

**IMPACT OF CAPITAL STRUCTURE ON PROFITABILITY****EVIDENCE FROM SELECTED TRADING COMPANIES IN COLOMBO STOCK EXCHANGE, SRI LANKA****Mrs.Thusyanthi Rajakumaran****Assistant lecturer****Advanced Technological Institution****Jaffna, Sri Lanka****And****Mrs.Rathiranee Yogendrarajah****Senior lecturer****Department of Financial Management****Faculty of Management Studies and Commerce****University of Jaffna, Sri Lanka****ABSTRACT**

*Capital structure decision is important because the profitability of an organization is directly affected by the capital structure decision. Proper capital structure leads the firm to achieve the better performance and ensures the sustainability in its operation. The purpose of this paper is to empirically examine the impact of capital structure on profitability in trading companies in Sri Lanka. For this purpose the study investigated eight listed trading companies in Colombo Stock Exchange of Sri Lanka the past 5years period from 2008 to 2012. In this study, independent variable that is, capital structure of the company's is measured by leverage ratios of Debt to equity ratio and Debt to Assets ratio. Five profitability ratios such as gross profit ratio (GPR), net profit ratio (NPR), return on asset (ROA), return on equity (ROE) and return on capital employed (ROCE) are used as the dependent variables for the study. The data has been analyzed by using descriptive statistics, correlation analysis and regression analysis to find out the association between the variables. The results suggest that 44% of the total assets in the trading companies of Sri Lanka are representing by debt and on the basis of correlation analysis Debt to equity ratio and Debt to total Assets ratio positively and moderately correlated with gross profit ratio, negatively and moderately correlated with net profit ratio, positively and weakly correlated with return on capital employed and negatively and weakly correlated with other profitability ratios.. The outcome of the study may help to the entrepreneurs, Board of directors and policy makers to design better decisions in the debt-equity choice.*

**Keywords: Capital structure, Profitability, Total debt.**

## 1. INTRODUCTION

Capital structure is one of the most complex areas of financial decision making due to its interrelationship with other financial decisions variables. Profitability is the main component in the financial decision. Because the whole aspects of capital investment decision, capital structure decision is the vital one, since the profitability of an enterprise is directly affected by such decision. Hence, proper care and attention need to be given while making the capital structure decision.

An ultimate goal of a firm is the maximization of wealth or value of that firm (Miller & Modigliani, 1958, 1963; Miller, 1977). The relationship between capital structure and profitability has been the subject of remarkable milestone over the past decade throughout their relevance theory. In the seminal article, presented by MM's (1958) irrelevance theory, they argued that capital structure is unrelated to firm's value. In the presence of corporate income tax and the cost of capital in MM's (1963) they argued that the market value of the firm is positively related to the amount of long term debt used in its capital structure. In recent years, the capital structure and profitability was analyzed by too many researchers in academic level. From the foregoing discussions based on the available empirical literature, it is crystal clear that results from investigations into the relationship between capital structure and profitability are inconclusive and requires more empirical work.

The impact of capital structure on profitability is one that received considerable attention in the finance literature. The study regarding the impact of capital structure on profitability will help us to know the potential problems in capital structure and profitability. Now a day the trading firms must conduct its business in a highly complex and competitive business environment. Therefore, these types of research findings will be benefited in selecting the capital structure to achieve the optimum level of firm's profitability. This study shows the statistical analysis, carried out seeking to discover the impact of capital structure on profitability of the listed trading companies in the Colombo Stock Exchange.

## 2. RESEARCH PROBLEM

Trading companies are become under profitable organizations. The ultimate target of the trading companies is achieving maximum profitability in order to minimize the cost. The finance cost mainly the interest for the debits one of the main component of the cost structure. Most of the researchers found a negative relationship between leverage or debt and profitability in their research work. But some authors put forward different opinion, thus they found out a positive relationship between profitability and debt levels in their studies. Within this two sides of arguments there is a necessarily to do more empirical research to analyze the relationship between capital structure and profitability.

