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Corporate Capital Structure Adjustments: Evidence from Vietnam Stock Exchange Market

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Abstract

Building a target capital structure is one of the most important decisions in corporate financial management. The purpose of this article is to identify the determinants of capital structure and adjustment mechanism toward the target leverage. The partial adjustment model was applied on a sample of 306 non-financial companies listed on Vietnam stock exchange market during the period of 2008-2017. By the fixed effect model estimation method, the research results have discovered the factors of growth opportunities, firm size, tangible fixed assets and firm's unique characteristics have a positive effect on the target capital structure of enterprises. Besides, profitability and dividend payment have a negative effect on the target capital structure of enterprises. Accordingly, the research results show that the average adjustment speed toward target leverage of the firms is 90.03%. Research results also demonstrate firms have higher or lower debt ratio than the target debt ratio, capital surplus or capital deficit also have an impact on the adjustment rate toward the target capital structure. The research results are consistent with the Dynamic Trade-off Theory. From this result, this article has provided policy implications for non-financial companies listed on Vietnam's stock market in building a reasonable target capital structure according to operating timeline to maximize enterprise value.

Keywords: Target Capital Structure, Adjustment Speed, Dynamic Trade-off Theory, Partial Adjustment Model, Non-financial Companies, Vietnam Stock Exchange Market.

JEL Classification Code: G30, G32, C10, C13.

1. Introduction

Since the publication of Modigliani and Miller (1958), capital structure is one of the topics that has attracted the researcher's attention. Most research on capital structure focuses on two main theories, which is the trade-off theory (TOT) and the pecking order theory (POT). The pecking order theory does not consider the target capital structure and the adjustment to that target. In contrast, the trade-off theory introduces the concept that the target capital structure reflects the balance between the cost and benefits of debt financing. Accordingly, the enterprise will adjust its capital structure toward target in order to maximize enterprise value.

Recent empirical papers focus more on trade-off theory to study the target capital structure and adjustment method to the target of firms. For example, there have been some studies in the US (Byoun, 2008; Dang & Garrett, 2015; Fama & French, 2002; Flannery & Hankins, 2007; Kayhan & Titman, 2007; Lemmon, Roberts, & Zender, 2008). In the UK market, there is also a study of Ozkan (2001). In Spanish market, there is a study of De Miguel and Pindado (2001). In Swiss market, there are studies of Drobetz, Pensa, and Wanzenried (2006). In the Asian market, there are researches of Getzmann, Lang, and Spremann (2014). In Vietnam, although there is an increase in the number of

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studies on the subject of capital structure of enterprises, however, the research on the target capital structure and the speed of adjusting toward target leverage is still quite rare (Son, 2011; Trang, Tuyen, & Diep, 2016).

The trend of integration and economic development in the region and towards globalization at higher levels is indispensable, creating opportunities for Vietnamese enterprises but at the same time a great challenge. With those great opportunities and challenges, Vietnamese enterprises have made great efforts in exploiting social resources to develop activities at the whole industry and also enterprise levels. One of those resources is financial resource from outside of the company. In fact, every business has its own ability and policy of approaching different external financial resources and leading to different effects, even in opposite directions. Some enterprises use it effectively, preserve the owners' equity, on the contrary, some others suffer losses and increasingly losing equity. Thus, building a target capital structure is necessary for the existence and development of Vietnamese enterprises in the current context.

The purpose of this study is to identify factors that affect capital structure and how to adjust toward target capital structure of non-financial companies listed on the Vietnamese stock market. To achieve this objective, this study applies the partial capital structure adjustment model proposed by Byoun (2008) and Dang and Garrett (2015) on a dataset of 306 listed non-financial companies on Vietnam's stock market in the period of 2008-2017. By the fixed effect model (FEM) estimation method, the research results have found that the determinations of the target capital structure include growth opportunities, size, tangible fixed assets, firm’s characteristics, profitability and dividend payments. However, the research results do not show a statistically significant relationship between corporate income tax, non-debt tax benefits, risk and capital structure of companies. In addition, empirical research results also found that the average adjustment speed toward capital structure of non-financial companies listed on Vietnam stock market is about 90.03%, and depends on above-target debt or below-target debt condition of the firms. At the same time, the research results also show that the financial situation of enterprises (capital surplus or capital deficit) has an important influence on the leverage adjustment. The results of this study will help financial managers to build a reasonable target capital structure over time to maximize the value of the companies.

This article includes six parts: Section 1 introduces research issues; Section 2 presents the literature review; Section 3 presents research models and methods; Section 4 presents data and sample collection; Section 5 presents the results of empirical research; the final section summarizes the findings and the implications of building target capital structure for companies.

2. Literature Review

Trade-off theory for capital structure consists of two forms, static and dynamic. The static trade-off theory of capital structure based on the balance between the tax benefit of debt and the financial constraint cost, there will be an optimal capital structure for firms (Myers, 1984). According to Myers (1984), companies that follow this model will set a target leverage and gradually move towards it.

A direct criticism of the static trade-off theory of capital structure is to assume that an enterprise is always at the optimal level of capital structure. However, in fact, decision on the capital structure is dynamic. The adjustment depends on the expectations and adjusting costs, so enterprises often restructure capital actively over time (Brigham & Houston, 2012). According to the dynamic trade-off theory of capital structure, the funding decision depends on the near future forecasts. For example, some companies plan to pay dividends in the next period, while other companies plan to raise capital. In the need of capital, the firms can borrow or issue equity, or do both.

Fischer, Heinkel, and Zechner (1989) provide a dynamic capital structure model, which include capital restructuring costs. According to this model, the financial leverage ratio will change over time and enterprises will have the upper limit and lower limit for debt ratio when restructuring capital. The dynamic capital structure model also considers the capital restructuring decision as an option, in that, the value depends on the capital restructuring decision in the future. The research of Goldstein, Ju, and Leland (2001) shows that low debt ratio firms have an option to increase their debt ratio. According to this study, raising debt ratio option in the future is to respond to the reduction of the current optimal debt ratio. The reason is that due to transaction costs, companies will periodically adjust the capital structure toward target, so the capital structure of most companies often deviates from the target leverage. The study of Flannery and Hankins (2007) shows that the capital structure decision not only reflects the optimal capital structure but also includes the cost of deviating the actual capital structure from the target and the cost of adjust toward the target. In other words, the dynamic capital structure adjusting process is the tradeoff between the benefit of the optimal capital structure and the cost of rebalancing the capital structure.

