The Determinants of Capital Structure: An empirical Analysis of Listed Manufacturing Companies in Colombo Stock Exchange Market in SriLanka

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ABSTRACT

Capital structure/leverage level of the firm determined by several factors. Proper capital structure leads the firm to achieve the better performance and ensures the sustainability in its operation. Even though there are several factors contribute to the institutional performance, determinants of the capital structure play an important role. Therefore it is necessary to identify that what are factors contribute to the firms' capital structure composition in its operation. Hence the present study was undertaken with the objective of finding out the relationship between capital structure determinants and leverage level of the listed companies in SriLanka. Using a multiple regression analysis, the leverage behavior of the listed manufacturing companies in Colombo stock exchange market in SriLanka was examined for the period of 2003-2007. The final sample consists of 19 manufacturing companies. In this study, dependent variable that is, leverage level of the companies, is measured by long- term debt ratio, short-term debt ratio and total debt ratio. Capital structure determinants (independent variables) are measured by capital intensity, tangibility, profitability, firm size and non-debt tax shield. Findings showed that the direction of the explanatory variables such as, tangibility, profitability, firm size and non-debt tax shields **with total debt** largely consistent with the explanations of trade - off theory and prove past empirical findings also.

Keywords: Capital Structure, leverage, determinants of capital structure, debt, trade-off

theory, pecking order theory

1.0 Introduction

In finance the capital structure is the most debatable topic and continues to keep researchers pondering. Capital structure refers to the mix of debt and equity used by a firm in financing its assets. The capital structure decision is one of the most important decisions made by financial management. The capital structure decision is at the center of many other decisions in the area of corporate finance. These include dividend policy, project financing, issue of long term securities, financing of mergers, buyouts and so on. One of the many objectives of a corporate financial manager is to ensure the lower cost of capital and thus maximize the wealth of shareholders. Capital structure is one of the effective tools of management to manage the cost of capital. An

optimal capital structure is reached at a point where the cost of the capital is minimum. Much of the empirical research on the determinants of firm's capital structure has been directed largely towards companies listed in developed countries, such as the US, UK and Western Europe. More recent studies have examined companies listed in developing countries. There is very few published work on determinants of leverage in SriLankan companies and this paper intends to contribute further evidence to this debatable topics. In this study, determinants of capital structure in SriLankan context are examined. So, the objective of this paper is to examine the factors correlated with the leverage in the SriLankan listed companies.

2.0 Objectives of the Study

The objective of this study is to investigate the impact of the determinants of capital structure of listed company in SriLanka during the period 2003 - 2007.The objectives are,

- To find out the significant factors which are determining the long -term debt level.
- To find out the significant factors which are determining the short- term debt level.
- To find out the significant factors which are determining total debt level.
- To evaluate the trend of the determinants of the capital structure during the last five years of manufacturing firms in SriLnka.

3.0 Empirical Determinants of Capital Structure

Theoretical constructs of any empirical research are proxied indirectly through the use of firm characteristics. The links between the theoretical determinants and the variables chosen in the empirical studies are complex. In the following, capital intensity, tangibility of assets, profitability, firm size, non – debt tax shield are discussed.

3.1 Capital Intensity

Capital intensity, or the employment of fixed assets, is generally synonymous with the concept of operating leverage. Thus, increased capital intensity implies increased risk of future earnings variation. Therefore, top management's desire to retain control of the firm, and the concern of creditors to limit risk of default, should result in lower debt levels for firms choosing automation over labor as the primary factor of production, ceteris paribus (Barton and Gordon, 1988). On the other hand, the traditional argument is the more capital intensive a firm is, larger will be the need for long-term debt by the firm due to larger financial requirements and it will also have access to assets which could be collateralized. So, this study hypothesizes that ceteris paribus, capital intensity to be negatively related to total debt and short-term debt and positively related to long-term debt.

3.2 Tangibility of Assets

As Booth et al. (2001) state: "The more tangible the firm's assets, the greater its ability to issue secured debt."A firm with large amount of fixed asset can borrow at

relatively lower rate of interest by providing the security of these assets to creditors. Having the incentive of getting debt at lower interest rate, a firm with higher percentage of fixed asset is expected to borrow more as compared to a firm whose cost of borrowing is higher because of having less fixed assets. Thus a positive relationship between tangibility of assets and leverage is expected. Several empirical studies confirm this suggestion, as Rajan and Zingales (1995), Friend and Lang (1988), and Titman and Wessels (1988) find.