Hence the "main problem of this research is to study **"To what extent the capital structure influence on the profitability of trading companies in Sri Lanka?"**

## 3. OBJECTIVES

The focus of this study is impact of capital structure on profitability of the companies those are listed under the trading sector in Colombo stock exchange. The objectives are developed towards the followings,

- To identify the relationship between capital structure and profitability
- To find out the impact of capital structure on profitability
- To suggest the trading companies in order to increase their profitability through adapting a better strategic frame work of capital structure

#### 4. LITERATURE REVIEW

Modigliani and Miller (1958) have a theory of “capital structure irrelevance” where argue that financial leverage does not affect the firm’s market value with assumptions related to homogenous expectations, perfect capital markets and no taxes. Jensen and Meckling (1976) argue that the shareholders-lenders conflict has the effect of shifting risk from shareholders and of appropriating wealth in their favor as they take on risky investment projects(asset substitution). Hence, shareholders, and managers as their agents, are prompted to take on more borrowing to finance risky projects. Lenders receive interest and principal if projects succeed, and shareholders appropriate the residual income; however, it is the lender who incurs the loss if the project fails. It is difficult and costly for debt holders to be able to assess and monitor Firms in an oligopolistic market will follow the strategy of maximizing their output in favorable economic conditions to optimize profitability (Brander & Lewis 1986). The theory also holds in unfavorable economic conditions; firms would take a cut in production and reduce their profitability.

Shareholders, though, while enjoying increased wealth in good periods, tend to ignore a decline in profitability in bad times. This is due to the fact that unfavorable consequences are passed onto lenders because of shareholders' limited liability status. Therefore, the oligopolistic firms, in contrast to firms in competitive markets, would employ higher levels of debt to produce more when opportunities to earn higher profits arise. The implied prediction of the output maximization hypothesis is that capital structure and market structure have a positive relationship. In corporate finance, the agency costs theory supports the use of high debt, and it is consistent with the prediction of the output maximization hypothesis. Brander and Lewis (1986) and Maksimovic (1988) provide the theoretical framework that links capital structure and market structure. Contrary to the profit maximization objective postulated in industrial organization literature, these theories are similar to the corporate finance theory in that they assume that the firm's objective is to maximize the wealth of shareholders. Furthermore, market structure is shown to affect capital structure by influencing the competitive behavior and strategies of firms.

Berger, A. N. (2002) findings are consistent with the agency cost hypothesis-higher leverage, or a lower equity capital ratio is associated with higher profit efficiency, all else being equal. The relationship between performance and leverage may be reversed when leverage is very high due to the agency cost of outside debt. Profit efficiency is responsible to ownership structure of the firm consistent with agency theory and their argument that profit efficiency embeds agency costs.

Mesquita and Lara (2003) stated that the choice between the ideal proportion of debt and equity can affect the value of the company, as much as the return rates can. The results indicate that the return rates present a positive correlation with short-term debt and equity, and an inverse correlation with long-term debt. Azhagaiah and Premgeetha (2004) suggested that the rapid ability to acquire and dispose of debt provides the desired financial flexibility of firms with a goal for growth. The non-debt tax shield and growth rate are statistically significant, which means that these variables are the major determinants of the capital structure of Pharmaceutical Companies in India.

Song (2005) indicated that most of the determinants of capital structure suggested by capital structure theories appear to be relevant for Swedish firms. But one also finds significant differences in the determinants of long and short term forms of debt. Raheman, Zulfiqar and Mustafa (2007) indicated that the capital structure of the non-financial firms listed on Islamabad Stock Exchange have a significant effect on the profitability of these firms. Dragota and Semenescu (2008) proved that the pecking order theory seemed to be more appropriate for the Romanian capital market, but the signaling theory was not entirely rejected.