On the basis of the POT and the dynamic trade-off theory of capital structure, there are some studies on the target capital structure, such as:

In the US market, Fama and French (2002) studied the US company dataset for the period 1965-1999. This study considers both groups of companies with dividends and no dividends. By least squares estimation (OLS) method, the research results have found that the adjustment speed toward target capital structure ranges from 7% to 10% for enterprises with dividends, and from 15% to 18% for non-dividend companies. Flannery and Rangan (2006) also studied the US dataset for the period 1965-2001. By panel data regression method, the research results provide evidence that US companies actually have long-term target capital structure and adjust the current debt ratio quite fast (about 34%) toward target debt ratio. Kayhan and Titman (2007) studied the target capital structure on US dataset in the period 1971-2002. By Tobit regression method, the research results have found that the adjustment rate toward target capital structure of these enterprises is about 10%. On the database of US companies from 1963-2003, by panel data regression method, Lemmon et al. (2008) found that the adjustment rate toward target capital structure of US firms was 25%. Byoun (2008) used the variables of TOT and POT to examine the adjustment of actual capital structure toward target capital structure.

By panel data regression method on the dataset of US companies in the period of 1972-2003, the research results found that the speed of adjustment toward target capital structure of enterprises is 22.58%. At the same time, enterprises adjust toward target capital structure as follows: (i) when firms have a higher debt ratio than the target debt ratio, capital surplus firms adjust toward target capital structure faster than the capital shortage firms; (ii) when firms have a lower debt ratio than the target debt ratio, capital shortage firms adjust toward target capital structure faster than capital surplus firms; (iii) in case of capital surplus, enterprises have a higher debt ratio than the target debt rate, which adjusts the target capital structure faster than enterprises with lower debt ratio than the target debt ratio; (iv) in case of capital shortage, firms with lower debt ratio than the target adjust toward the target capital structure faster than firms with a higher debt ratio than the target.

Applying the model of Byoun (2008) on the US dataset during 1971-2003, by Pooled OLS method, Dang and Garrett (2015) provided evidence that the adjust speed toward target capital structure is about 33.3%. When firms have a higher debt ratio than the target debt ratio, capital surplus firms adjust toward target capital structure faster than the capital shortage firms. This study also shows that when firms with financial surplus surpass their targets, the extra adjustment costs are relatively low because they can use surplus to reduce debt on the target level.

In the UK market, Ozkan (2001) studied the target capital structure on the British company dataset from 1984 to 1996. By generalized method of moments (GMM) estimation method, the research results show that the adjustment speed toward target capital structure is about 56.9%. In the Spanish market, De Miguel and Pindado (2001) studied the target capital structure on the Spanish company dataset for the period of 1990-1997. By GMM estimation method, this study found that the adjustment rate toward target capital structure of Spanish companies was 79%. In addition, the results of this study also show that these enterprises must bear transaction costs during adjustment process. In the Swiss market, Drobetz et al. (2006) conducted a study to determine the factors and adjustment speed toward the target capital structure of 90 Swiss companies in the period of 1991–2001. By panel data regression method, research results have found that companies with higher growth opportunities will have a faster rate of adjustment toward target capital structure.

In order to compare the target capital structure among countries, Antoniou, Guney, and Paudyal (2008) used a set of G5 countries' including France, Germany, Japan, the UK and America in the period of 1987-2000. By GMM estimation method, the research results show that the adjustment speed toward the target capital structure is 32%, 11%, 23.6%, 39.3% and 32.2% for the UK, Japanese, Germany, France, and the US respectively.

In the Asian market, a case study of Getzmann et al. (2014) on data sets in Asian countries during the period of 1995-2009. By GMM estimation method, the research results have found that the adjustment speed toward the target capital structure of Asian enterprises ranges from 24% to 45%.

In Vietnam, although there is an increase in the number of studies on the subject of capital structure of enterprises, however, the research on the target capital structure and how to adjust the target capital structure is still quite rare. Up to this point, a study of Son (2011) on the data set including 187 industrial manufacturing enterprises listed on Ho Chi Minh City Stock Exchange and Hanoi Stock Exchange for 4 years from 2007 to 2010. The research results have found that the adjustment speed toward the target capital structure of these enterprises is 70.6%. This study also confirms that firms can adjust toward target capital structure quickly in case of capital shortage or higher debt ratio than the target debt ratio. In addition, Trang et al. (2016) also conducted a study on the adjustment speed toward the target capital structure of 202 enterprises listed on Ho Chi Minh City Stock Exchange in the period of 2008–2012. Research results show that the average adjustment rate toward target leverage of these enterprises is 99.04%. The research results also show that the deficit and surplus of capital and high or lower debt ratio than the target has an impact on the adjustment speed.

According to the author's knowledge, the issue of studying the target capital structure has not been done by any author for all non-financial companies listed on both Ho Chi Minh and Ha Noi stock exchange markets in Vietnam. Therefore, this research will add new evidence on the target capital structure and the mechanism of adjusting toward target capital structure of non-financial enterprises listed on the Vietnamese stock market.

3. Methodology

On the basis of the Trade-off Theory and the Pecking Order Theory, previous empirical evidences show that there are many factors affecting the target capital structure decision. The important and meaningful internal financial factors which are discovered by many previous researchers include: median of industry debt ratio, corporate income tax, profitability, growth opportunities, size, benefits of non-debt tax, tangible fixed assets, firm's unique characteristics, dividend payment, and corporate risks.

3.1. Determinants of Target Capital Structure

3.1.1. Model and Hypotheses

According to Byoun (2008) and Dang and Garrett (2015), the model of factors affecting the target capital structure of listed non-financial firms on Vietnam stock market is proposed as follows.

$$\begin{aligned}\left(D_{i,t}/A_{i,t}\right)^{*} = {} & \beta_0 + \beta_1 MED_{i,t} + \beta_2 TAX_{i,t} + \beta_3 ROA_{i,t} \\ & + \beta_4 MB_{i,t} + \beta_5 SIZE_{i,t} + \beta_6 NDTS_{i,t} \\ & + \beta_7 FATA_{i,t} + \beta_8 UNI_{i,t} + \beta_9 DIV_{i,t} \\ & + \beta_{10} RISK_{i,t} + u_{i,t}\end{aligned} \quad (1)$$

In which, $D_{i,t}$ is the total debt of firm i at time t, $A_{i,t}$ is the total asset of firm i at time t, $\left(D_{i,t}/A_{i,t}\right)^{*}$ is the debt ratio representing the target capital structure of firm i at time t. The independent variables include: MED is the median of industry debt ratio, TAX is the ratio of real income tax of the firm; ROA is the profitability of the firm; MB is a growth opportunities; SIZE is the size of the firm; NDTS are non-debt tax benefits; FATA is tangible fixed assets; UNI is a unique feature of the firm; DIV is the dividend payment; RISK is the risk of the firm, $u_{i,t}$ is a random distribution error $(u_{i,t} \sim iid(0, \sigma^2))$ showing differences over time and between firms in the research sample.