3.3 Profitability

There are conflicting theoretical predictions on the effects of profitability on leverage. Following the pecking-order theory, profitable firms, which have access to retained profits, can use these for firm financing rather than accessing outside sources. Jensen (1986) predicts a positive relationship between profitability and financial leverage if the market for corporate control is effective because debt reduces the free cash flow generated by profitability. From the Trade-off theory point of view more profitable firms are exposed to lower risks of bankruptcy and have greater incentive to employ debt to exploit interest tax shields. Most empirical studies observe a negative relationship between leverage and profitability (Huang and Song (2002), Booth et al. (2001), Titman and Wessels (1988), Friend and Lang (1988), Kester (1986), and Rajan and Zingales (1995) for G7 countries except for Germany). A negative relationship between profitability and leverage is expected in this study.

3.4 Firm Size

There are two conflicting viewpoints about the relationship of size to leverage of a firm. First, large firms don't consider the direct bankruptcy costs as an active variable in deciding the level of leverage as these costs are fixed by constitution and constitute a smaller proportion of the total firm's value. And also, larger firms being more diversified have lesser chances of bankruptcy (Titman and Wessels 1988). Following this, one may expect a positive relationship between size and leverage of a firm. Second, contrary to first view, Rajan and Zingales (1995) argue that there is less asymmetrical information about the larger firms. This reduces the chances of undervaluation of the new equity issue and thus encourages the large firms to use equity financing. This means that there is negative relationship between size and leverage of a firm. Following Rajan and Zingales (1995), a negative relationship between size and leverage of the firm is expected.

3.5 Non-Debt Tax Shield

In order to reduce the tax bill, firms want to exploit the tax deductibility of interest. If they have other tax deductible item which they can use as tax shield other than debt then the leverage is low. So, there exists a negative relationship between non debt tax shield and leverage. DeAngelo and Masulis (1980) say that non-debt tax shields can be substitutes for the tax benefits of debt financing and a firm with larger non-debt tax shields is expected to use less debt. Past empirical studies also show mixed results about the relationship of non-debt tax shield and leverage. Gardner and Trcinka (1992) find a positive relationship between non-debt tax shield while Shenoy and

Koch (1996) find a negative relation. This study expects a negative relationship between non – debt tax shield and leverage.

4.0 Methodology

This section provides information about the source of data, sample size, measurement of the variables, hypotheses formulation and model selection and discussion of different measures of the variables,

4.1 Source of Data

This study is based on the financial data of sample firms from 2003-2007 and has been taken from Colombo stock exchange's (CSE) hand book of listed companies.

4.2 The Sample

As this study has focused on the Manufacturing Sector, initially all the 31 firms (which are listed on the Colombo Stock Exchange) in the manufacturing sector were selected. Then after screening the firms with incomplete data were left with only 19 firms. So we have 95 firm-years for panel data analysis.

4.3 Model of Study

The study examines the determinants of capital structure of manufacturing firms in SriLanka. Three Linear multiple regression model are used in this study based on model used in Ram Kumar Kalkani et al (1998) with some modification in explanatory measures due to lack of data availability in selected firms. The study uses three different measures of capitals structure, based on book value. They are, long – term debt ratio (LTDR), short – term debt ratio (STDR) and total debt ratio (TDR). The independent variables used in this study include capital intensity (CAPINT), tangibility (TANG), profitability (PROF), firm size (FSIZE), and non-debt tax shield (NDTS). Based on the dependent variable three multiple regression models have been used to estimate the determinants of capital structure. The models are as follows.

Model – I

$$\mathbf{LTDR} = \alpha + \beta_1 \mathbf{CAPINT} + \beta_2 \mathbf{TANG} + \beta_3 \mathbf{ATO} + \beta_4 \mathbf{PROF} + \beta_5 \mathbf{FSIZE} + \beta_6 \mathbf{NDTS} + \beta_7 \mathbf{CVA} + \in$$

Model – II

$$\mathbf{STDR} = \alpha + \beta_1 \mathbf{CAPINT} + \beta_2 \mathbf{TANG} + \beta_3 \mathbf{ATO} + \beta_4 \mathbf{PROF} + \beta_5 \mathbf{FSIZE} + \beta_6 \mathbf{NDTS} + \beta_7 \mathbf{CVA} + \in$$