B.Nimalathan & Valeriu Brabete (2010) pointed out capital structure and its impact on profitability: a study of listed manufacturing companies in Sri Lanka. The analysis of listed

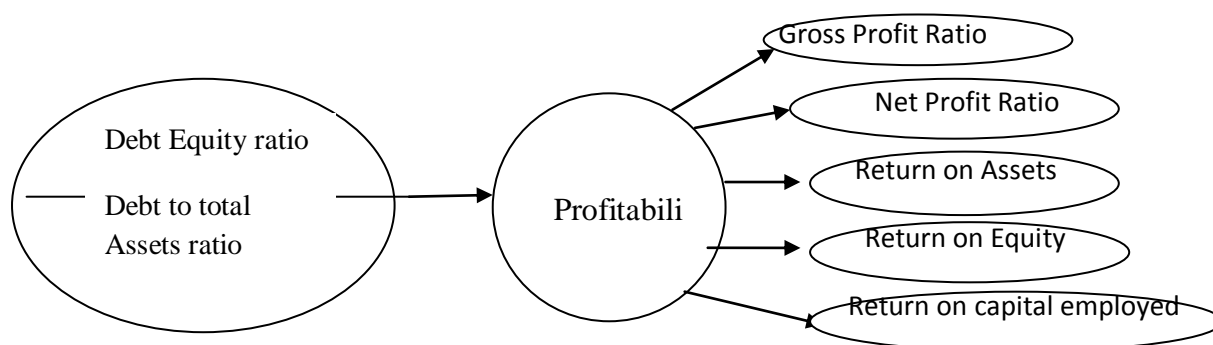
manufacturing companies shows that Debt equity ratio is positively and strongly associated to all profitability ratios (Gross Profit, Operating Profit & Net Profit Ratios). Prof. (Dr). T. Velampy & J. Aloy Niresh.(2012) point out their study of Relationship between capital Structure and Profitability in the listed banking and insurance sector in Sri Lanka, the results of the analysis show that there is a negative association between capital structure and profitability except the association between debt to equity and return on equity. Further the results suggest that 89% of total assets in the banking sector of Sri Lanka are represented by debt, confirming the fact that banks are highly geared institutions.

Though many research studies have been undertaken in the field of capital structure and Profitability, very few studies have been undertaken to find the impact of capital structure on Profitability. It is against this background that the present study has been undertaken so as to facilitate the existing literature.

## 5. CONCEPTUALIZATION

Based on the research problem the following conceptual model has been constructed. Here there are two variables. Such as, independent variable that is, capital structure of the company's is measured by leverage ratios of Debt to equity ratio and Debt to Assets ratio. Five profitability ratios such as gross profit ratio (GPR), net profit ratio (NPR), return on asset (ROA), return on equity (ROE) and return on capital employed (ROCE) are used as the dependent variables for the study.

Figure 1: Conceptual Model



Source: Developed by Researcher

## 6. HYPOTHESES OF THE STUDY

The following hypotheses were formulated for the study.

H1: There is a significant impact of Capital structure and Gross Profit

H2: There is a significant impact of Capital structure and Net Profit

H3: There is a significant impact of Capital structure and Return on Assets

H4: There is a significant impact of Capital structure and Return on Equity

H5: There is a significant impact of Capital structure and Return on Capital Employed

## 7. METHODOLOGY

### 7.1 Data collection

The present study used secondary data for the analysis. Secondary data is data that have been previously collected for some other project rather than the one at hand but found useful by the researcher. The financial statements which are made up of income statements and balance sheets of the eight trading companies were the main sources of data for this study. These were obtained from the Hand book of Listed Companies & the annual reports of trading companies. Further, scholarly articles from academic journals, relevant textbooks on the subject and the internet search engines were also used. Specifically, the financial statements of the eight trading companies were collected for the period 2008-2012.