This section describes the research hypothesis on the relationship between the factors with the target capital structure of enterprises which has been built in regression equation 1.

Median of industry debt ratio (MED): Many previous empirical studies have found that the median of industry debt ratio is an important factor that determines the target capital structure of enterprises. Most of previous studies show that the median of industry debt ratio is positively related to the target capital structure of enterprises (Byoun, 2008; Dang & Garrett, 2015; Getzmann et al., 2014; Lemmon et al., 2008; Trang et al., 2016). Consistent with the above studies, for this relationship, the hypothesis is set as follows:

H1: The median of industry debt ratio has a positive impact on the target capital structure of enterprises.

Enterprise income tax (TAX): The impact of corporate income tax on target capital structure is the main content in the study of capital structure. According to the TOT for capital structure, enterprises with high corporate income tax rates often use a lot of debt to take advantage of tax deduction from interest. This results an expected positive relationship between the corporate income tax and the target capital structure. Empirical research by Dang and Garrett (2015) supported this view. In contrast, some studies (Byoun, 2008; Son, 2011; Trang et al., 2016) have found a negative relationship between corporate income tax and the target capital structure of enterprises. Thus, the relationship between corporate income tax and the target capital structure of enterprises is unclear. However, in the context of Vietnam, in agreement with the research results (Byoun, 2008; Son, 2011; Trang et al., 2016), the hypothesis for this relationship is set as follows:

H2: Enterprise income tax has a negative effect on the target capital structure of enterprises.

Profitability (ROA): Profitability is also affect the target capital structure of enterprises. The POT said that if an enterprise is highly profitable, its capital structure will be financed mainly from internal capital rather than external capital. This suggests a negative relationship between profitability and the target capital structure of enterprises. Most empirical studies of target capital structure support this view (Antoniou et al., 2008; Byoun, 2008; Dang & Garrett, 2015; Drobetz et al., 2006; Fama & French, 2002; Flannery & Rangan, 2006; Getzmann et al., 2014; Kayhan & Titman, 2007; Lemmon et al., 2008; Ozkan, 2001; Son, 2011; Trang et al., 2016). According to the POT and consensus with the results of previous empirical research on the target capital structure, the hypothesis of this relationship is set as follows:

H3: Profitability has a negative effect on the target capital structure of enterprises.

Growth Opportunities (MB): Theoretical studies suggest that growth opportunities are considered as a factor that relates to capital structure. However, there are two conflicting views about this relationship. First of all, the TOT for capital structure argues that companies with large growth opportunities often maintain a low debt ratio. There is an inverse relationship between growth opportunities and leverage. There are some empirical studies on the target capital structure supporting this view (Antoniou et al., 2008; Byoun, 2008; Dang & Garrett, 2015; Drobetz et al., 2006; Getzmann et al., 2014; Kayhan & Titman, 2007; Lemmon et al., 2008; Ozkan, 2001). On the other hand, the POT suggests that businesses with high growth opportunities are expected to have more debt financing needs in the future. This suggests a positive relationship between growth opportunities and capital structure. Some researches (De Miguel & Pindado, 2001; Fama & French, 2002; Son, 2011; Trang et al., 2016) also supported this view. Thus, the relationship between growth opportunities and target capital structure of enterprises is unclear. However, in Vietnamese conditions, consensus with the study results (De Miguel & Pindado, 2001; Fama & French, 2002; Son, 2011; Trang et al., 2016), the hypothesis for this relationship is set as follows:

H4: Growth opportunities have a positive effect on the target capital structure of enterprises.

Firm's size (SIZE): According to the TOT for capital structure, bigger companies have better access to debt than small scale enterprises. Because of information asymmetry, small businesses face higher costs to get external capital. Therefore, large enterprises can have an advantage over small businesses in accessing capital markets and can borrow capital in more favorable conditions. This shows a positive relationship between the size and capital structure of enterprises. Most empirical studies on target capital structures across countries support this view (Antoniou et al., 2008; Byoun, 2008; Dang & Garrett, 2015; Drobetz et al., 2006; Fama & French, 2002; Flannery & Rangan, 2006; Getzmann et al., 2014; Kayhan & Titman, 2007; Lemmon et al., 2008; Ozkan, 2001; Son, 2011; Trang et al., 2016). According to the TOT for capital structure and agreeing with the results of previous empirical research on the target capital structure, the hypothesis for this relationship is set as follows:

H5: Firm size positively affects the target capital structure of enterprises.

Non-debt tax benefits (NDTS): According to the TOT for capital structure, one of the main benefits of using debt is the tax benefit from interest expense. Therefore, companies will use debt to reduce corporate income tax payable. In addition to tax deductions from interest expenses, there are also non-debt tax deductions such as depreciation of fixed assets. If the tax benefit from loan interest encourages firms to use more debt, then firms with more benefits from non-debt taxes will use less debt in their capital structure. The benefit from non-debt taxes is seen as an alternative to the tax benefit of debt financing. Many previous research results on the target capital structure show that the higher the interest rate of enterprises, the less debt they use (Antoniou et al., 2008; Byoun, 2008; De Miguel & Pindado, 2001; Fama & French, 2002; Flannery & Rangan, 2006; Getzmann et al., 2014; Ozkan, 2001). Consistent with the results of previous empirical research on the target capital structure, the hypothesis of this relationship is set as follows:

H6: The non-debt tax benefit has a negative effect on the target capital structure of enterprises.

Tangible fixed assets (FATA): Both TOT for capital structure and POT claim that tangible fixed assets have a positive relationship with capital structure. In this view, researchers previously argued that companies with high tangible fixed assets often borrowed loans with relatively favorable conditions than businesses with low collateral value. Because when businesses provide tangible assets, collateral will create a positive signal for better creditors. Most empirical studies on target capital structures across countries support this view (Antoniou et al., 2008; Byoun, 2008; Dang & Garrett, 2015; Drobetz et al., 2006; Flannery & Rangan, 2006; Getzmann et al., 2014; Kayhan & Titman, 2007; Lemmon et al., 2008; Son, 2011). According to the TOT for capital structure and the POT as well as the results of previous empirical research on the target capital structure, the hypothesis of this relationship is set as follows:

H7: Tangible fixed assets have a positive effect on the target capital structure of enterprises.