Model – III

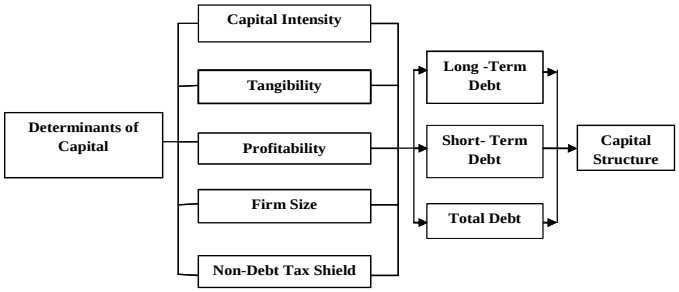
$$\mathbf{TDR} = \alpha + \beta_1 \mathbf{CAPINT} + \beta_2 \mathbf{TANG} + \beta_3 \mathbf{ATO} + \beta_4 \mathbf{PROF} + \beta_5 \mathbf{FSIZE} + \beta_6 \mathbf{NDTS} + \beta_7 \mathbf{CVA} + \in$$

Where, α, is constant, β_1, β_2, β_3, β_4, β_5, β_6, β_7 are coefficients of variables, $\in$, is residual term.

4.5 Conceptual Framework

The following conceptual model is formulated to disclose the relationship between determinants of capital and capital structure of the companies.

Figure.1 Conceptual Framework



4.6 Operationalisation

Key concepts and variables used in the conceptual frame work are operationalized as follows:

Table.1 Key Concepts and Selected Variables

Variable	Indicator	Measurement Level	Measurement
Capital Structure	Long -Term Debt Ratio	Ratio	$\frac{\text{Long Term Debt}}{\text{Equity} + \text{Debt}}$
	Short- Term Debt Ratio	Ratio	$\frac{\text{Short Term Debt}}{\text{Equity} + \text{Debt}}$
	Total Debt Ratio	Ratio	$\frac{\text{Total Debt}}{\text{Total Asset}}$
Capital Structure Determinants	Capital Intensity	Ratio	$\frac{\text{Total Asset}}{\text{Sales}}$
	Tangibility	Ratio	$\frac{\text{Total Gross Fixed Asset}}{\text{Total Assets}}$
	Profitability	Ratio	$\frac{\text{Earning Before Interest and Tax}}{\text{Total Assets}}$
	Firm Size	Value	Log of Sales

	Non-Debt Tax shield	Ratio	Earning After Interest & Tax/0.5 / Total Assets

4.7 Table of Hypotheses

Hypotheses for the present study is formulate as follows (Ram Kumar Kalkani et al (1998).

Table 2. Table of Hypotheses

Model	Independent Variable	Dependent Variable	Predicted Sign
Model - I	Capital Intensity	**Long -Term Debt Ratio**	Positive
	Tangibility		Positive
	Profitability		Negative
	Firm Size		Negative
	Non-Debt Tax shield		Negative
Model - II	Capital Intensity	**Short- Term Debt Ratio**	Negative
	Tangibility		Positive
	Profitability		Negative
	Firm Size		Negative
	Non-Debt Tax shield		Negative
Model - III	Capital Intensity	**Total Debt Ratio**	Positive
	Tangibility		Positive
	Profitability		Negative
	Firm Size		Negative
	Non-Debt Tax shield		Negative

5.0 Results and Discussion

5.1 Correlation Analysis

Table 3.Pearson's Correlation(r) Matrix Analysis of the Models

Independent Variables	Dependent Variable		
	Model - I Long -Term Debt	**Model - II Short- Term Debt**	**Model - III Total Debt**
Capital Intensity	-0.282 (0.241)	-0.269 (0.266)	-0.343 (0.150)
Tangibility	0.759** (0.000)	0.080 (0.745)	0.452 (0.052)
Profitability	-0.368 (0.121)	-0.736** (0.000)	-0.729** (0.000)
Firm Size	0.278 (0.248)	-0.086 (0.725)	0.081 (0.742)
Non-Debt Tax shield	-0.416	-0.716**	-0.739**

	(0.076)	(0.001)	(0.000)

Source: Research Data

******Correlation is significant at the 0.01 level (2-tailed)

*Correlation is significant at the 0.05 level (2- tailed)

The results of the Pearson's correlation of the models are shown in the above table. In model – I, weak negative non significant correlation can be observed between capital intensity, profitability and non-debt tax shield and long- term debt ratio. Furthermore correlation values of these independent variables having with long- term debt, indicating that though changes in these predictor variables negatively contribute towards changes in long- term debt but changes would not be significant. Further, long- term debt ratio has weak positive non significant relationship with firm size at 0.278.At the same time; long- term debt has significant and strong positive correlation with tangibility. The correlation is significant at 0.01 levels (2- tailed). This correlation values indicate that, changes in tangibility positively contribute towards changes in long- term debt level significantly.

