Lev^*_{i,t}$ is the company's target leverage i at t, δ is the adjustment speed and $+\varepsilon_{i,t}$ is an error term. The estimation of the speed of adjustment of each group of analysis was conducted by using Robust Least Square because of the tendency of abnormal variance distribution. Ratios are generated through the Least Square regression approach and the GMM system shows a similar distribution (Kuo, Liang, & Wang, 2018). Operational definitions of variables are presented in table 1.

Table 1. Variable definition

Variable	Definition
MLev	= (long term debt + short term debt)/ (long term debt + short term debt + market value of equity)
BLev	= (Long term debt + short term debt)/total assets
Prof	= Earning before interest and tax/ total assets
Size	= Log (total assets)
Tang	= (Property + plant + equipment)/ total assets
MTB	= (Total assets – book equity + market equity)/total assets

RESULT AND DISCUSSION

Descriptive Statistics

The descriptive statistics for the variables used in this study is presented in table 2. Descriptive statistics are used to determine the behavioral patterns of the research data

Descriptive statistics for profitability shows that the average profitability ranges from 0.256 to 0.041, with the largest data is in consumer goods sectors with a standard deviation of 0.148 and the smallest standard deviation is in miscellaneous.

Company in agriculture have largest average size (12.549) and the smallest average size of the company is 11.869 in trade, services and investment sectors. Trade, Service and Investment sectors has biggest standard deviation (0.780) and the smallest standard deviation belongs to Mining sector (0.074).

Asset tangibility variable shows. that infrastructure, utilities and transportation sectors have the largest tangible assets compared to other sectors. This data shows that Trade, Service and Investment sector has the largest data distribution for tangibility compared to other sectors and the smallest data distribution is in the infrastructure, utilities and transportation sectors.

Market to book ratio shows that the largest market to book ratio average is in infrastruc-

Table 2. Descriptive statistic of variables

Sector	MLev		Profitability		Size		Tangibility		Growth	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**
Agriculture	.638	.219	.155	.145	12.549	.474	.403	.171	.637	.307
Basic Industry	.594	.186	.134	.134	12.247	.694	.432	.184	.631	.195
Consumer goods	.533	.199	.256	.148	12.385	.622	.359	.166	.642	.196
Infrastructure, utilities & transportation	.657	.188	.126	.189	12.444	.189	.664	.139	.750	.152
Mining	.706	.165	.164	.185	12.383	.074	.424	.196	.701	.181
Miscellaneous	.782	.222	.041	.093	12.145	.557	.346	.173	.676	.208
Property and real estate	.669	.229	.045	.069	12.297	.603	.135	.156	.646	.221
Trade, Service & Investment	.679	.256	.169	.208	11.869	.780	.368	.207	.674	.184

ture, utilities and transportation sectors and the smallest is in Basic Industry sector. Market to book ratio is the main proxy for growth and a high market to book ratio is generally used as a sign of more attractive growth options for companies in the future. Data shows that infrastructure, utilities and transportation sectors have the highest growth compared to other sectors.

Having the estimated-target leverage regression equation, calculation of the target leverage of each company was conducted. Descriptive target leverage statistics for each sector presented in table 3 shows that the highest average target leverage is in miscellaneous industry sector which is equal to 0.780 and the lowest average target leverage is in consumer goods industry sector which is equal to 0.542. The

biggest standard deviation is 0.213 in Trade, Service and Investment sector, with a maximum data value of 0.995 and a minimum data value of 0.154, this indicates that Trade, Service and Investment sector has the largest data distribution compared to other sectors. While the smallest data distribution is in mining sector with a standard deviation of 0.123.

Descriptive statistics for the magnitude of the deviation for each analysis group is presented in table 4. Based on descriptive statistics in table 4, it is known that the average magnitude deviation of underleveraged companies is greater than the average magnitude deviation of overleveraged companies (0.089 compared to 0.084). The average magnitude deviation of the far under group is greater than that of the far above group

Table 3. Target Leverage per Industry

Industry	Mean	Max	Min	SD
Agriculture	.635	.961	.249	.191
Basic Industry	.588	.924	.269	.148
Consumer goods	.542	.894	.198	.185
Infrastructure, utilities & transportation	.674	.998	.309	.171
Mining	.708	.934	.453	.123
Miscellaneous	.780	.988	.230	.208
Property and real estate	.664	.979	.252	.191
Trade, Service & Investment	.692	.995	.154	.213

which is 0.201 compared to 0.184; the average magnitude deviation of the close above group is greater than that of the closed under group which is 0.016 compared to 0.015. Overall, the average magnitude deviation of the over-leveraged group compared to the under-leveraged group is 0.084 compared to 0.089. The number of observations of under-leveraged companies is greater than the number of observations of over-leveraged ones which is 1066 compared to 1003.