Firm's unique characteristics (UNI): According to Frank and Goyal (2008), enterprises that produce unique products or operate in specific industries will use less debt, because in the case of enterprises bankrupt, these enterprises will face difficulties in liquidating their assets. This demonstrates that the specific characteristics of enterprises have an inverse relationship with the capital structure of enterprises. There have been some empirical studies on the target capital structure supporting this view (Byoun, 2008; Dang & Garrett, 2015; Flannery & Rangan, 2006; Kayhan & Titman,

2007). Consistent with the results of previous empirical research on the target capital structure, the hypothesis of this relationship is set as follows:

H8: The unique characteristics of enterprises have negative effects on the target capital structure of enterprises.

Dividend payment ratio (DIV): According to Jensen and Meckling (1976), dividends and debt can be used interchangeably in reducing the issue of conflict between owners and managers (agency problem). Therefore, between dividends and debt, there is an inverse relationship. There have been some empirical studies on the target capital structure supporting this view (Byoun, 2008; Dang & Garrett, 2015; Fama & French, 2002; Lemmon et al., 2008; Son, 2011). Consistent with the results of previous empirical research on the target capital structure, the hypothesis of this relationship is set as follows:

H9: The dividend payout ratio has a negative effect on the target capital structure of enterprises.

Firm's risk (RISK): According to financial theories, when companies are at high risk of bankruptcy, financial leverage will be low. According to Huang and Ritter (2009) that risk can be measured as the ability of enterprises to pay interest, if they have ability to pay higher interest, the risk will be lower and vice versa. There have been some empirical studies on the target capital structure supporting this view (Byoun, 2008; Dang & Garrett, 2015; De Miguel & Pindado, 2001). Consistent with the results of previous empirical research on the target capital structure, the hypothesis of this relationship is set as follows:

H10: Risks have negative effects on the target capital structure of enterprises.

3.1.2. Variables Measurement

Based on previous empirical studies and characteristics of Vietnamese enterprises, this study uses book values to measure variables. The following Table 1 summarizes all the variables used in the models, along with symbols and formulas for calculating variables as well as references from previous studies.

3.2. Partial Adjustment Model for Capital Structure

According to Byoun (2008) and Dang and Garrett (2015), the partial adjustment model toward target capital structure has the following form:

$$D_{i,t} - D_{i,t-1} = \left(D_{i,t}/A_{i,t}\right)^{*} A_{i,t} - D_{i,t-1} \quad (2)$$

Table 1: Variables Measurement

Variables	Symbol and Measurement	References
Debt ratio	$\mathrm{D/A} = \frac{\text{Total Debt}}{\text{Total Asset}}$	Byoun (2008); Dang and Garrett (2015); Son (2011); Trang et al. (2016)
Median of industry debt ratio	MED = Median of Debt ratio for each Industry	Byoun (2008); Dang and Garrett (2015); Trang et al. (2016)
Enterprise income tax	$\mathrm{TAX} = \frac{\text{Income tax paid}}{\text{Net income before tax}}$	Son (2011); Trang et al. (2016)
Profitability	$\mathrm{ROA} = \frac{\text{Profit before tax \& } interest}{\text{Total Asset}}$	Byoun (2008); Dang and Garrett (2015); Trang et al. (2016)
Growth Opportunities	$\mathrm{MB} = \frac{\text{Market value of outstandings}}{\text{Book value of outstandings}}$	Byoun (2008); Dang and Garrett (2015); Trang et al. (2016)
Firm's size	SIZE = Ln(Total Asset)	Byoun (2008); Dang and Garrett (2015); Trang et al. (2016)
Non-debt tax benefits	$\mathrm{NDTS} = \frac{\text{Depreciation}}{\text{Total Asset}}$	Byoun (2008); Dang and Garrett (2015); Trang et al. (2016)
Tangible fixed assets	$\mathrm{FATA} = \frac{\text{Tangible fixed asset}}{\text{Total Asset}}$	Byoun (2008); Dang and Garrett (2015); Trang et al. (2016)
Firm's unique characteristics	$\mathrm{UNI} = \frac{\text{Cost of good sold}}{\text{Gross sales}}$	Son (2011); Trang et al. (2016)
Dividend payment ratio	$\mathrm{DIV} = \frac{\text{Dividend paid}}{\text{Total Asset}}$	Byoun (2008); Dang and Garrett (2015); Trang et al. (2016)
Firm's risk	$\mathrm{RISK} = \frac{\text{Interest paid}}{\text{Profit before tax \& } interest}$	Trang et al. (2016)

In which, $D_{i,t}$ and $D_{i,t-1}$ is the debt ratio of firm i at time t and t-1, $A_{i,t}$ is the total assets of firm i at the time t, $(D_{i,t}/A_{i,t})^*$ is the target debt ratio of firm i at time t.

Divide both sides of the equation 2 for $A_{i,t}$:

$$(\Delta D_{i,t}/A_{i,t}) = \alpha_1 + \lambda_1 Dev_{i,t} + \varepsilon_{i,t} \quad (3)$$

In which, $Dev_{i,t} = (D_{i,t}/A_{i,t})^* - (D_{i,t-1}/A_{i,t})$; λ_1 is the adjustment speed toward the target capital structure which has value from 0 to 1; $\varepsilon_{i,t}$ is a random error with a normal distribution ($\varepsilon_{i,t} \sim iid(0, \sigma^2)$ showing the differences in time between firms in the research sample. $(D_{i,t}/A_{i,t})^*$ is the estimated value determined from the equation 1.

3.3. Model for Target Capital Structure Adjustment in Case of Higher or Lower Leverage Than Target

Byoun (2008) argues that the cost of deviating from the target capital structure depends on whether the firm has a high or low debt level. Accordingly, enterprises with high debt ratios will have lower adjustment costs than firms with low debt ratios, as they adjust back to the target debt ratio by reducing the debt level and this is less expensive than debt issuance. Therefore, the adjustment model toward the target capital structure when enterprises have a higher or lower debt ratio than the target as follows:

$$(\Delta D_{i,t}/A_{i,t}) = \alpha_2 + \lambda_2 Dev_{i,t} D^a_{i,t} + \lambda_3 Dev_{i,t} D^b_{i,t} + \varepsilon_{i,t} \quad (4)$$

In which, λ_2, λ_3 is the adjustment speed toward target capital structure when enterprises have a debt ratio higher or lower than the target debt ratio which has value from 0 to 1. $D^a_{i,t}$ is a dummy variable with a value of 1 if the actual debt ratio of the firm is greater than the target debt ratio $\left((D_{i,t}/A_{i,t}) - (D_{i,t}/A_{i,t})^*\right) > 0$ and equal to 0 in the opposite case. $D^b_{i,t}$ is a dummy variable with a value of 1 if the enterprise has an actual debt ratio lower than the target debt ratio $\left((D_{i,t}/A_{i,t}) - (D_{i,t}/A_{i,t})^*\right) < 0$ and equal to 0 in the opposite case.

