



CAPITAL STRUCTURE AND PROFITABILITY OF LISTED MANUFACTURING COMPANIES IN SRILANKA

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ABSTRACT

The determination of a capital company's capital structure constitutes a difficult decision, since the profitability of an enterprise is directly affected by such decision. While determining capital structure decision proper care and attention need to be given. The ideal proportion of debt and equity can affect the value of the company, as much as the return rates. The purpose of this study is to investigate the relationship between capital structure and profitability and its impact on profit earning capacity over the past 10 year period from 2004 to 2013 financial year of listed manufacturing companies in Sri Lanka. The secondary series of data were analyzed using descriptive statistics and correlation analysis to find out the association between the variables. Findings of this research revealed that debt to equity ratio (D/E) positive significant correlation ($r = .355, P < 0.05$) to Net Profit Ratio (NPR) and negative significant correlation ($r = -.417, P < 0.05$) to Return on Equity (ROE). Debt to Total Fund (DTF) ratio positive significant correlation ($r = .344, P = 0.05$) to Return on Equity (ROE) and positive significant correlation ($r = .973, P < 0.01$) to Return on Asset (ROA). Further capital structure has a great impact on all profitability ratios except Gross Profit ratio (GP). The outcomes of the study may guide entrepreneurs, loan-creditors and policy planners to formulate better policy decisions in respect of the mix of debt and equity capital and to exercise control over capital structure planning and thereby to control and reduce bankruptcy costs.

Keywords: Capital Structure, Profitability, Manufacturing companies, Debt, Equity, gearing

Introduction

Capital structure is one of the most puzzling issues in corporate finance literature (Brounen and Eichholtz, 2001). The term 'capital structure' of an enterprise, is actually, a combination of equity shares, preferences shares and long-term debts. Klayman, Bagdy and Ellis, (1994) defined capital structure as the composition of the various sources of funds and credits: publicly offered stock and bond, privately placed securities, loans and lines of credits from banks, trade creditors, account receivables financing, leasing, installment purchases, investment and speculated and self financing through retain earnings. A more definite policy is often laid down for the composition of long-term funds, known as capital structure.

A firm can raise fund either through debt or equity or mixture of both. The modern theory of capital structure began with the introduction of Modigliani and Miller (1958), Rajan and Zingales (1995), Harris and Raviv (1991). The capital structure decision is one of the most important decisions made by financial management because it affects the financial performance of the firm. The capital structure decision is middle of other decisions in the area of corporate finance. These include dividend policy, project financing, issuing long term securities, financing of mergers, buyouts and so on. The capital structure decision is the vital one since the profitability of an enterprise is directly affected by such decision. So virtually the capital structure is a part of financial structure. An optimal capital structure is reached at a point where the cost of the capital is minimum.

Decision, regarding the capital structure in a company should have a critical importance because of its potential impact on profitability and solvency. Therefore a company should plan its capital structure which derives up to maximum advantage and is able to adjust more easily according to the changing conditions

If the capital structure is unplanned the companies would fail to economize their funds. Consequently, it is being increasingly realized that a company should plan its capital structure to maximize the use of funds and to be able to adapt more easily to the changing conditions (Pandey, 2009). The appropriate capital structure planning also increases the power of company to face the losses and changes in financial markets.

This study examines the relationship between the capital structure and profitability of manufacturing firms in Sri Lanka. The literature cites a number of variables that are potentially associated with the profitability of firms. In this study, the selection of

exploratory variables is based on the alternative capital structure, profitability theories and previous empirical work. The choice can be limited, however, due to data limitations. As a result, the set of proxy variables includes Debt equity, Debt to total fund, Gross profit, Net profit, Return on asset and Return on equity.

Statement of Problem

How the capital structure influences profitability in manufacturing companies in Sri Lanka?

The main problem of this research is to study how the capital structure negatively or positively influences on profitability of the listed manufacturing firms in Sri Lanka.

Many empirical study have been conducted locally and internationally in this area of study with the view of capital structure influences profitability in manufacturing companies in Sri Lanka

Objective of study

The main objectives of the studies are

- To identify the relationship between capital structure and profitability of listed manufacturing Companies in Sri Lanka
- To find out the impact of the capital structure on profitability of listed manufacturing Companies in Sri Lanka
- To suggest the firms to have an ideal capital structure in order to increase the profitability.