Adjustment speed estimation towards the target leverage for each analysis group is calculated using equation 3. The analysis results are briefly presented in table 5.

The results of the data analysis in table 5 show the adjustment speed towards the target leverage for all groups of analysis is signi-

ficant at 1%, except for the close under group where adjustment speed towards the target is significant at 5%.

Adjustment speed for all samples analyzed is 46.9% per year, which means that in a period of one year on average the companies within the study sample can cover their leverage deviation by 46.9%. Thus, on average these companies need more than 2 years to cover all deviation to be back in the target leverage position.

Comparison of the speed of adjustment between overleveraged and underleveraged company groups shows that overleveraged companies group has higher adjustment speed than under-leveraged company group (56.3% compared to 36.5%). This result is consistent with previous studies documenting the asymmetric

Tabel 4. Magnitude Deviation

Panel A. Magnitude of deviation for under/overleverage

Groups	Mean	Max	Min	SD	n
Total sampel	.087	.599	.00005	.088	2069
Underleverage	.089	.599	.00005	.090	1066
Overleverage	.084	.536	.00006	.086	1003

Panel B. Magnitude of deviation for Analysis groups

Groups	Mean	Max	Min	SD	n
Far under	.201	.599	.069	.090	307
Close under	.015	.046	.00005	.009	311
Close above	.016	.045	.00006	.011	303
Far above	.184	.536	.054	.090	300

Table 5. Speed of Adjustment toward Target Leverage

Panel A. Speed of Adjustment for *Under/Overleverage*

Groups	Speed of Adjustment	Z statistic	Adjust R square
Total sampel	.469	31.728***	.138
Underleverage	.365	17.192***	.291
Overleverage	.563	28.023***	.096

Panel A. Speed of Adjustment for Analysis Groups

Groups	Speed of Adjustment	Z statistic	Adjust R square
Far under	.455	11.620***	.013
Close under	.361	2.230***	.007
Close above	.371	2.518***	.009
Far above	.546	16.359***	.035

*** significant at 1%

** significant at 5%

phenomenon of the speed of adjustment between overleveraged and underleveraged companies where overleveraged companies would have a relatively higher adjustment speed than underleverage companies (Lemmon et al., 2008; Clark et al., 2009; Dang et al., 2010). The reason behind the asymmetry phenomenon of speed adjustment is that the costs borne by the company when over-leveraged is higher than when the company is under-leveraged, so over-leveraged companies will face greater pressure to make adjustments towards the target (Lemmon et al., 2008; Clark et al., 2009; Dang et al., 2010).

The direction of deviation is one of the factors found to affect the speed of adjustment (Lemmon et al., 2008; Clark et al., 2009; Faulkender et al., 2012; Dang et al., 2014). Previous studies identified the existence of an asymmetry in the speed of adjustment between over-leveraged companies and under-leveraged companies. Companies that are deviated above the target will have the speed of adjustment that is relatively higher than those that are deviated below the target. Asymmetry of the speed of adjustment is interpreted as a result of the existence of asymmetry of deviation cost (Flannery & Hankins, 2013). Deviation cost for under-leveraged companies is smaller than deviation cost for over-leveraged companies. Over-leveraged companies have more reasons to worry about the deviation from the target leverage compared to under-leverage ones. The cost of deviation for under-leveraged companies increases slowly as the deviation increases below the target, while the cost of deviation associated with over-leveraged increases rapidly (Abdeljawad & Mat Nor, 2017).

Deviation cost above the target is an increase in the likelihood of financial distress which will cause more barriers to add new debt (Jensen & Meckling, 1976; Myers, 1977), while the deviation cost below the target is the loss of tax benefits from debt use, the decrease of debt role as a tool to discipline managers (Jensen, 1986).

Deviation above the target leverage is more expensive than the deviation below the target because bankruptcy cost and debt agency cost will be intensified rapidly along with the deviation that is increasingly far above the target, so over-leveraged companies need to make adjustment more quickly to reduce costs disregarding the market conditions faced, while adjustment of under-leveraged companies is less urgent to make adjustments to target leverage so that it is possible for companies to better consider conditions of market in their funding decisions (Abdeljawad et al., 2013).

The results of further testing for groups of analysis formed based on the interaction between direction deviation and magnitude deviation indicate that there are differences in speed between groups of analysis, namely the far above, close above, close under, and far under the target group of companies. The far above group has the highest adjustment speed compared to the adjustment speed of the other groups, which is 54.6% per year, and the close under group has the speed of adjustment at the slowest compared to the speed of other groups, which is 36.1% per year.