In the case of model - II, there is a weak negative non significant correlation can be observed between capital intensity, firm size and short- term debt ratio and which indicate that the changes in capital intensity, firm size negatively contribute towards changes in short- term debt level but the impact would not be significant. However, short- term debt has strong significant negative relationship with profitability and non-debt tax shield. The correlation is significant at 0.01 levels (2- tailed).

In the case of model – III, total debt level of the firm has strong significant negative relationship with profitability and non-debt tax shield. The correlation is significant at 0.01 levels (2- tailed). There is a weak negative non significant correlation can be observed between capital intensity and total debt. Variables such as tangibility and firm size have non - significant positive impact on total debt.

Regression Analysis

The multiple regression analysis is carried out in order to investigate the simultaneous impacts of all the independent variables having on the dependent variable. The results of regression of three models are shown in the following tables.

Impact of Capital Structure Determinants on Leverage Level

Model – I

The result of impact of Capital Structure Determinants on long-term debt level is shown in the following table.

Table.4 Statistics of Regression between Capital Structure Determinants and Long – Term Debt Level

Regression Statistics	
Multiple R	0.915
R Square	0.836
Adjusted R Square	0.773
Standard Error	5.00298

Sum of Square	1663.654
F- Value	13.293
Sig.F	.000
Observations	19

Source: Research Data

Coefficient of determination – R^2 is the measure of proportion of the variance of dependent variables about its mean that is explained by the independents or predictor variables.

The specification of the five predictor variables in the above model reveals that the ability to predict the leverage level. R Square value of 0.836, which is in the model, denotes that 83.6 % of observed variability in long- term debt can be explained by the differences in the independent variables. Remaining 16.4 % variance in the long- term debt is attributed to other variables.

The F value is 13.293, that is significant at 0.05% (p = 0.000), which suggests that the indicators (independent variable) have significantly explained 83.6% of the variation in the leverage level and also indicates the model is a good fit for the data

Impact of Capital Structure Determinants on Leverage Level Model - II

The results of impact of Capital Structure Determinants on short – term debt level is shown in the following table

Table.5 Statistics of Regression between Capital Structure Determinants and Short – Term Debt Level

Regression Statistics	
Multiple R	0.813
R Square	0.661
Adjusted R Square	0.531
Standard Error	10.17900
Sum of Square	2627.099
F- Value	5.071
Sig.F	.009
Observations	19

Source: Research Data

The square of the multiple regressions R is 0.813, which indicates that 81.3% of the variation in short – term debt is explained by the five indicators of capital structure determinants collectively. Remaining 18.7 % variance in the short - term debt is attributed to other variables.

The F value is 5.071 that is significant at 0.05% (p = 0.009), which suggests that the indicators (independent variable) have significantly explained 81.3% of the variation in the short - term debt and also indicates the model is a good fit for the data.

Impact of Capital Structure Determinants on Leverage Level
Model - III

The result of impact of Capital Structure Determinants on total debt level is shown in the following table.

Table.6 Statistics of Regression between Capital Structure Determinants and Total debt Level

Regression Statistics	
Multiple R	0.870
R Square	0.758
Adjusted R Square	0.664
Standard Error	11.76128
Sum of Square	5618.589
F- Value	8.124
Sig.F	.001
Observations	19

Source: Research Data

The square of the multiple regressions R is 0.758, which indicates that 75.8% of the variation in total debt is explained by the five predictor variables collectively. Remaining 24.2 % variance in the total debt is attributed to other variables.

The F value is 8.124 that is significant at 0.05% (p = 0.001), which suggests that the indicators (independent variable) have significantly explained 75.8% of the variation in the total debt and also indicates the model is a good fit for the data.

Impact of the Independent Variables (Predictors) on Leverage Level

The strengths of the influence that each of the indicators of independent variable has on the dependent variable (leverage level) is determined by the use of multi regression coefficients of the predictor variables. The influence of the each independent variable is shown in the following table.