### 7.2 Sampling design

The Colombo Stock Exchange (CSE) has 289 companies representing 20 business sectors as at 31<sup>st</sup> December 2013. This study composed of eight trading companies listed in the Colombo Stock Exchange and period of 5 years from 2008 to 2012. From the 20 sectors; trading sector was selected for the present study. From this sector the following eight listed trading companies were selected to carry out the research;

1. Browns & Company PLC
2. C.W.Mackie PLC
3. Ceylon & Foreign Trades PLC
4. Eastern Merchants PLC
5. Office Equipments PLC
6. Radiant Gems International PLC
7. Singer Sri Lanka PLC
8. Tess Agro PLC

### 7.3 Mode of Analysis

The quantitative research approach is applied to find out the findings of the study. Statistical analysis is used to describe an account for the observed validity in the data. The upper level of statistical significance for hypotheses testing was set at 5%. All statistical test results were computed at the 2-tailed level of significance.

Statistical analysis involves both descriptive and inferential statistics. Descriptive statistics are used to describe and summarize the behavior of the variables in a study. Inferential statistics are used to draw conclusions about the reliability and generalizability of the findings. In order to test the research hypotheses; the inferential tests used include the Correlation Analysis.

### 7.4 Research Model

Correlation analysis was carried out to identify the relationship between capital structure and profitability. Here capital structure is the independent variable and profitability is the dependent variable. Profitability is measured with the help of four ratios namely Gross profit, Net profit, Return on Assets, Return on Equity and Return on Capital Employed. Capital structure is measured with the help of Debt/Equity ratio and Debt to Total Assets ratio. Therefore the regression model will be formulated in the following manner.

Profitability of the trading companies' is dependent upon the capital structure of the company. It is represented as follows.

$P=f(CS)$

Where, p is profit

Cs is capital structure

## 8. RESULTS AND ANALYSIS

### 8.1 Descriptive Statistics

**Table: 8.1 Descriptive Statistics**

	N	Minimu m	Maximu m	Mean	Std. Deviation
GP					
NP	40	2.70	50.55	22.6770	15.60318
ROA	40	-31.23	10.99	.7750	8.22205
ROE	40	-16.56	23.33	3.6295	7.44927
ROCE	40	-59.06	33.12	4.3543	17.28574
DTE	40	-20.29	58.85	16.0247	15.65622
DTA	40	18.30	386.19	102.200 0	83.37624
Valid N (listwise)	40	15.47	79.43	44.3127	17.11394

Source: Colombo Stock Exchange Annual Report 2008-2012

The descriptive statistics show that over the period in the study, the profitability ratios measured by gross profit, net profit, return on assets, return on equity and return on capital employed averaged 22.7%, 0.8%, 3.6%, 4.4% and 16% respectively. The debt/equity ratio is 102.2% and debt to total assets averaged 44.3%. This is an indication that approximately 44% of total assets in the trading sector of Sri Lankan listed trading companies are represented by debt.

## 8.2 Correlation Analysis

Source: Colombo Stock Exchange Annual Report 2008-2012

Table: 8.2.1 Correlations

	GP	NP	ROA	ROE	ROCE	DTE	DTA
GP							
Pearson Correlation							
Sig. (2-tailed)	1	-.079	.194	-.021	.314*	.494**	.439**
N		.627	.230	.898	.048	.001	.005
NP							
Pearson Correlation		40	40	40	40	40	40
Sig. (2-tailed)		1	.773**	.836**	.518**	-.408**	-.304
N			.000	.000	.001	.009	.056
ROA							
Pearson Correlation			40	40	40	40	40
Sig. (2-tailed)			1	.896**	.692**	-.373*	-.315*
N				.000	.000	.018	.048
ROE							
Pearson Correlation				40	40	40	40
Sig. (2-tailed)				1	.659**	-.425**	-.313*
N					.000	.006	.049
ROCE							
Pearson Correlation					40	40	40
Sig. (2-tailed)					1	.128	.145
N						.432	.373
DTE							
Pearson Correlation						40	40
Sig. (2-tailed)						1	.932**
N							.000
DTA							
Pearson Correlation							40
Sig. (2-tailed)							1
N							

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

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

According to the correlation analysis, the following table explains the relationship between the capital structure and profitability. Here the  $R^2$  is explaining variance in the capital structure is accounted by the dependent variables.

