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## Capital Structure Dynamics: Near vs. Off Target Firms in Sri Lanka

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### Abstract

This research paper aims at examining the determinants of the Speed of Adjustment (SOA) towards the target capital structure of near and off target firms in Sri Lanka. Particularly, it analyses the impact of not only firm-specific factors but also corporate governance factors on target capital structure. The methodology utilizes the benefits of the partial (stock) adjustment model, viz, two step Generalised Method of Moments (GMM) to determine the SOA to target capital structure. The results indicate that there is discernible concrete evidence of dynamic behaviour of capital structure in Sri Lanka. This confirms the applicability of dynamic trade-off theory. The near or off target firms' capital structure adjustment exhibits significant difference in SOA between the two types, implying that off target firms adapt swiftly vis-à-vis those at the doorstep of target firms, in each of the three models. There is a clear indication of both firm related factors and corporate governance factors swaying capital structure adjustment in at least one of the measures of leverage in both situations, very near to and far off from optimum level of debt.

**Keywords:** Corporate Governance, Capital Structure Dynamics, Near vs. Off Target Firms, Generalised Method of Moments (GMM), Speed of Adjustment (SOA).

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### Introduction

Capital structure is winning escalating contemplation by the researchers in corporate financial management. The managers are consciously peering into the role of the capital structure in maximizing the market value of their firms. Therefore, one of the responsibilities of a financial manager is to decide the optimal capital structure for this purpose.

The evolution of theories on structure of capital got off the ground with Modigliani and Miller (1958), who postulated it to be irrelevant. Research work thereafter relaxes assumptions of

Modigliani-Miller theorem (MM), resulting in a variety of theories including the trade-off theory and the pecking order theory (Myers, 1984; Myers & Majluf, 1984). These dominated the literature for decades. Following this, Jensen and Meckling, developed the theory on agency cost in 1976. This tackles the principal- agent and principal – principal predicament of corporate governance of capital structure. Various theories have enjoyed different degrees of prominence over the years. Although the main theories such as trade-off and pecking order in their fundamental forms are based on contrary predictions, empirical results are not consistent with respect to the direction and strength of the relationship between the corporate leverage and its determinants, meaning that there is no universally applicable capital structure theory (Myers, 2001). In recent years, research on capital structure has moved from the theories prevalent then to exploration of determinants of the capital structure in a wider scenario (see Baker & Wurgler, 2002; Malmendier, Tate, & Yan, 2005; Welch, 2004).

The current state of capital structure research includes convergence and persistence of capital structure (Lemmon, Roberts, & Zender, 2008). There is a wide debate on how and at what speed do they converge to this target leverage (Fama & French, 2002; Flannery & Rangan, 2006), while some studies do not support this view (Myers, 1984; Welch, 2004). However, bulk of the literature stipulates that firms adjust their capital structure to the optimal level (Drobetz & Wanzenried, 2006; Flannery & Rangan, 2006; Lemmon et al., 2008).

Furthermore, prior studies (Fama & French, 2002; Flannery & Rangan, 2006; Elas & Florysiak, 2011) reveal that there is a lack of consensus about the determinants of target capital structure; particularly, factors affecting adjustment speed are rarely studied even in very recent literature. However, most of these studies examined the firm related factors. Acknowledging the importance of the specifics of the broader environment in which companies operate, new and expanding areas for better understanding of corporate financial decisions is open, which enables a more comprehensive overview of the nature of different impacts on the corporate capital structure. The current research has taken into account significant aspects of the environment in which firms operate viz. corporate governance factors. The broader environment affecting the capital structure decision is quite open for further research. In spite of this argument in favour of the importance of corporate governance environment, the target capital structure determinants are in general most often examined in terms of firm-level characteristics. This is especially true for emerging economies such as Sri Lanka that are rarely examined. Furthermore, studies in Sri Lankan context in examining financing decisions (i.e., Gamini, 2008; Samarakoon, 1999; Prahalathan, 2010; Sangeetha & Sivathasan, 2013) focused only on determinants of capital structure decision by using OLS regression method, most often in a part of broader set of overall companies listed at Colombo Stock Exchange (CSE). They didn't take into account the speed of adjustment towards optimum capital structure; they ignored the panel nature of the data as well as

the segregation of near and off target firms. Moreover, issues related to corporate governance and their impact on capital structure adjustment have been hardly investigated in the Sri Lankan context. Thus, it is important to conduct a comprehensive study in order to reveal the capital structure adjustment of Sri Lankan companies incorporating more appropriate methodology.