3.4. Model for Target Capital Structure Adjustment in Case of Capital Surplus or Deficit

According to Byoun (2008), adjusting the target capital structure of enterprises is also affected by financial surplus and financial deficit, the imbalance of cash flow. Capital deficit companies are under pressure to compensate for the shortage of capital by issuing debt, equity or both, so they will adjust their target debt ratio faster. On the contrary, capital surplus enterprises will not be pressured to adjust the debt ratio to the target level. According to Byoun (2008), the capital surplus or deficit is determined as follows:

$$FD_{i,t} = DIV_{i,t} + I_{i,t} + \Delta W_{i,t} - OCF_{i,t} = \Delta D_{i,t} + \Delta E_{i,t} \quad (5)$$

Where: $OCF_{i,t}$ is the operating cash flow after interest and tax, $I_{i,t}$ is a fixed asset investment, $\Delta W_{i,t}$ is working capital investment; $DIV_{i,t}$ is the dividend payment of the firm, $\Delta D_{i,t}$ and $\Delta E_{i,t}$ are the changes of debt and equity. If $FD_{i,t} > 0$, then the firm has a capital deficit, and if $FD_{i,t} < 0$, the then the firm has a capital surplus.

Similar to the model from equation (4), we have a partial adjustment model toward target capital structure in the case of capital surplus or deficit as follows:

$$(\Delta D_{i,t}/A_{i,t}) = \alpha_3 + \lambda_4 Dev_{i,t} D^s_{i,t} + \lambda_5 Dev_{i,t} D^d_{i,t} + \varepsilon_{i,t} \quad (6)$$

In which, $D^s_{i,t}$ is a dummy variable whose value is 1 if the firm has capital surplus $FD_{i,t} < 0$ and otherwise, the value is 0. $D^d_{i,t}$ is a dummy variable with a value of 1 if the firm has a capital deficit $FD_{i,t} > 0$ and vice versa has a value of 0. With λ_4, λ_5 is the adjustment speed toward the target capital structure when the firm has capital surplus or deficit.

3.5. Model for Target Capital Structure Adjustment When Enterprises Deviate from the Target Capital Structure with Capital Surplus or Deficit

The model considers the interaction impact when enterprises deviate from the target capital structure with capital surplus or deficit to the speed of adjusting toward the target capital structure of enterprises is as follows:

$$(\Delta D_{i,t}/A_{i,t}) = \alpha_4 + (\lambda_6 D^s_{i,t} + \lambda_7 D^d_{i,t}) Dev_{i,t} D^a_{i,t} + (\lambda_8 D^s_{i,t} + \lambda_9 D^d_{i,t}) Dev_{i,t} D^b_{i,t} + \varepsilon_{i,t} \quad (7)$$

Where:

λ_6 is the adjustment speed toward the target capital structure when the firm has an actual debt ratio higher than the target debt ratio and capital surplus.

λ_7 is the adjustment speed toward the target capital structure when the firm has an actual debt ratio higher than the target debt ratio and capital deficit.

λ_8 is the adjustment speed toward the target capital structure when the firm has an actual debt ratio lower than the target debt ratio and capital surplus.

λ_9 is the adjustment speed toward the target capital structure when the firm has an actual debt ratio lower than the target debt ratio and capital deficit.

3.6. Estimation Methods

This study applies two stages estimation method. Phase 1 estimates model 1 to find the target capital structure. Phase 2 estimates models 3, 4, 6 and 7 to find the adjustment speed toward the target capital structure. To select the appropriate model between random effect model (REM) and fixed effect model (FEM), this study applies Hausman's test. If (Prob > χ^2) < 5% then it is possible to reject the hypothesis H0 (Differences in regression coefficients are not systematic), meaning that the FEM is selected. In contrast, the REM will be selected.

In addition, to investigate multi-collinearity in the model, the study uses the VIF (variance inflating factor) multiplier. To test the self-correlation sequence, this study used the Lagram-Multiplier test procedure. To examine the variance of variation in the FEM model, this study used the Wald test procedure with the xttest3 command. In the REM model, Lagrange is used with the xttest0 command using the STATA software.

4. Data and Sample Collection

Data includes the annually audited financial statements which can be collected from the website: https://vietstock.vn/. The companies selected for the sample are active non-financial companies, with full financial reporting for the period of 2008–2017. With this sampling method, data collected includes 306 non-financial companies operating in the 2008–2017 period. Consequently, the final dataset is a strongly balanced panel dataset, which includes 3060 firm-year observations of 306 companies (306 companies x 10 periods = 3060 observations).

The number of non-financial companies included in the sample grouping by sectors is shown in Table 2 below.

Table 2: Number of companies by sectors

Sector	Number of companies	Observations	Proportion (%)
Agriculture	24	240	7.84%
Consumption	33	330	10.78%
Industrial	53	530	17.32%
Marteials	45	450	14.71%
Medical	7	70	2.29%
Real estate & Construction	75	750	24.51%
Services	59	590	19.28%
Technologies	10	100	3.27%
Total	306	3060	100%

The table above shows that out of the total of 306 companies and 3060 observations in the sample, the real estate and construction sectors had the largest number of surveyed companies with 75 companies and 750 observations respectively, accounts for 24.51%. Health sector has the lowest number of companies with only 7 companies, corresponding to 70 observations and accounts for 2.29%. The number of companies in the sample satisfies the sample size criteria and also ensures the general overview of the stock exchange market in Vietnam.

5. Empirical Results

5.1. Descriptive Statistics

Table 3 below presents descriptive statistical results of capital structure and factors affecting the target capital structure of listed non-financial firms on Vietnam stock market in the period of 2008-2017.

Table 3: Descriptive statistic of variables

Variables	Observations	Mean	Median	SD	Min	Max
D/A	3060	0.4852	0.5043	0.2306	0.0056	0.9982
MED	3060	0.4851	0.4518	0.0810	0.3571	0.6365
TAX	3060	0.1768	0.1911	0.1310	−0.5667	0.9225
ROA	3060	0.0955	0.0850	0.0991	−1.6451	1.1362
MB	3060	1.1012	0.8640	0.8965	0.1001	9.2005
SIZE	3060	26.6860	26.6300	1.4319	22.6400	31.6000
NDTS	3060	0.0305	0.0235	0.0273	0.0000	0.2213
FATA	3060	0.2589	0.2085	0.2046	0.0000	0.9061
UNI	3060	0.8085	0.8330	0.1731	0.0248	3.0333
DIV	3060	0.0314	0.0203	0.0426	0.0000	0.7339
RISK	3060	0.2212	0.1117	0.9125	−27.1261	16.6141

Note: D/A is the debt ratio representing corporate capital structure; MED, TAX, ROA, MB, SIZE, NDTS, FATA, UNI, DIV, RISK represent the industry median debt ratio, actual corporate income tax rate, profitability, market value on book value of stocks, company size, non-debt tax benefit, proportion of fixed assets on total assets, firm's unique characteristics, dividend payments, corporate risk respectively.