Table 8.2.2: Relationships between the capital structure and profitability

Variable	R	R <sup>2</sup>	Relationship
Debt equity and Gross profit	0.494	24.4%	Moderate Positive
Debt to total assets and Gross profit	0.439	19.3%	Moderate Positive
Debt equity and Net profit	-0.408	16.64%	Moderate negative
Debt to total assets and Net profit	-0.304	9.3%	Moderate negative
Debt equity and Return on Assets	-0.373	13.91%	Moderate negative
Debt to total assets and Return on Assets	-0.315	9.9%	Moderate negative
Debt equity and Return on Equity	-0.425	18.06%	Moderate negative
Debt to total assets and Return on Equity	-0.313	9.8%	Moderate negative
Debt equity and Return on Capital employed	0.128	1.6%	Weak positive
Debt to total assets and Return on Capital employed	0.145	2.1%	Weak positive

Source: Analyzed data

### 8.3 Regression Analysis

Table 8.3.1 Predictors of profitability Model summary

Model	Dependent variable	R	R <sup>2</sup>
1	GP	0.498	0.248
2	NP	0.459	0.211
3	ROA	0.383	0.147
4	ROE	0.484	0.234
5	ROCE	0.146	0.021

Predictors (constant), Debt Equity Ratio, Debt to total assets Ratio

The R<sup>2</sup> values 24.8%, 21.1%, 14.7%, 23.4% and 2.1% of the observed variability in GP, NP, ROA, ROE and ROCE is explained by the variability in the independent variable of Debt Equity ratio and Debt to total assets Ratio. These indicate there may be number of variables which can have impact of profitability other than Debt Equity ratio.

Table 8.3.3 Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1 GP	(Constant)	16.996	9.571		1.776	.084
	DE	.122	.074	.650	1.647	.108
	DA	-.152	.360	-.167	-.423	.675
1 NP	(Constant)	-2.057	5.166		-.398	.693
	DE	-.094	.040	-.952	-2.355	.024
	DA	.280	.194	.584	1.444	.157
1 ROA	(Constant)	4.369	4.867		.898	.375



	DE	-.054	.038	-.603	-1.434	.160
	DA	.108	.183	.247	.588	.560
1ROE	(Constant)	-2.613	10.700		-.244	.808
	DE	-.212	.083	-1.021	-2.563	.015
	DA	.645	.402	.639	1.604	.117
1ROCE	(Constant)	9.141	10.954		.834	.409
	DE	-.010	.085	-.055	-.121	.904
	DA	.179	.412	.196	.435	.666

Source: Analyzed data

From the above mention table it is clear that negative association was found between Debt equity ratio and profitability ratios other than gross profit. Like that positive association was found between Debt to total assets ratio and profitability ratios other than gross profit.

#### 8.4 Hypotheses Testing

Table 8.4 Hypotheses Testing

No	Hypotheses	Results	Tools
H1	There is a significant impact of debt to equity and Gross Profit	Rejected	Regression
	Debt to total assets has a significant impact on Gross Profit	Rejected	Regression
H2	There is a significant impact of debt to equity and Net Profit	Accepted	Regression
	Debt to total assets has a significant impact on Net Profit	Rejected	Regression
H3	There is a significant impact of debt to equity and Return on Assets	Rejected	Regression
	Debt to total assets has a significant impact on Return on Assets	Rejected	Regression
H4	There is a significant impact of debt to equity and Return on Equity	Accepted	Regression
	Debt to total assets has a significant impact on Return on Equity	Rejected	Regression
H5	There is a significant impact of debt to equity and Return on Capital Employed	Rejected	Regression
	Debt to total assets has a significant impact on Return on Capital Employed	Rejected	Regression

Source: developed by researcher

### 9. CONCLUSION AND RECOMMENDATIONS

This research examined the impact of capital structure and profitability in listed trading companies in Sri Lanka. For this purpose the study include eight trading companies those are listed under the

Colombo stock exchange over the period of 2008-2012 and major findings of the study are summarized below.