Significance of the study

The relationship between capital structure and profitability cannot be ignored because the improvement in the profitability is necessary for the long-term survivability of the firm.

It is common knowledge that the performance of manufacturing companies is crucially important as a main strategy for economic development to any country adopting an export-oriented industrialization policy within an open economic environment. This would help to gain knowledge of efficiency of the organization in the manufacturing sector. This study determines how planning the Capital Structure is beneficial to companies, which optimize Capital structure and enjoy profitability.

Literature Review

Chin, Ai Fu (1997) undertook a study and the finding of the study states that profitability is significantly related to the capital structure. Specifically, profitability was inversely related to the amount of liability in a company's capital structure, the study includes 267 firms listed in Kuala Lumpur stock exchange.

The finding of Amarjit Gill et al (2011) is regarding the effect of Capital Structure on Profitability of the United States firms. The finding shows a positive relationship between short-term debt to total assets and profitability, long-term debt to total assets and profitability, and total debt to total assets and profitability in the manufacturing industry.

Abor (2005) also found a significantly positive relationship between total debt and profitability.

Nimalathasan et al (2012) found that capital structure is positively and strongly associated to profitability of the companies.. Aloy Niresh, and Velnampy, (2014) did a study and the finding of the study points out that there is no indicative relationship between firm size and profitability of listed manufacturing firms. In addition, the results showed that firm size has no profound impact on profitability of the listed manufacturing firms in Sri Lanka.

Mesquita and Lara, (2003) indicated that the return rate present a positive correlation with short term Debt and Equity and an inverse correlation with long term Debts.

Gurmeet Singh(2013) proved that there has been a strong one-to-one relationship between Capital Structure variables and Profitability variables, Return on Assets (ROA) and Return on Capital Employed (ROCE) and the Capital Structure has significant influence on Profitability, and increase in use of debt fund in Capital Structure tends to minimize the net profit of the Manufacturing firms listed in Bombay Stock Exchange in India.

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Abor Joshua (2005) mentioned that a significantly positive relation between the ratio and short term debt to total asset and return on equity. However a negative relationship between the ratio of long term debt to total assets and return on equity was found. With regard to the relationship between total debt and return rate, the results show a significantly positive association between the ratio to total debt to total assets and return on equity.

Ahmad Farid(1980) found evidence that profitability measured by ROI and EPS was negatively correlated with capital structure indicated by the debt ratio.

Abdorrezze Asadi and Javad Baghaee Ravari(2009) argued that there is a significant negative relationship between profitability and leverage ratio. The relationship between growth opportunity and leverage ratio is significantly positive and there is a negative relation between tangibility and short term debt and total debt ratio but for long term debt ratio the relation positive.

Velnamby and Nimalathan (2009) noticed that the profitability will provide more accurate view of the firm's performance,

Velnampy and Niresh. (2012) investigated the relationship between capital structure and profitability of ten Sri Lankan banks which are listed in CSE. Results of the analysis showed 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 suggested 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. The outcomes of the study may guide banks, loan-creditors and policy planners to formulate better policy decisions as far as the capital structure is concern.

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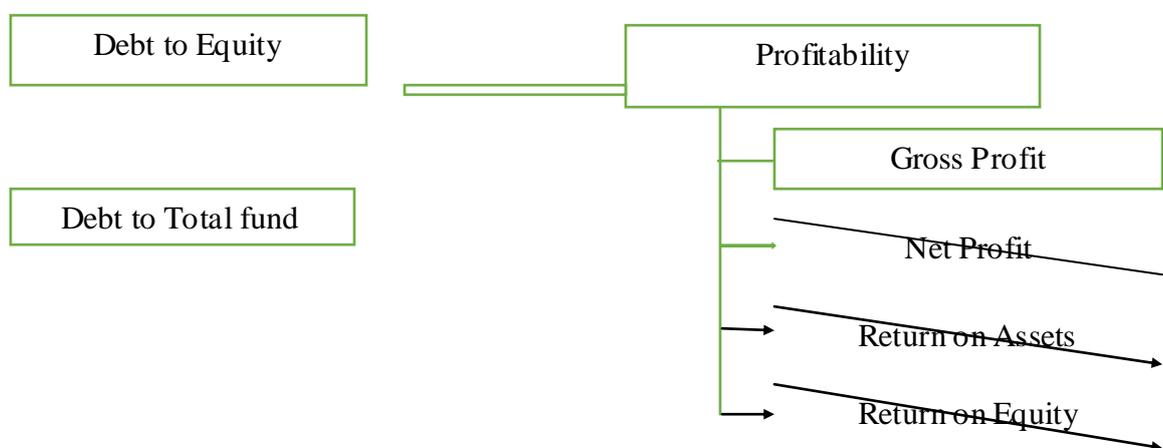
Conceptualization