The statistical results described in Table 3 show that the average debt ratio (D/A) of the firms in the research sample is 48.52%, the highest debt ratio is 99.82% and the minimum debt ratio is 0.56%. In general, the fluctuation between enterprises is relatively high with a standard deviation of 23.06%. The industry median debt ratio (MED) is 48.51%. The average tax rate of enterprises (TAX) is 17.68%. The average rate of return on total assets (ROA) is 9.55%. The ratio of market value to book value of shares (MB) of enterprises has an average value of 110.12%. The size of enterprises (SIZE) has an average value of 26.686, equivalent for VND 388.67 billion. The average non-debt tax (NDTS) benefit is 3.05%. The average ratio of fixed assets

Table 4: Correlation coefficient matrix and variance inflation factors between variables in model

	D/A	MED	TAX	ROA	MB	SIZE	NDTS	FATA	UNI	DIV	RISK	VIF
D/A	1.000											
MED	0.351**	1.000										1.11
TAX	0.084**	0.059**	1.000									1.03
ROA	−0.283**	−0.155**	0.088**	1.000								1.68
MB	−0.082**	−0.095**	−0.061**	0.316**	1.000							1.17
SIZE	0.335**	0.168**	0.041**	−0.004	0.103**	1.000						1.07
NDTS	−0.066**	−0.094**	−0.024	0.182**	0.056**	−0.108**	1.000					1.56
FATA	−0.024	−0.134**	−0.030	0.044**	−0.019	−0.050**	0.561**	1.000				1.53
UNI	0.231**	0.026	−0.039**	−0.364**	−0.138**	−0.013	−0.038**	−0.097**	1.000			1.18
DIV	−0.367**	−0.217**	−0.007	0.541**	0.284**	−0.103**	0.149**	0.012	−0.210**	1.000		1.51
RISK	0.139**	0.092**	0.104**	−0.032	−0.078**	0.076**	−0.032	−0.004	0.039**	−0.090**	1.000	1.03

Note: D/A is the debt ratio representing corporate capital structure; MED, TAX, ROA, MB, SIZE, NDTS, FATA, UNI, DIV, RISK represent the industry median debt ratio, actual corporate income tax rate, profitability, market value on book value of stocks, company size, non-debt tax benefit, proportion of fixed assets on total assets, firm's unique characteristics, dividend payments, corporate risk respectively. ** indicates significance at 5%.

to total assets (FATA) of enterprises is 25.89%. The average cost of goods sold on net revenue (UNI) of enterprises is 80.85%. The average dividend rate on total assets (DIV) of enterprises is 3.14%. The interest rate on profit before tax and interest (RISK) has an average value of 22.12%. In addition, the maximum, minimum, median and standard deviations of the variables are presented in Table 3.

5.2. Correlation Analysis between Variables

Correlation coefficients show trends in relationships between variables in the model. Based on the correlation matrix results, the study will analyze the relationship between the dependent variable and the independent variables in the model and the correlation between the independent variables. Table 4 below shows the correlation coefficient matrix and the variance inflation factor (VIF) between the variables in the model.

The results in Table 4 show that the debt ratio (D/A) is positively correlated with the industry median debt ratio (MED), actual corporate income rate (TAX), firm size (SIZE), Cost of goods sold ratio on net revenue (UNI) and interest rate on profit before tax and interest (RISK) of enterprises and significant at 5%. In contrast, the debt ratio (D/A) has a negative correlation with the profitability (ROA), the ratio of market value to book value of stocks (MB), non-debt tax benefits (NDTS) and dividend rate on total assets (DIV) and significant at 5%. Meanwhile the negative relationship between debt ratio (D/A) and the ratio of fixed assets to total assets (FATA) is not statistically significant.

On the other hand, the results in Table 4 show that the variance inflation factor (VIF) between the independent variables in the model is very small, and the average VIF value= 1.29<2. Therefore, the multi-collinearity phenomenon in the model is not serious (Studenmund, 2011) and will not affect the model estimation results.

5.3. Regression Results

5.3.1. Regression Results for Target Capital Structure

Table 5 below presents the regression results of the factors affecting the target capital structure of listed non-financial firms on Vietnam's stock market in the period of 2008-2017 under the FEM estimation method.

Table 5: Regression results for target capital structure

Variables	Coefficient	Robust Std. Err.
MED	0.8592***	0.1354
TAX	−0.0259	0.0185
ROA	−0.1691***	0.0501
MB	0.0126***	0.0039
SIZE	0.0500***	0.0116
NDTS	0.1020	0.2059
FATA	0.0767**	0.0341
UNI	0.0444***	0.0163
DIV	−0.3033***	0.1038
RISK	0.0029	0.0021
Constant	−1.3091***	0.3182
Observation	3060	
R-squared (within)	0.1375	
F-statistic	F(10, 305) = 12.43***	
Hausman test	Chi2(10) = 106.87***	

Notes: This table presents the regression results for target capital structure, modeled by Eq. (1). The model is estimated using the FEM estimator. ***, ** indicates the statistical significant at 1% and 5% respectively.

The Hausman test results show that statistics Chi2 (10) = 106.87 with (Prob> Chi2 = 0.0000) < 1%. This result implies that the FEM estimation method is a more suitable than the REM estimation method. After fixing the heteroscedasticity and auto-correlation in the panel data, experimental results according to the FEM estimation method in Table 5 show:

Industry median debt ratio (MED): Regression coefficient of this variable is 0.8592 and statistically significant at 1%. This result accepts hypothesis 1 and is consistent with previous studies (Byoun, 2008; Dang & Garrett, 2015; Getzmann et al., 2014; Lemmon et al., 2008; Trang et al., 2016). This shows that the industry median debt ratio plays an important role in leverage of non-financial companies listed in Vietnam. This result also implies that the higher the median debt ratio of the industry, the more firms will borrow in this sector than those in the industry with low median debt ratio.