Table.7 Impact of the Independent Variables on Long – Term Debt, Short – Term Debt and Total Debt

Independent Variables	**Long - Term Debt (Model – I)**			**Short - Term Debt (Model – II)**			**Total Debt(Model – III)**		
	β	**t**	**Sig**	**β**	**t**	**Sig**	**β**	**t**	**Sig**
CAPINT	-0.466	-2.863	0.013	-0.296	-1.263	0.229	-0.458	-2.311	0.038
TANG	0.886	6..467	0.000	-0.173	-0.877	0.397	0.332	1.992	0.068
PROF	0.379	1.059	0.309	-0.988	-1.919	0.077	-0.527	-1.211	0.248
FSIZE	-0.042	-0.264	0.796	-0.010	-0.042	0.967	-0.029	-0.148	0.884
NDTS	-0.440	-1.269	0.227	0.186	0.372	0.716	-0.092	-0.218	0.831

As shown in the above table, in model – I, capital intensity and tangibility have statistically positive and negative significant (at 5% level) impact on long – term debt respectively. The coefficient value of the capital intensity indicates that a decrease in this variable translate to an increase in long- term debt level. On the other hand, the coefficient of the variable tangibility is positively signed means that an increase in of this variable brings about an increase in long – term debt.

The beta values give an indication of the relative importance of the predictor variables in uniquely accounting for variance in the dependent variables. Hence, higher value of the beta of tangibility, compare with other variables indicating that this variable is more important predictor variable accounting for unique variance in the long- term debt level.

According to the above table, in model – II, only the profitability has statistically significant impact on short – term debt (at 10% level).The coefficient of the profitability is negatively signed, which indicates that a decrease of this variable translate to an increase in short- term debt level. Among the predictor variables, higher value of beta of the profitability indicates that this variable is more important predictor variable accounting for unique variance in the short- term debt level.

In model – III, capital intensity shows statistically negative significant impact on total debt (at 5% level). At the same time profitability shows statistically positive impact on the dependent variable (at 10%). Further higher value of the beta of the profitability indicates that this variable is more important predictor variable accounting for unique variance in the total debt level compare with other variables.

Empirical Findings of the Research and Testing of Hypotheses

The objective of this study is to find out the determinants of capital structure of listed companies in SriLanka. The findings are based on collected data from sample of 19 listed companies in SriLankan stock exchange market for the period of 2003-2007. Summary of the testing of hypotheses of the present study is shown in the following table

Table.8 Summary of Testing of Hypotheses

Model	Independent Variable	Dependent Variable	Predicted Sign	Actual Sign	Accepted/ Rejected
Model I	Capital Intensity	**Long - Term Debt Ratio**	Positive	Negative	Rejected
	Tangibility		Positive	Positive	Accepted
	Profitability		Negative	Positive	Rejected
	Firm Size		Negative	Negative	Accepted
	Non-Debt Tax shield		Negative	Negative	Accepted
Model II	Capital Intensity	**Short- Term Debt Ratio**	Negative	Negative	Accepted
	Tangibility		Positive	Negative	Rejected
	Profitability		Negative	Negative	Accepted
	Firm Size		Negative	Negative	Accepted
	Non-Debt Tax shield		Negative	Positive	Rejected
Model III	Capital Intensity	**Total Debt Ratio**	Positive	Negative	Rejected
	Tangibility		Positive	Positive	Accepted
	Profitability		Negative	Negative	Accepted

	Firm Size		Negative	Negative	Accepted
	Non-Debt Tax shield		Negative	Negative	Accepted

In the model – I, based on the findings three hypotheses are accepted. That is firm size and non-debt tax shield are negatively associated with long – term debt and tangibility has a direct relationship with the dependent variable.

In model – II, three hypotheses are accepted. The variables, Capital intensity, profitability and firm size have the negative relationship with dependent variable, short – term debt.

In the third and final model four hypotheses are accepted except the variable, capital intensity. Association of the all four variables with dependent variables is in the expected direction.