The objective of this study is twofold. The first aim is to explore the capital structure dynamics, mainly in the comparison of near and off target firms. The second aim is to expand the set of potential influential factors in order to evaluate the influence of firm specific and corporate governance factors on the speed of adjustment (SOA) towards target capital structure. Thus, this study contributes to the scarce empirical literature regarding capital structure dynamics of Sri Lankan firms taking into consideration both firm-specific and corporate governance factors. Furthermore, the analysis is performed on dynamic panel data encompassing 90 large companies during the 10-year period by using GMM (Generalized Method of Moments) methodology.

The remaining sections of this paper covers review of literature in section 2, section 3 details research methodology, while empirical analysis and discussion are in section 4 and followed by conclusion in section 5 and limitation in section 6.

## **Review of the Literature**

Birghum and Ehrhardt (2011) have, quite rightly, stated that the capital structure as the mix of equity and debt used to finance assets given on the right side of the balance sheet. The management of the firm itself has to fix their capital structure in a way to maximize their firm value. However, firms have a different level of leverage and managers try to achieve the best mix to attain an optimal capital structure.

Theories of capital structure have been widely documented and tested empirically in literature since the seminal work of Modigliani and Miller (1958). Different theories and hypotheses were presented by many researchers hoping to arrive at the optimal capital structure. The capital structure theories can be grouped into two schools of thoughts Myers (1984). The theories that imply the optimality view of debt - equity choice and other contradictory theories that imply optimal hierarchy in raising funds. Myers (1984) labels these groups as “Trade Off” theory for first group and “Pecking Order” theory for second group.

Static trade off theory seems superior to the original MM’s effort by virtue of holding more realistic assumptions and elucidating more facts, while it has the predicament of explication of the manifest traditional leverage and lacks the perceptible cost of bankruptcy. Myers (1984) suggests that the optimal capital structure of a firm can be attained by trading off the tax benefits

with the bankruptcy costs affiliated to climbing levels of leverage. Further, trade-off theory advocates a reasonable debt ratio as a goal for the corporate to achieve, as a long term strategy. In this manner, a firm can resort to debt as a low cost finance. Savings in tax is a benefit accrued from capitalizing on debt. However, excessive reliance on debt could lead to a possible financial distress. According to the pecking order theory, firms have their financing sources in a preferential order of funding sources, using those with the lowest cost of information asymmetry first (Myers, 1984; Myers & Majluf, 1984). The theory assumes that asymmetry in information causes other agency and bankruptcy costs related to debt. Financing investments is thus based on the order of less and less- asymmetry in information.

Over the revolutionary process, organizations face the agency problem. It arises due to the lack of goal congruence among different stakeholders of a firm. Jensen and Meckling (1976) explored the agency costs that can occur with agency affinity, such as between principal (shareholder) and agent (manager) or also between principal (creditor) and principal (owners). The costs associated with owner - manager affinity arises from two sources viz, asymmetry of information and moral hazards. While there is limited direct studies on this theory due to dearth of measurability of agency costs. The theory of dynamic capital structure is formulated by Fischer, Heinkel, and Zechner (1989), taking into account the transaction costs. The dynamic adaptation of the trade-off theory explains that firms do have a target that maximizes its value, since deviations from target are costly. However over time, firms gradually move at an improved adjustment speed, in order to converge towards its target.

In the last decade, a considerable amount of research has been dedicated to determine whether firms have target /optimum capital structure, and which factors affect the optimum leverage ratio, the speed at which firms move toward the optimal capital structure, as well as what are the determinants speed of adjustment. There are noticeable differences existing in the estimated speed at which firms try to converge to their optimal leverage. A group of researchers found a comparatively slow SOA; for example Fama and French (2002) found SOA to be between 7 per cent and 18 per cent per year. Contrarily, Flannery and Rangan (2006) estimated it to be a rate of more than 30 per cent per year. In comparison to prior studies, they put special emphases on the econometric methods and the model specification, underscoring the need to take the panel nature of the data into account. Further, it appears that leverage is converging towards optimum but the speed at which this happens is not a settled issue (Frank & Goyal, 2008).