Corporate income tax (TAX): Regression coefficient of this variable is −0,0259 and does not have statistical meaning. This result rejects hypothesis 2 but is consistent with Modigliani and Miller (1958) theory. This suggests that corporate income tax is not an important factor in leverage of non-financial companies listed in Vietnam.

Profitability (ROA): Regression coefficient of this variable is −0.1691 and statistically significant at 1%. This result accepts hypothesis 3 and is consistent with the POT. The results are consistent with most previous studies (Antoniou et al., 2008; Byoun, 2008; Dang & Garrett, 2015; Drobetz et al., 2006; Fama & French, 2002; Flannery & Rangan, 2006; Getzmann et al., 2014; Kayhan & Titman, 2007; Lemmon et al., 2008; Ozkan, 2001; Son, 2011; Trang et al., 2016). This shows that enterprises with high profitability will use less debt than low-profit enterprises.

Growth opportunities (MB): Regression coefficient of this variable is 0.0126 and statistically significant at 1%. This result accepts hypothesis 4 and is consistent with the POT. This result is consistent to previous studies (De Miguel & Pindado, 2001; Fama & French, 2002; Son, 2011; Trang et al., 2016). This shows that companies with higher growth opportunities will be able to borrow more than enterprises with lower growth opportunities.

Firm's size (SIZE): Regression coefficient of this variable is 0.050 and statistically significant at 1%. This result accepts hypothesis 5 and TOT for capital structure. This result is consistent to most previous studies (Antoniou et al., 2008; Byoun, 2008; Dang & Garrett, 2015; Drobetz et al., 2006; Fama & French, 2002; Flannery & Rangan, 2006; Getzmann et al., 2014; Kayhan & Titman, 2007; Lemmon et al., 2008; Ozkan, 2001; Son, 2011; Trang et al., 2016). This shows that bigger enterprises will be able to borrow more than small-scale enterprises.

Non-debt tax benefit (NDTS): Regression coefficient of this variable is 0.1020 and has no statistical meaning. This result rejects hypothesis 6. This result is similar to the previous study (Okuda & Nhung, 2010; Son, 2011; Trang et al., 2016). This result can be explained that the non-debt tax benefits of listed non-financial companies in Vietnam are depreciation of fixed assets, but enterprises with high depreciation rate of fixed assets are also large, so these firm might not suffer of external funding difficulties. Listed non-financial enterprises are mostly large-scale enterprises, easy access to loans, so depreciation of fixed assets does not affect the decision of borrowing by listed non-financial companies in Vietnam.

Tangible fixed assets (FATA): Regression coefficient of this variable is 0.0767 and statistically significant at 5%. This result accepts hypothesis 7 and is consistent with the TOT for capital structure as well as POT. This result is consistent to most previous studies (Antoniou et al., 2008; Byoun, 2008; Dang & Garrett, 2015; Drobetz et al., 2006; Flannery & Rangan, 2006; Getzmann et al., 2014; Kayhan & Titman, 2007; Lemmon et al., 2008; Son, 2011). This shows that enterprises with higher value of fixed assets will be able to borrow more than enterprises with smaller fixed asset value.

Firm's unique characteristics (UNI): Regression coefficient of this variable is positive 0.0444 and statistically significant at 1%. This result rejects hypothesis 8. This shows that the unique characteristics of enterprises have positive effects on the target capital structure of enterprises. In other words, enterprises with higher cost of good sold value will be able to borrow more than enterprises with smaller cost of good sold value.

Dividend payment (DIV): Regression coefficient of this variable is −0.3033 and statistically significant at 1%. This result accepts hypothesis 9 and is consistent with the POT. This result is also consistent to previous studies (Byoun, 2008; Dang & Garrett, 2015; Fama & French, 2002; Lemmon et al., 2008; Son, 2011). This suggests that firms with higher dividend payments will be able to borrow less than firms with lower dividend payout rates.

Firm's risk (RISK): Regression coefficient of this variable is 0.0029 but has no statistical meaning. This result rejects hypothesis 10. This shows that the risk of enterprises is not an important factor for leverage of listed non-financial companies in Vietnam. This result is consistent with the research of Trang et al. (2016).

5.3.2. Regression Results for Target Capital Structure Adjustment Models

Table 6 below presents the estimated results of the target capital structure adjustment models of non-financial

companies listed on Vietnam's stock market in the period of 2008-2017 under the FEM estimation method.

Table 6. Regression results for target capital structure adjustment models

Variables	Coefficient and Robust standard errors			
	Eq. (3)	Eq. (4)	Eq. (6)	Eq. (7)
$\mathrm{Dev}_{i,t}$ (λ_1)	0.9003*** (0.0212)			
$\mathrm{Dev}_{i,t}\mathrm{D}^{a}_{i,t}$ (λ_2)		0.9728*** (0.0173)		
$\mathrm{Dev}_{i,t}\mathrm{D}^{b}_{i,t}$ (λ_3)		0.7480*** (0.0479)		
$\mathrm{Dev}_{i,t}\mathrm{D}^{s}_{i,t}$ (λ_4)			0.8623*** (0.0295)	
$\mathrm{Dev}_{i,t}\mathrm{D}^{d}_{i,t}$ (λ_5)			0.9220*** (0.0205)	
$\mathrm{Dev}_{i,t}\mathrm{D}^{a}_{i,t}\mathrm{D}^{s}_{i,t}$ (λ_6)				0.9502*** (0.0158)
$\mathrm{Dev}_{i,t}\mathrm{D}^{a}_{i,t}\mathrm{D}^{d}_{i,t}$ (λ_7)				1.0342*** (0.0431)
$\mathrm{Dev}_{i,t}\mathrm{D}^{b}_{i,t}\mathrm{D}^{s}_{i,t}$ (λ_8)				0.8218*** (0.0670)
$\mathrm{Dev}_{i,t}\mathrm{D}^{b}_{i,t}\mathrm{D}^{d}_{i,t}$ (λ_9)				0.7082*** (0.0399)
Constant	0.0003 (0.0008)	0.0160*** (0.0039)	0.0037* (0.0019)	0.0173** (0.0033)
Observation	2754	2754	2754	2754
R-squared (within)	0.7556	0.7662	0.7565	0.7691
F-statistic	1802.00***	1626.40***	1077.39***	979.72***
Hausman test (Chi2)	1015.7***	957.99***	1018.46***	838.74***
F-test ($\lambda_2 = \lambda_3$)		0.000***		
F-test ($\lambda_4 = \lambda_5$)			0.0348**	
F-test ($\lambda_6 = \lambda_7$)				0.0524*
F-test ($\lambda_8 = \lambda_9$)				0.0354**
F-test ($\lambda_6 = \lambda_8$)				0.0617*
F-test ($\lambda_7 = \lambda_9$)				0.000***

Notes: This table reports the results for Eqs. (3), (4), (6) and (7). The models are estimated using the FEM estimator. Figures in parentheses are the p-value. Figures in parentheses are robust standard errors. F-test reports the p-value of the F-test for the hypothesis that the coefficient estimates (the speed of adjusting estimates) are equal. ***, ** and * indicates the statistical significant at 1%, 5% and 10% respectively.