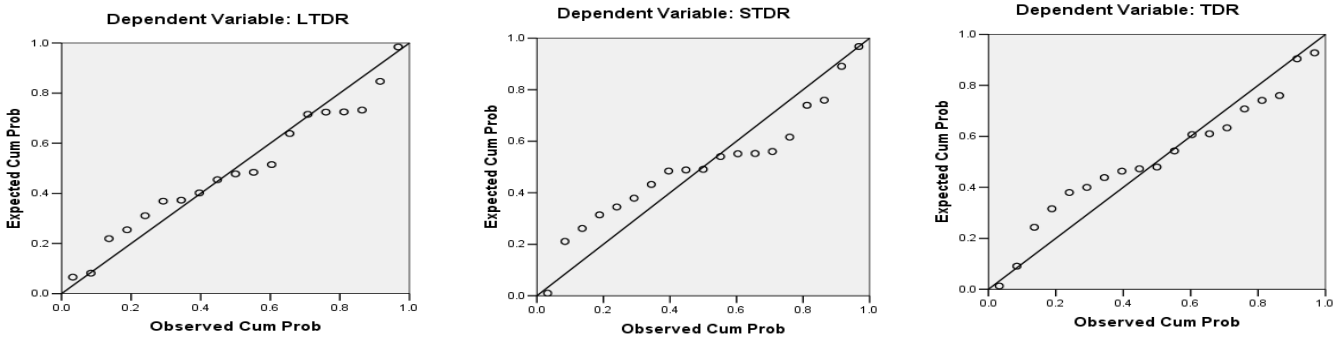
Residual Analysis

Further an effort has made to check the validity of the assumption of the models.

Normality Analysis

The following normal probability plots of the residuals indicate whether the standardized residuals might have come from a normal distribution. A normal probability plot of the standardized residuals will give an indication of whether or not the assumption of normality of the random errors is appropriate.

Figure2. Normal Probability Plot of Standardized Residuals of Models



Model – I **Model – II** **Model - III**

Normal probability plot of the standardized residuals in the above figures show that the normal probability plots of the models are not too far from a straight line (although the line is not entirely convincing). It seems that the normality assumption might be satisfied for these data.

Hetroskedasticity and Linearity Analysis

The two assumptions, the random errors ($\in$) have constant variation, and the random errors ($\in$) have zero means of the models are checked at the same time by the following residual scatter plots.

Figure 3.Residual Plot of the Model – I

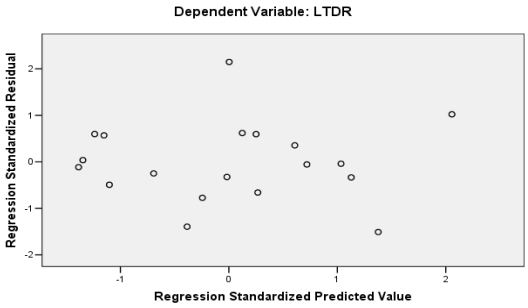


Figure 4.Residual Plot of the Model - II

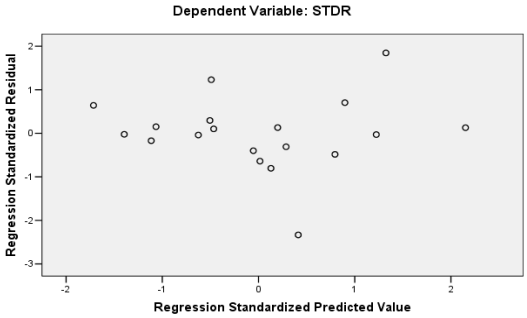
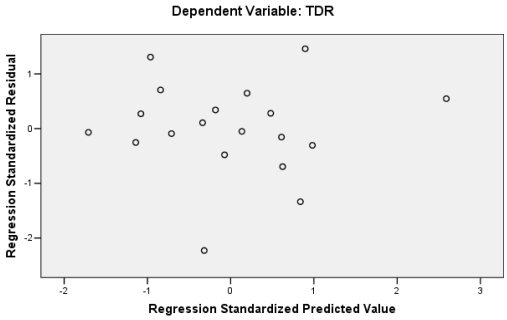


Figure 5. Residual Plot of the Model - III



According to the above plots, the points in the plots seem to be fluctuating randomly around zero in an un-patterned fashion. Thus, the plots do not suggest violations of the assumptions of zero means and constant variance of the random errors.

Multicollinearity Analysis of the Variables

It is possible that the selected explanatory variables may be correlated, so the chosen variables may actually measure the effects of several different variables. To address this problem the study tests for the multicollinearity. The presence of multicollinearity

makes the estimation and hypothesis testing about individual coefficients in regression not possible (Gujarati, 2003).