The core of this study is examining the determinants of the SOA, particularly, firm related and corporate governance factors. The existing literature has offered mixed results of determinants on the speed of adjustment (SOA) toward target capital structure with empirical evidence concentrated more in developed countries than in developing countries. Ozkan (2001)

explored the determinants of optimal capital structure of UK firms. This study confirmed that profitability and liquidity have an effect on target debt ratio. Gaud, Jani, Hoesli, and Bender (2005) studied the speed of adjustment of Swiss firms. They reported that size, profitability, growth and tangibility influence on the use of debt. Drobetz and Wanzenried (2006) investigated how firm-specific characteristics as well as macroeconomic factors affect the speed of adjustment to the target debt ratio in a sample of 90 Swiss non-financial firms. They found that growth and business cycle variables have significant influence on the speed of adjustment. Getzmann, Lang, and Spremann (2010) documented the determinants speed of adjustment towards target capital structure in a sample of 1301 non-financial firms listed in Asian financial markets. They found the existence of target debt\_ equity ratio of Asian firms. Further, common determinants of capital structure are found to be profitability and tangibility. Empirical evidences on corporate governance and speed of adjustment is limited. Morellec, Nikolov, and Schurhoff (2012) explained that firms with weak corporate governance use less debt and have slower adjustment towards target. Berger, Ofek, and Yermack (1997) found the debt amount is lower when CEOs do not face pressure from ownership, compensation incentives or active monitoring. On the other hand, Fosberg (2004) argued that firms with duality in leadership have high debt to equity ratio due to less issues related to separation of ownership and control. Family ownership structure dominates in emerging economies, thereby triggering agency problems (Schulze, Lubatkin, & Dino, 2002) and thus affects the adjustment costs, resulting in a lesser speed of adjustment.

The area of target capital structure is relatively unexplored in Sri Lanka. There are only a few studies in the view of understanding capital structure decision conducted in Sri Lanka. Senerathne (1998) found the applicability of pecking order theory partially by analysing the capital structure of Sri Lankan companies. Samarakoon (1999) revealed that use of long term debt is relatively low in Sri Lanka. He further found out that firm's size and profitability were significant determinants of leverage. Colombage (2005) in his examination of the capital structure of Sri Lankan companies also found that they resort to financing in keeping with the pecking order hypothesis, by and large. Prahalathan (2010) found that the direction of the explanatory variables such as, tangibility, profitability, firm's size and non-debt tax shields together with total debt to be largely consistent with the trade - off theory and thus underwrites past empirical findings. As it has already been pointed out, there is greater interest for the empirical examination of theoretical predictions and capital structure determinants at firm level. However, most studies rarely take into account corporate governance in their capital structure studies (Hewa Wellalage & Locke, 2012).

From the above, it can be concluded that literature on adjustment speed of capital structure is virtually non-existent in Sri Lanka. Furthermore, unlike previous research on capital structure, this study focuses on identifying which factors affect speed of adjustment towards target capital

structure, while comparing near and off target firms as well as adjusted for the panel nature of the data. This study, therefore, contributes to the very limited empirical literature by bridging these identified gaps.

## **Research Methods**

### *Data*

The data used in this study are of a panel nature, which enrich empirical analysis. Data for this study are collected from secondary sources. Sample firms listed at CSE are selected based on judgment sampling. As at 31<sup>st</sup> March 2004, CSE had about 240 listed firms representing 20 sectors. However, sample data covers a representative sample of Sri Lanka's nonfinancial firms listed on the CSE. The companies under banking, finance and insurance sectors were eliminated due to special regulations of preparing financial statements. Out of the 209 nonfinancial sector firms, initially top 100 firms (excess of 40 per cent of the population) are selected based on highest market capitalization to guarantee the corporate governance practices at least by these larger firms. Finally, the sample of 90 listed nonfinancial firms included only those companies for which complete annual data on all the variables used for the study was available together with the same pattern of financial year ending. The study analyses the data covering a period of 10 years, viz data from the period of 2004/2005 to 2013/2014 was considered to ensure that the latest available set of data is used to explore the current trends and affinity in optimizing capital structure.

Sri Lankan financial data before 2007 is limited, at least in the electronic format. The data related to company level variables like profitability; size, tangibility, growth and non-debt tax shields used in this paper have been extracted from the hand books of the CSE and Data library CD from the CSE. Additional data were elicited from the CSE's list of firms as well as annual reports of the respective companies in the CSE website. On the other hand, information related to corporate governance practices, like board size, percentage of non-executive directors, CEO duality, ownership type and percentage of directors' compensation were directly gathered from the company's audited annual reports each year. The data for years 2004 to 2007 were taken from the hard copies of the CSE library and that for the years 2008 to 2014 were extracted in electronic format from CSE website or company website. Most of the variables (dependent and independent factors) used in this study are generally known and their measurement is largely adopted from the existing literature (see Appendix 1). This study further employed three debt ratios, viz, total debt ratio served as model 1, long term debt ratio served as model 2 and short term debt ratio served as model 3 as alternative measure of leverage, is utilised as the dependent variable in this study. Appendix 2 illustrates the detailed statistics of the factors used in this study. It shows the mean, median, standard deviation, minimum and maximum of each factor. There are two categories for

independent variables. First category is firm specific variables (panel B). The second category is corporate governance variables (panel C).