The Hausman test results show that the FEM estimation method is a more suitable than the REM estimation method. After fixing the heteroscedasticity and auto-correlation in the panel data, experimental results according to the FEM estimation method in Table 6 show:

The adjustment rate toward the target capital structure is λ_1= 0.9003 and is statistically significant at 1%. This means that the adjustment process toward targets of the debt ratio takes about 1.11 years (1.11 = 1/0.9003). The adjustment rate is quite high which is also accordance with the market situation and enterprises in Vietnam when companies are more inclined to finance by debt than equity, enterprises realize that borrowing is easier than mobilize capital within firms. This result is consistent with the TOT for capital structure, which means that non-financial companies listed on Vietnam's stock market are interested in the target capital structure.

F-test ($\lambda_2 = \lambda_3$) with (Prob> F = 0.0000) <1%. This result implies that there is a difference between the speed of adjusting the target capital structure of enterprises between higher and lower debt ratios than the target debt ratio with statistical significance at 1%. Accordingly, enterprises with higher debt ratios than target adjust faster toward target capital structure than enterprises with lower debt ratio than the target (λ_2= 0.9728 compared to λ_3= 0.7480). This means that the adjustment process toward the target debt ratio of enterprises with higher debt ratio than the target is about 1.03 years (1.03 = 1/0.9728), while enterprises with lower debt ratio than the target is about 1.34 years (1.34 = 1/0.7480). Enterprises with higher debt ratio than the target have higher deviating cost and lower adjustment cost than enterprises with lower debt ratios than the target. This result is similar to many previous studies (Byoun, 2008; Dang & Garrett, 2015; Son, 2011; Trang et al., 2016).

F-test ($\lambda_4 = \lambda_5$) with (Prob >F = 0.0348) < 5%. This result implies that there is a difference in adjustment rate toward the target capital structure between enterprises with capital surplus and shortage is statistically significant at 5%. The experimental results in Table 6 show that enterprises with capital deficit adjust toward target capital structure faster than capital surplus enterprises (λ_4= 0.8623 compared to λ_5 = 0.9220). This means that the adjustment process toward the target debt ratio of capital-shortage enterprises takes about 1.08 years (1.08 = 1/0.9220), while the enterprises with surplus capital take about 1.16 years (1.16 = 1/0.8623). Because capital deficit enterprises are under pressure to adjust debt ratios compared to capital surplus enterprises. This result is similar to many previous studies (Byoun, 2008; Dang & Garrett, 2015; Son, 2011; Trang et al., 2016).

In case of a higher debt ratio than the target, the adjustment rate of capital surplus enterprises (λ_6 = 0.9502) is lower than the capital shortage enterprises (λ_7 = 1.0342) and statistically significant at 10% (F-test ($\lambda_6 = \lambda_7$) with Prob > F = 0.0524 < 10%). This result is consistent to previous researchs (Dang & Garrett, 2015; Trang et al., 2016).

In case of a lower debt ratio than the target, the adjustment rate of capital surplus enterprises (λ_8= 0.8218) is higher than the capital shortage enterprises (λ_9= 0.7082) and statistically significant at 5% (F-test ($\lambda_8 = \lambda_9$) with Prob> F = 0.0354 < 5%). This result contrasts with previous studies (Byoun, 2008; Dang & Garrett, 2015; Son, 2011; Trang et al., 2016).

In the case of capital surplus, enterprises with higher debt ratio than the target ($\lambda_6 = 0.9502$) adjust faster than enterprises with a lower debt ratio than the target(λ_8 = 0.8218) and statistically significant at 10% level (F-test ($\lambda_6 = \lambda_8$) with Prob> F = 0.0617 < 10%). This result is consistent to previous research (Son, 2011; Trang et al., 2016).

In the case of capital deficit, enterprises with higher debt ratio than the target ($\lambda_7 = 1.0342$) adjust faster than enterprises with a lower debt ratio than the target (λ_9 = 0.7082) and statistically significant at 1% (F-test ($\lambda_7 = \lambda_9$) with Prob> F = 0.000 < 1%). This result is consistent to many previous studies (Son, 2011; Trang et al., 2016).

6. Conclusion and Implication

This study applies partial capital structure adjustment model proposed by Byoun (2008) and Dang and Garrett (2015) to determine factors affecting the target capital structure and the adjustment rate of 306 public Non-financial companies listed on Vietnam stock market in the period of 2008-2017. By the FEM estimation method, the research results have discovered the factors of growth opportunities, firm size, tangible fixed assets and specific firm's characteristics have a positive effect on the target capital structure of enterprises. Besides, profitability and dividend payment have a negative effect on the target capital structure of enterprises. However, the research results do not show a statistically significant relationship between corporate income tax, non-debt tax benefits, risk and target capital structure of enterprises. Accordingly, the results show that the average adjustment speed toward the target capital structure of non-financial companies listed on Vietnam's stock market is quite high (90.03%) and depends on whether the enterprise has a higher or lower debt ratio than the target debt ratio. On the other hand, the financial situation of enterprises (capital surplus and capital deficit) has an important influence on the adjustment toward the target capital structure of enterprises. The research results are consistent with the trade-off theory and previous empirical studies (Byoun, 2008; Dang & Garrett, 2015; Son, 2011; Trang et al., 2016).

These results are extremely important in making decision on building target capital structure. Therefore, in order to make appropriate leverage decisions, financial managers need to calculate the costs and benefits of these funding sources. Besides, financial managers also need to focus on strong effect factors and have to combine those factors together, thereby select a suitable target capital structure for the company in each stage of business development. In addition, financial managers should not only consider the specific factors of enterprises when making financial decisions but also need to combine the impacts of the economic environment.

Although this research has gained valuable results, financial managers can get empirical evidence in building target capital structure, but this research still has some limitations: *Firstly,* in the model of determinants for target capital structure, this research mainly uses micro factors that belong to the financial characteristics of enterprises. Macro and corporate governance factors have not been included in the model. *Secondly,* the variables are mainly measured by book values, which is a common problem in developing countries in general and Vietnam in particular. *Third,* the use of the FEM estimation method has not overcome the endogenous problem that may exist in the models. These restrictions are valuable ideas for future research.

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