According to the descriptive analysis mean value the debt/equity ratio is 102.2% and debt to total assets averaged 44.3%. This is an indication that approximately 44% of total assets in the trading sector of Sri Lanka listed trading companies are represented by debt. Thus it indicates 56% of the total assets of the trading companies are represented by equity capital. Approximately it is a good financial position, because they can reduce their finance cost specially the interest cost. Through this they can earn or maximize their profit level. On the basis of correlation analysis it is explained that some moderate and mostly weak relationship between the variables. This means in the trading sector companies, their profitability is depend not only the debt level, but also there are more factors influence the profitability level.

The R<sup>2</sup> values were found to be significant for the impact of debt to equity on net profit and return on equity. But no significant impact was found on the debt to equity on gross profit, return on assets and return on capital employed, and debt to total assets on gross profit, net profit, return on equity, return on assets and return on capital employed.

Trading sector companies are most important sector in the society. Because their every activity is affect the stake holders specially the customers. So their financing decision should be made very carefully. Therefore trading sector companies should take in to view the following matters in order to increase their profitability.

- An appropriate mix of capital structure should be adopted in order to increase the profitability.
- Top management of every trading firm should make prudent financing decision in order to remain profitable and competitive.

#### **10. LIMITATIONS**

The current research is restricted only to the listed trading sector companies out of 20 sectors in the Sri Lanka Colombo Stock Exchange. Furthermore, this research was mainly conducted based on the secondary data collection. The other data collection methods had not been considered. In addition to these, data representing the period of 2008 to 2012 only 5 years time period were used for the study.

In this study researcher only consider the Debt Equity Ratio and Debt to total Assets Ratio as variables of capital structure and Gross profit ratio, Net profit ratio, Return on asset, Return on equity and Return on capital employed as variables of profitability.

#### **11. SCOPE OF FUTURE RESEARCH**

To develop specific policy recommendations researcher suggest the following for further research.

- Currently there are 289 companies listed in the CSE under 20 sectors. The study covered only the listed trading sector companies. Therefore, additional investigation is required to examine firms in the different sectors in the capital structure patterns.
- Another research area is to consider further variables in the capital structure and profitability.

**References**

1. Guthman, H.G., Dougalls, H.E. Corporate and Financial Policy, 4th ed, Prentice Hall Inc, Englewood Cliffs New Jersey.
2. Kothari, C.R. (2004). Research Methodology: Methods & Techniques. pp. 184-87
3. Pandey, I.M. (2009), Financial Management: Capital Structure Planning and Policy (pp. 332, 333).
4. Taylor, W.B. Financial Policies of Business Enterprises, 2nd ed, Appleton – Century, Crofts N.Y.
5. Abor, J. (2005), “The Effect of Capital Structure on Profitability: An Empirical Analysis of Listed Firms in Ghana”, The Journal of Risk Finance, Vol. 6 No.5.
6. Modigliani, F. and Miller, M. (1963), “Corporate income taxes and the cost of capital: A Correction”. American Economic Review, Vol. 53, pp. 443-53.
7. Nimalathasan, B., Brabete, V., “Capital Structure and its Impact on Profitability: A Study of Listed Manufacturing Companies in Sri Lanka.
8. Titman, S. and Wessels, R. (1988), “The Determinants of Capital Structure Choice”, Journal of Finance, Vol. 43 No. 1, pp. 1-19.
9. Taub, A. J. (1975), “Determinants of the Firm’s Capital Structure”, Review of Economics and Statistics, Vol. 57, pp. 410-416.
10. Titman, S. (1984), “The Effect of Capital Structure on a Firm’s Liquidation Decisions”, Journal of Financial Economics, Vol. 13, pp. 137-51.
11. Prof. (Dr). T. Velnampy & J. Aloy Niresh (2012), The Relationship between Capital Structure & Profitability Journal of Global Journal of Management and Business Research Volume 12 Issue 13 Version 1.0
12. Puwanthren Prateepkanth (2011), “capital structure and financial performance” Research World journal of Arts, Science & Commerce, Vol – 2, Issue – 2.