### ***Two-Step Dynamic Partial Adjustment Model***

Consistent with more recent and preceding studies, Fama and French (2002), Korajczyk and Levy (2003), Flannery and Rangan (2006), at the initial step in this study the target leverage is calculated by estimating regressions based proxies of the true debt ratio on the firm level variables. There are five factors such as profitability, size, growth, non-debt tax shield and tangibility that are widely used as proxies to set the desired optimum leverage ratio. The dependent variables, as stated above, are the three measures of firm's leverage ratio which are the ratio of total debt, long term debt and short term debt to total assets, in alternative measurements. Further, the target leverage is unobservable and hence, is proxied by the fitted value from a panel regression of observed leverage, on a set of firms' characteristics, in the first step. Target leverage ratio for firm  $i$  in period  $t$ , is specified as  $Lev^*_{it}$ .

$$LEV^*_{it} = \beta_0 + \beta_1 PROF_{it} + \beta_2 SZ_{it} + \beta_3 TANG_{it} + \beta_4 GROW_{it} + \beta_5 NDTs_{it} + \gamma_t + \eta_i \quad (1)$$

where  $\beta_0$  is the constant term,  $\beta_1 - \beta_5$  are the coefficients of the independent firm specific variables,  $i$  is listed firm,  $t$  is time or year, LEV is loan ratio (total, long term and short term loan ratio at alternative estimation), PROF is profitability, SZ is size, TANG is tangibility, GROW is growth, NDTs is non debt tax shields,  $\gamma_t$  and  $\eta_i$  are time and firm fixed effects.

Following the dynamic partial adjustment model, the firm's observed leverage ratio at any point in time does not, by and large, equal its target leverage ratio. This can be represented by a dynamic partial adjustment model as in Equation 2.

$$Lev_{it} - Lev_{it-1} = \lambda_{it} (Lev^*_{it} - Lev_{it-1}) + \varepsilon_{it} \quad (2)$$

where,  $Lev_{it}$  and  $Lev_{i, t-1}$  symbolize leverage in time's  $t$  and  $t-1$ ,  $\lambda_{it}$  stand for SOA while  $\varepsilon_{it}$  is the error term. The consequence of the cost of adjustment is illustrated by the constraint, viz.  $|\lambda| < 1$ , which is a prerequisite for  $Lev_{i, t-1}$  to tend to  $Lev^*_{i,t}$ , as  $t \rightarrow \infty$ . In the second step, GMM is used to estimate SOA and its determinants are estimated by employing the target proxy derived in the first step.

$$Lev_{it} = Lev_{it-1} + \lambda_{it}(Lev_{it}^* - Lev_{it-1}) \quad (3)$$

$$Lev_{it} = (1 - \lambda_{it})Lev_{it-1} + \lambda_{it}\left(\sum_{j=1}^L \alpha_j X_{jit} + \varepsilon_{it}\right) \quad (4)$$

It can be rewritten as

$$Lev_{it}^* = \delta_0 Lev_{it-1} + \sum_{j=1}^L \delta_j X_{jit} + \omega_{it} \quad (5)$$

where  $\delta_0 = 1 - \lambda_{it}$ ;  $\delta_j = \lambda_{it}\alpha_j$  and  $\omega_{it} = \lambda_{it}\varepsilon_{it}$

The Equation 5 is used to estimate the dynamic capital structure model.

The speed of adjustment is labeled as  $Z_{it}$  that could be either a firm-specific or a corporate governance variable. Specifically,

$$\lambda_{it} = \beta_0 + \beta_j Z_{it} \quad (6)$$

Rewriting the target adjustment model in Equation 3, treating target leverage,  $Lev_{it}^*$ , as linearly dependent on the capital structure determinants as specified in Equation 2, and substituting the linear specification for adjustment speed,  $\lambda_{it}$ , from Equation 6, yields the following expression for the leverage ratio at time  $t$ .

$$Lev_{it} = \lambda_{it}Lev_{it}^* + (1 - \lambda_{it})Lev_{it-1} + \varepsilon_{it} = (1 - \beta_0 - \beta_j Z_{it})Lev_{it-1} + (\beta_0 + \beta_j Z_{it})\left(\sum_{j=1}^L \alpha_j X_{jit}\right) + \varepsilon_{it} \quad (7)$$

where  $\varepsilon_{it}$  is the error term. Multiplying Equation 7 out, and taking into consideration that all estimations are carried out with panel data, we arrive at Equation 8, which is subject to our empirical investigation.

$$Lev_{it} = (1 - \beta_0)Lev_{it-1} - \beta_j Z_{it} Lev_{it-1} + \beta_0 \sum_{j=1}^L \alpha_j X_{jit} + \beta_j \sum_{j=1}^L \alpha_j Z_{it} X_{jit} + \varepsilon_{it} \quad (8)$$