The variance Inflation Factor (VIF) is a commonly used for assessing multicollinearity problems. It shows the degree to which each independent variable is explained by other independent variable. As a rule of thumb, a VIF greater than 10 indicates the presence of harmful collinearity (Gujarati, 2003).

Figure.6 Multicollinearity Analysis of the Variables

Variable	Tolerance	VIF
CAPINT	0.474	2.109
TANG	0.670	1.492
PROF	0.730	1.312
FSIZE	0.495	2.019
NDTS	0.104	9.571

The results of VIF show that VIF for all the variables are less than 10. So, it is indicates that the presence of non harmful collinearity among the variables.

Conclusion

Capital Structure and their determinants have been one of the primary subjects of research in corporate finance. This paper has attempted to find the determinants of capital structure of the manufacturing companies in SriLanka. The conclusion of the study suggests that, in model – III, the estimation coefficients on the variables of tangibility, profitability, firm size and non-debt tax shields are largely consistent with the explanations of trade - off theory and prove past empirical findings also.

References

1. Titman, S. and Wessels, R., 1988. The determinants of capital structure choice. *The Journal of Finance*, 43, 1-19.

2. Rajan, R. G., Zingales, L. (1995), “What Do We Know about Capital Structure? Some Evidence from International Data.” Journal of Finance, 50, pp. 1421-1460.

3. Friend, I., Lang, L. (1988), “An Empirical Test of the Impact of Managerial Self-interest on Corporate Capital Structure.” Journal of Finance, 43, pp. 271-281.

4. Booth, L., Aivazian, V., Demirguc-Kunt, A., Maksimovic, V. (2001), “Capital Structure in DevelopingCountries.” Journal of Finance, 56, pp. 87-130.

5. Huang, S. G., Song, F. M. (2002), “The Determinants of Capital Structure: Evidence from China.”Hong Kong Institute of Economics and Business Strategy, Working Paper No. 1042.

6. Kester, C. W. (1986), “Capital and Ownership Structure: A Comparison of United States and JapaneseManufacturing Corporations.” Financial Management, pp. 5-16.

7. Jensen, M., 1986. Agency costs of free cash flow, corporate finance and takeovers. AmericanEconomic Review, 76, 323-329.

8. Shenoy, C., and Koch P. (1996): The Firm’s Leverage-Cash Flow Relationship,
Journal of Empirical Finance 2, 307-331.

9. DeAngelo, H. and R. W. Mausulis. 1980. “Optimal capital structure under corporate and personal taxation, Journal *of Financial Economics"*, pp- 3-29

10. Scott, J. ‘Bankruptcy, secured debt and optimal capital structure’, Journal of Finance, Vol.32, March 1977, pp. 1-20

11. Myers and N. Majluf. "Corporate Financing and Investment Decisions When Firms Have Information Investors Do Not Have." Journal of Financial Economics 13 (June 1984), 187-221.

13. Brealey, R. A. E Myers, S. C (1992), “Principals De Finances Empresariais” Lisboa: ED. Mcgraw-Hill De Portugal.

14. Brigham.FLouis C.Gapenski Michael C.Ehrhardt (1999), “Financial Management Theory and Practice” 9th Edition –Eugene .

15. Castanias, R., (1983), “Bankruptcy Risk and Optimal Capital Structure”, Journal of Finance.

16. Chen, Weiyun and Zongyizhang (2002), “An Empirical Investigation into the Capital Structure Determinants of Publicly Listed Chinese Companies”, http://www.Ssrn.Com.

17. Chiang, Y.H., Albert, C.P.C., Eddie, H.C.M (2002), “Capital Structure and Profitability of the Property and Construction Sectors In Hong Kong”, Journal of Property Investment & Finance.

18. Claggett, E.T. (1991), “Capital Structure: Convergent and Pecking Order Evidence”, Review Of Financial Economics.

19. Deesomask, R., Paudyal K. and Escetto, G. (2004), “The Determinants of Capital Structure”: Evidence from the Asia Pacific Region. Journal of Multinational Financial Management.

20. Demiguel, A. and Pindado, J, (2001), “Determinants of Capital Structure: New Evidence from Spanish Panel Data”, Journal of Corporate Finance.

21. Dimitrov. V and Jain. P. C (2005), “The Value Relevance of Changes in Financial Leverage” Http://Ssrn.Com/Abstract= 708281.

22. Gujarai,D.N.,(2003)Basic Econometrics, Fourth edition,Irwin/McGraw-HILL:
New York