When the corresponding group of deviation is compared the results show that the far above group has higher adjustment speed than the far under group, which is 54.6% and 45.5% respectively, the close above group has higher speed than the close under group, which is 37.1% and 36.1% respectively. Furthermore, when the group corresponding to the deviation direction is compared the results show that the far above group has higher adjustment speed than the close above group (54.6% and 37.1%), the far under group has higher adjustment speed than the close under group (45.5 % and 36.1%).

Previous studies identified heterogeneity of adjustment speeds for company groups based on direction of deviation (Lemmon et al., 2008; Clark et al., 2009; Dang et al., 2010) and the magnitude of deviation (Mukerjee and Wang, 2013; Abdeljawad et al., 2013) separately. This study interacts with the direction of deviation (whether the company is deviated above or below the target leverage) and the magnitude of deviation (whether the company is deviated far or near the target) to see its effect on adjustment

speed. The results of the study indicate that the interaction of direction and magnitude of deviation affect the speed of adjustment to the target leverage.

Direction and magnitude of deviation for each of these analysis groups represent different cost of deviation borne by the companies. Companies in the group of companies that deviate far above the target bear the greatest cost of deviation while companies in groups that are deviated close under the target bear the least cost of deviation. The findings of this test indicate that the heterogeneity and asymmetry of the speed of adjustment occur between the analysis groups and the far above group has the highest adjustment speed while the close under group has the lowest speed of adjustment. This findings is consistent with expectations that companies that bear the highest cost of deviation have the greatest pressure to immediately return to the target leverage so that the speed of adjustment will be high, while companies that bear lower cost of deviation do not have greater pressure to immediately return to the target leverage so that the speed adjustment towards the target will be lower.

Additional information that can be revealed from table 5 is that for the overall sample tested, adjustment speed is 46.9% per year. This means that the deviation from the target leverage can be covered by 46.9% within a year, so the analyzed companies need more than 2 years to return to the target leverage point.

This adjustment speed of 46.9% can be compared with the speed of adjustments in other capital markets that have been documented in previous studies. Adjustment speed for the Indonesian capital market identified in this study, which amounted to 46.9%, can be compared with the results of Flannery & Rangan (2006) study using database compilation and documented the adjustment speed of 36% and 34% and slightly faster than the documented results by Ozkan (2001) which is 41% for the UK capital market.

Compared to other developing countries, the speed of adjustment in the Indonesia Stock Exchange falls into the slower category. Haron et al., (2013) identified adjustment speed in the Malaysian capital market of 57%, Ramjee & Gwatidzo (2012) documented adjustment speed in the South African capital market at 80.2%, and Miguel & Pindado (2001) documented the adjustment speed of 80% per year for the Spanish capital market.

In contrast, Eugene F Fama & French (2002) found the slow speed of adjustment, ranging from a minimum of 7% for firms that pay dividend and a maximum of 18% for firms that not pay dividend, while Huang & Ritter (2009) found an adjustment speed of 17% per year. Fama & French (2002) interpreted the slow adjustment speed indicates that the trade-off factor may only be a secondary judgement in capital structure decisions.

Several reasons are raised regarding heterogeneity in the speed of adjustment between countries. Some investigators pointed to fundamental argument (Flannery & Hankins, 2007) while others attributed to the use of methodologies (Hovakimian & Li, 2011; Iliev & Welch, 2010), variations between countries such as in the country's economic environment, institutions, tax systems and practices, an government practices related to capital structure decisions (Antoniou et al., 2008). However, the speed of adjustment will remain heterogeneous between companies in the same country and in research with the same estimation method.

CONCLUSION AND RECOMMENDATION

The findings of this research succeeded in documenting the heterogeneity of adjustment speed between groups of analysis formed based on the direction and distance of the deviation. This indicates that each analysis group bears different costs so that adjustment speed of each group is also different. Furthermore, the results of the study also indicate the existence of an asymmetry of the speed of adjustment between groups which deviates above the target leverage and the group which deviates below the target of leverage. The highest adjustment speed is in

the far above group and the lowest adjustment speed is in the close under group. This result shows that the group of companies deviated far above the target bears the greatest deviation costs while companies in groups that are deviated near below the target bear the smallest cost of deviation.

This result is consistent with expectations that companies that bear the highest deviation costs have the greatest pressure to immediately return to the target so that adjustment speed will be high, while companies that bear lower deviation costs do not have greater pressure to immediately return to the target so that adjustment speed towards the target will be lower. The results of this study as a whole support the trade-off theory because adjustment speed towards the target shown by companies in Indonesia is relatively high.

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