## Empirical Results and Discussion

The sample is divided into two subsamples, based on the deviation (gap) of actual debt ratios from the target (i.e.  $Lev_{i,t}^* - Lev_{i,t-1}$ ) regardless of the direction of the deviation. It is created based on 50<sup>th</sup> percentile (median value) as cut off point. Thereafter, it is grouped as firms below the median as ‘near target firms’ and above the median as ‘off target firms’. Difference GMM



Model is estimated for the two sub-samples of firms close to the target and firms far from the target. Findings based on different leverage proxies are compared with each other.

### ***Tests for Data and Models***

*The unit root test of panel data.* Stationarity can be tested by finding out if the time series contains a unit root. There are various panel unit root tests. The test proposed by Levin, Lin, and Chu (LLC) (2002) is used for this purpose.

Appendix 3 presents the panel unit root tests. Based on the results, it can be concluded that for all the variables, the null of a unit root is rejected (in all cases). At 5 per cent significance level, the LLC model confirmed that the variables are stationary.

*Correlation analysis.* To test the existence of multicollinearity among the independent variables, we perform correlation analysis which examines the degree of association between any two variables. The results of correlation analysis are shown in the Appendix 4. There is no clear-cut criterion for evaluating multicollinearity of linear regression models. It will be seen that most cross-correlation terms for the explanatory variables are not high values. However, the few exceptions that are there give no cause for concern about the problem of multicollinearity among the explanatory variables, since the study adopted efficient and appropriate models, such as fixed effect and GMM to deal with this issue.

### ***Results of Near and Off Target Firms***

The results are reported in the Table 1 given below. For diagnosis, the significant chi square value of Wald test indicates the joint significance of all selected independent variables to dependent variable. Thus all the descriptive factors could be incorporated in the models. Insignificance of *J*-statistic shows the validity of the instruments. Adopting the suggestions by Arellano and Bond (1991) regarding serial correlation, this result rejects the AR2 correlation of the residuals required for GMM estimation.

The Table 1 shows that the lagged leverage is the most important determinant of current leverage. It clearly underwrites the existence of optimum leverage in the case of all measures of leverage for near and off target Sri Lankan firms, thus providing evidence supporting the dynamic trade-off theory. However, the adjustment speed is dissimilar between near and off target firms. It relies on the size of the gap as well as the cost involved in bridging the gap.

**Table 1: Results of Near/Off target firms**

	Near Target Firms			Off Target Firms		
	Model 1 Total debt ratio	Model 2 Long term loan ratio	Model 3 Short term debt ratio	Model 1 Total debt ratio	Model 2 Long term loan ratio	Model 3 Short term debt ratio
Lev(-1)	<b>0.4135***</b> (0.012)	<b>0.4563***</b> (0.013)	<b>0.3932***</b> (0.038)	<b>0.3247***</b> (0.010)	<b>0.3337***</b> (0.012)	<b>0.1333***</b> (0.010)
Adjustment speed(1- λ)	<b>0.5865</b>	<b>0.5437</b>	<b>0.6068</b>	<b>0.6753</b>	<b>0.6663</b>	<b>0.8667</b>
Independent variables Panel A: Firm specific variables						
PROF	<b>-0.0155***</b> (0.003)	<b>0.0164***</b> (0.006)	-0.0022 (0.002)	<b>0.0155***</b> (0.002)	<b>0.0091***</b> (0.001)	0.0009 (0.001)
SZ	<b>0.0097***</b> (0.003)	0.0039 (0.003)	0.0046 (0.004)	<b>0.0045**</b> (0.002)	0.0007 (0.001)	8.76E-05 (0.002)
GROW	2.73E-05 (3.24E-0)	-1.87E-06 (4.70E-0)	-0.0001 (6.94E-0)	-5.13E-05 (4.23E-0)	<b>-5.15E-05***</b> (1.34E-05)	<b>-0.0002***</b> (0.002)
TANG	<b>0.0358***</b> (0.011)	-0.0012 (0.009)	<b>0.0840***</b> (0.012)	<b>0.0735***</b> (0.010)	<b>-0.0106***</b> (0.003)	<b>-0.0454***</b> (0.006)
NDTS	-0.3461 (0.214)	-0.1592 (0.097)	<b>0.4502***</b> (0.103)	0.0942 (0.055)	<b>0.1908***</b> (0.034)	0.0062 (0.044)
Contd.						