The research design choice of this study is analytical, which focuses on the relationship between capital Structure and profitability. The study analyzes the company's capital

structure, debt capital, and equity capital and performance data of sample listed companies in Sri Lanka. This study will utilize Gross profit (GP), Net profit (NP), Return on Assets (ROA), and Return on Equity (ROE) and Tangibility from financial statements of the companies as a secondary data.

Capital structure Debt to Equity(DE) and Debt to Total Fund(DTF) are the independence variable. In profitability side Gross profit (GP), Net profit (NP), Return on Assets (ROA), and Return on Equity (ROE)

In this manner the following figure describes the research design of this study



| Concept | Variable | Indicator | Measurement |
|-------------------|-----------------------|--------------------------|--|
| Capital structure | Gearing | Debt to Equity ratio | Non current Liability/ Shareholders' funds or net worth |
| | | Debt to Total fund Ratio | Non current Liability/ Total assets |
| Profitability | Sale based ratio | Gross profit ratio | Gross profit/Net sales*100 |
| | | Net profit ratio | Net profit after tax/Net sales*100 |
| | Investment base ratio | Return on equity | Net income/Share holders equity |
| | | Return on asset | Net income/Total assets |

Operationalization

Operationalization of this research is revealed by concept, variables, indicator and measurement

Hypotheses

Hypotheses H₁- There is a relationship between Capital Structure and Profitability.

- H_{1.1} There is a Relationship between Debt to Equity Ratio and Gross profit Ratio.
- H_{1.2} There is a Relationship between Debt to Equity Ratio and Net profit Ratio
- H_{1.3} There is a Relationship between Debt to Equity Ratio and Return on Equity Ratio
- H_{1.4} There is a Relationship between Debt to Equity Ratio and Return on Assets Ratio.
- H_{1.5} There is a Relationship between Debt to Total fund Ratio and Gross profit Ratio.
- H_{1.6} There is a Relationship between Debt to Total fund Ratio and Net profit Ratio
- H_{1.7} There is a Relationship between Debt to Total fund Ratio and Return on Equity Ratio
- H_{1.8} There is a Relationship between Debt to Total fund Ratio and Return on Assets Ratio

Hypotheses H₂ -There is an impact of Capital Structure on profitability

- H_{2.1} There is an impact of Debt to Equity Ratio on Gross profit ratio
- H_{2.2} There is an impact of Debt to Equity Ratio on Net profit ratio
- H_{2.3} There is an impact of Debt to Equity Ratio on Return on Equity ratio
- H_{2.4} There is an impact of Debt to Equity Ratio on Return on Assets ratio
- H_{2.5} There is an impact of Debt to Total Fund Ratio on Gross profit ratio
- H_{2.6} There is an impact of Debt to Total Fund Ratio on Net profit ratio

- H_{2.7} There is an impact of Debt to Total Fund Ratio on Return on Equity ratio
- H_{2.8} There is an impact of Debt to Total Fund Ratio on Return on Assets ratio

Data collection

All the Manufacturing companies are selected to examine the relationship between the capital structure and profitability. Data are collected from secondary sources mainly from financial report of the companies, which were published by Colombo stock exchange in Sri Lanka.

The data were collected from Annual reports of the companies, Hand book of the listed companies in Sri Lanka (Colombo Stock Exchange; (2004-2013), Research studies, books, journals, newspapers and ongoing academic working papers and Web site www.cse.lk)

Sampling Design

There are 20 sector which are involved in stock Exchange. Out of these 20 sectors this research selected only Manufacturing companies because Production and service activities are the important activities in this modern world. Most of people (i.e, investors or public) can see that many instructions have been established for rendering things and service to customers.