	Near Target Firms			Off Target Firms		
	Model 1 Total debt ratio	Model 2 Long term loan ratio	Model 3 Short term debt ratio	Model 1 Total debt ratio	Model 2 Long term loan ratio	Model 3 Short term debt ratio
Independent variables Panel B: Corporate governance variables						
Board size	<b>0.0258***</b> (0.003)	<b>0.0127***</b> (0.001)	0.0001 (0.004)	0.0006 (0.002)	<b>0.0070***</b> (0.002)	<b>-0.0017**</b> (0.001)
% non-executives	0.0336 (0.027)	0.0143 (0.018)	0.0443 (0.041)	<b>-0.0223**</b> (0.010)	<b>-0.0307***</b> (0.006)	<b>-0.0860***</b> (0.006)
CEO_ Chairman duality	<b>-0.0460***</b> (0.005)	<b>-0.0097***</b> (0.003)	<b>-0.0887***</b> (0.033)	-0.0078 (0.005)	<b>0.0045***</b> (0.001)	<b>-0.0063***</b> (0.002)
Family _ownership	<b>0.0079**</b> (0.003)	0.0032 (0.002)	0.0372 (0.032)	0.0035 (0.002)	0.0006 (0.000)	<b>0.0059***</b> (0.001)
% Directors' compensation	<b>-0.0037***</b> (0.001)	0.0006 (0.001)	<b>0.0016**</b> (0.001)	<b>-0.0023***</b> (0.000)	<b>0.0016***</b> (0.000)	<b>-0.0032***</b> (0.000)
1 <sup>st</sup> order correlation	-1.667	-0.344	-7.116***	-4.333***	- 2.727***	-2.548**
2 <sup>nd</sup> order correlation	NA	NA	2.169	0.439	1.694	0.308
Wald( joint) $\chi^2$	9446.38***	2547.30***	863.29***	5004.40***	5852.83***	1531.84***
J- statistics	34.23	32.95	40.72	33.36	35.93	39.19
No. of observations	360 (45firms)					

Note: Coefficients that are significantly different from zero at the 5% level is marked with \*\*and at the 1% is marked with \*\*\*. Robust standard errors are given in the parenthesis.

Interestingly, notable variances in adjustment speeds between the two samples. This is consistent with the prior studies (Clark, Francis, & Hasan, 2009; Flannery & Hankins, 2007; Lemmon et al., 2008). The adjustment speeds for near target firms are about 59 per cent, 54 per cent and 60 per cent with respect to total debt ratio, long term debt ratio and short term debt ratio, while that for far off target firms are about 67 per cent, 66 per cent and 86 per cent respectively to the three different measures of leverage. These findings clearly portray that off target firms are adjusting quickly than firms near target ones, since the costs otherwise are significantly greater for off target firms. Hence, adjustment to the goal is of prime importance irrespective of the market situation of the company.

Before interpreting the results of the coefficients of determinants of SOA from the Equation 8, it can be seen that the coefficient of the mutual conduct expression of lagged worth of coefficient and the determinants of speed of adaptation are negative ( $-Z_{it}Lev_{it-1}$ ). It logically follows that it is vital to translate the signs of the estimates of the relevant coefficients pertaining to the interaction terms suitably. When the interaction term is negative, speed of adjustment is high (or of positive affinity) and when the interaction term is positive, the speed of adjustment is low (or of negative affinity) (Drobotz & Wanzenried, 2006; Mukherjee & Mahakud, 2010).

Looking at the firm level factors and their effects on SOA, there are some similarities and dissimilarities between near target and off target leverage. The association between profitability and the different definitions of leverage indicates mixed results in all the cases, as per the results reported in Table 1, though, it has significant (at 5 per cent) influence with total debt ratio and long term debt ratio in both group of samples. The positive significance coefficients except with total debt ratio under near target firms explain the negative relationship, viz, slower adjustment towards target debt ratio. This is consistent with firms with higher profits and thus greater availability of internal funds leading to a sluggish adjustment toward optimum leverage, (Phungrasamee, 2004). The same significant negative affinity is only found between company's size (SZ) and total debt ratio of both near and off target firms, indicating that larger firms are slow in adjustment via-a-vis smaller firms. This is due to their proximity to capital markets, whereby they are able to take their target adjustment decisions lightly (Titman & Wessels, 1988). Growth variable has significant positive effect towards target adjustment under model 2 and 3 only in the case of off target firms. It conforms to the general opinion that growing companies are alert to utilize the bigger opportunity they have, to alter their capital structures by changing the composition of debt-equity mix. This implies faster adjustment to target capital structure. For near target firms, the variable tangibility implies a significantly slower capital structure adjustment except with long term debt ratio. On the other hand, for off target firms, asset structure exhibits an insignificant influence in aiding capital structure adjustment at all the three leverage proxies, though the sign of the coefficients vary among leverage ratios. Lastly, non-debt

tax shield has a negative significant relationship with short term debt ratio under near target firms and long term debt ratio under off target firms and thus results in slower adjustment speed in both scenarios.

Panel B of Table 1 contains the results of the investigation of the relationship between corporate governance measures and SOA. Corporate governance variables, exhibit varied relationship with SOA, with respect to near and off target firms. For near target firms, board size shows a negative significant association except with short term debt ratio. This implies that board follow a relaxed approach in adjusting towards target since they are already in close proximity to the target, while mixed results could be found in the case of off target firms. Percentage of non-executive directors pursues a significant positive influence on the target adjustment in off target firms; but the results are insignificant with all three definitions of leverage in near target firms. The presence of non-executive members on board will help to mitigate the undue power of executives in decision making, averting sub-optimization. This augurs well for the active role of non-executives' action toward capital structure adjustment, particularly when the firms are far away from their targets. Consideration of CEO duality (i.e. CEO is also the chairman of the board) leads to positive significant results in the case of near target firms under all three models. Duality leadership minimizes communication barriers in a murky environment and creates a clear sense of strategic decision making thereby contributing to faster capital structure adjustment. But, in the case of off target firms, the signs of the coefficients are unclear and consequently the results are mixed. This study finds across all leverage measures, the coefficient of family ownership factor is only significant in total debt ratio in near target firms and short-term debt ratio in off target firms. This is supported by the findings by Mishra and McConaughy (1999), that family owned firms use less debt and thus have low propensity to target debt adjustment. Percentage of directors' compensation variable confirms the significant relationship with adjustment speed, except under model 2 for near target firms, but the sign of the coefficients implies mixed results. Previous empirical findings on this topic are unclear. A favourable affinity between CEO's remuneration and the company's leverage is acknowledged by Jensen and Meckling (1976), and Berger et al. (1997), though Friend and Lang (1988) did oppose this.

On the whole, where partitioning the entire sample into near target firms and off target firms is done, the above results suggest that off target firms would adopt a higher SOA displaying solid evidence over different target leverage proxies. These results provide convincing evidence that off target firms are more active in mitigating leverage gap than near target firms, a significant benefit being avoidance of bankruptcy risk. Thus, there is an authentication of applicability of dynamic trade off theory in Sri Lankan firms. Though, there is mixed evidence of the factors affecting these dynamics of adjustment among not only the leverage ratios, but also the

consideration of the firms closer to as well as far away from target, there is a clear indication of influence of these factors at least with one of the measures of leverage in both groups.

## Conclusion

Contemplation on the near/off target firms' capital structure adjustment exhibited the consequential disparity in SOA between the two samples, implying that off target firms adapt swiftly vis-à-vis those at the doorstep of target firms irrespective of which of the three models is considered; i.e. off target firms adapts with vigor vis-à-vis near target firms. Puzzling behaviour of the factors impacting adjustment speed did manifest in this research when the firms were either close to target debt ratio or far away from it. Nevertheless, there is a clear testimony of both firm related factors as well as corporate governance factors swaying capital structure adaptation at least with one of the measures of leverage in both situations of whether firms are very near to or far off from optimum level of debt. Being among the very much limited studies done on the dynamic aspects of capital structure in Sri Lanka, this study, while indeed shedding useful light on the literature, throws open the doors for furtherance of research that would enrich the literature, simultaneously being of great value to the diverse stake holders of the corporate world.

The unfortunate reality, is that the secondary data deployed, in this study exposes it to all limitations inherent to secondary data. Another limitation of this study is the assumption that accounting practices followed by the firms are the same. Future research is recommended to be focused on the examination of the adjustment speed to the structure, at the maturity of debt. The peculiar nature of financial statements of the financial sector firms disqualified them from this research. Nonetheless, the financial storm that smashed bank edifices and shook the nested global financial realm could be a worthy arena to unravel the 'capital structure puzzle' and its adaptation in the financial sector firms. Extrapolation of the research to two or more countries of similar nature, preferably in the emerging market scenario, is likely to elicit specifics, if any, of their capital structure. Further, the inclusion of industry effects would grant better insights into the adjustment behaviour of listed firms.

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## Appendices

### Appendix 1: Measurement of Variables

Variables	Acronym	Measurement	Empirical Evidences
Model 1 : Total debt ratio	TDR	Ratio of book value of total debts to book value of total assets.	Rajan and Zingales (1995), Bevan and Danbolt (2002)
Model 2: Long term loan (debt) ratio	LDR	Ratio of book value of long term liabilities to book value of total assets.	Bevan and Danbolt (2002)
Model 3: Short term loan (debt) ratio	SDR	Ratio of book value of current liabilities to book value of total assets	Bevan and Danbolt (2002)
Profitability	PROF	The ratio of profit before tax (PBT) to capital employed (TA - CL)	Rajan and Zingales (1995), Titman and Wessels (1988)
Size	SZ	Natural Logarithm of total annual sales	Rajan and Zingales (1995), Titman and Wessels (1988),
Growth	GROW	The ratio of market capitalization to common equity.	Rajan and Zingales (1995), Frank and Goyal (2009),
Tangibility	TANG	The ratio of fixed assets to total assets	Rajan and Zingales (1995), Frank and Goyal (2009)
Non debt tax shields	NDTS	The ratio of depreciation to total assets (annual)	Titman and Wessels (1988)
Board size	BSIZE	Number of board members	Abor (2007)
CEO-Chairman duality (Dummy)	DUALITY	One if the CEO is the Chairperson of the board; otherwise, set to zero	Fosberg (2004)

Contd.

<b>Variables</b>	<b>Acronym</b>	<b>Measurement</b>	<b>Empirical Evidences</b>
% non executive directors	NONE	The ratio of number of non executive directors to total number of directors on a board	Weisbach (1988)
% Directors' compensation	COMPENSATION	The ratio of directors' gross compensation to total staff costs. Total remuneration of directors include salary + sitting fees+ contribution to PF+ bonus+ retirement benefits+ perquisites	Researcher defined
Family ownership (Dummy)	OWNER	One if a person/ a family/ a closely held company is the controlling shareholder, or hold at least 50% of shareholding by a family or if a company owns 20% of shares in another company or otherwise, set to zero.	La Porta, Lopez-de-Silanes, Shleifer, and Vishny(1999)
Leverage Gap/ deviation	DEV	Deviations of current leverage from the optimum leverage ratio	Faulkender, Flannery, Hankins, and Smith (2012)

## Appendix 2: Descriptive Statistics

	<b>Mean</b>	<b>Median</b>	<b>Standard deviation</b>	<b>Minimum</b>	<b>Maximum</b>
<b>Panel A: Dependent Variable</b>					
Total debt ratio ( Model 1)	0.431	0.430	0.280	0.0023	2.459
Long term debt ratio (Model 2)	0.192	0.116	0.216	0.000	1.478
Short term debt ratio (Model 3)	0.239	0.208	0.179	0.007	1.082

<b>Panel B: Firm specific variables</b>					
<b>Profitability</b>	0.122	0.096	0.216	-1.066	2.723
<b>Size</b>	20.810	20.985	1.787	14.548	25.139
<b>Growth</b>	15.220	4.620	20.550	0.210	199.000
<b>Tangibility</b>	0.494	0.495	0.290	0.0009	0.993
<b>Non debt tax shields</b>	0.026	0.021	0.029	0.0000	0.341

  

<b>Panel C: Corporate governance variables</b>					
<b>Board size</b>	7.758	7.000	2.053	4.000	14.000
<b>% Non-executive directors</b>	0.623	0.639	0.221	0.000	1.000
<b>% Directors compensation</b>	0.119	0.035	0.245	0.000	3.787

### Appendix 3: Unit Root Test

<b>Levi, Lin &amp; Chu (LLC)</b>	
<b>Independent Variables</b>	
Profitability	-62.540***
Size	-3.329***
Growth	-7.597***
Tangibility	-9.372***
Non debt tax shields	-38.594***
Board size	-15.901***
% Non-executive directors	-97.768***
% Directors' compensation	-12.208***
<b>Dependent variables</b>	
Total debt ratio	-14.417***
Long term debt ratio	-30.425***
Short term debt ratio	-8.943***

Note: \*\*\* denotes significant at 1% level

**Appendix 4: Correlation Analysis**

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	<b>PROF</b>	<b>SIZE</b>	<b>GROW</b>	<b>NDTS</b>	<b>TANG</b>	<b>BSIZE</b>	<b>% Non-executives</b>	<b>% Directors Compensation</b>
PROF	1.0000							
SIZE	0.1188	1.0000						
GROW	0.0908	0.1379	1.0000					
NDTS	-0.0806	0.1565	0.0124	1.0000				
TANG	-0.1221	-0.1379	0.0923	0.1100	1.0000			
BSIZE	0.0168	0.0920	-0.0396	-0.0607	0.1319	1.0000		
% Non-executives	0.0346	0.0188	-0.124	0.0281	0.0387	0.6098	1.0000	
% Directors Compensation	0.0052	0.0413	0.0051	-0.0518	-0.0313	0.0608	0.0655	1.0000

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