Sri Lanka's manufacturing companies are the most significant and dynamic contributor for Sri Lanka's economy The manufacturing sector is of the economy is responsible for taking raw materials and turning them into finished products. Given the constant demand for finished products, new manufacturing companies are launched frequently Out of 20 business sectors we select the manufacturing sector because which has the significant portion of capital in CSE at 5.22% and 17.9% in GDP of the country. Industry sector which gives a contribution of 32.7 percent to the Gross Domestic Product. The 'Manufacturing' sub sector which gives the highest contribution of 54.3 percent to the Industry sector in 2014. (Sri Lanka socio economic data 2014).

Thirty seven companies are listed under Manufacturing in Sri Lanka. Thirty three companies are selected for the research.

Methodologies

Secondary data are used for the study. The following Ratios were computed to measure the capital structure.

$$\text{Debt Equity Ratio} = \frac{\text{Non current Liability}}{\text{Total Shareholders funds}}$$

$$\text{Debt to Total fund Ratio} = \frac{\text{Non Current Liability}}{\text{Total Assets}}$$

Similarly the ratios which are used to profitability are as follows

$$\text{Gross profit Ratio} = \frac{\text{Gross profit}}{\text{Net sales}} * 100$$

$$\text{Net Profit Ratio} = \frac{\text{Net profit after tax}}{\text{Net sales}} * 100$$

$$\text{Return on Equity} = \frac{\text{Net Income}}{\text{Total Shareholders ' Fund}} * 100$$

$$\text{Return On assets} = \frac{\text{Net Income}}{\text{Total assets}} * 100$$

Using about ratios analysis were carried out using SPSS. For this analysis the following model were formulated

$$\text{GP} = \beta_0 + \beta_1 \text{DE} + \alpha \text{-----(1)}$$

$$\text{GP} = \beta_0 + \beta_1 \text{DTF} + \alpha \text{-----(2)}$$

$$\text{NP} = \beta_0 + \beta_1 \text{DE} + \alpha \text{-----(3)}$$

$$\text{NP} = \beta_0 + \beta_1 \text{DTF} + \alpha \text{-----(4)}$$

$$\text{ROE} = \beta_0 + \beta_1 \text{DE} + \alpha \text{-----(5)}$$

$$\text{ROE} = \beta_0 + \beta_1 \text{DTF} + \alpha \text{-----(6)}$$

$$\text{ROA} = \beta_0 + \beta_1 \text{DE} + \alpha \text{-----(7)}$$

$$\text{ROA} = \beta_0 + \beta_1 \text{DTF} + \alpha \text{-----(8)}$$

Where

GP Gross Profit

NP Net Profit

ROA Return on Asset

ROE Return on Equity

X_1 Debt Equity

X_2 Debt to Total fund

β_0 Constant term of the model

β_2 Co efficient of the model

Descriptive Analysis of Variables

The quantitative research approach is employed to find out the findings of the research study. Since numerical and secondary data is used, quantitative approach is considered to be a suitable approach for the study. According to Leavy (2004), “statistical analyses are used to describe an account for the observed variability in the data”. This involves the process of analyzing the data that has been collected. Thus the purpose of statistics is to summarize and answer questions that were obtained in the research. 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 analysis.

Here, the population consists of 33 listed companies in manufacturing sectors.

The presentation of the statistics for each variables are shown in the table below, where mean, median, mode, minimum& maximum value for each variable as well as the standard deviation are included.

Table 1 : Overview of Variables Descriptive Statistics

| | N | Range | Minimum | Maximum | Mean | Std. Deviation |
|----------------|-----------|-----------|-----------|-----------|-----------|----------------|
| | Statistic | Statistic | Statistic | Statistic | Statistic | Statistic |
| Debt to Equity | 33 | 66.87 | -59.41 | 7.46 | -.9188 | 10.78646 |

| | | | | | | |
|--------------------|----|--------|---------|--------|---------|----------|
| Debt to Total Fund | 33 | 1.16 | .14 | 1.31 | .5335 | .24089 |
| Gross Profit | 33 | 39.24 | 3.66 | 42.90 | 18.5209 | 9.42482 |
| Net Profit | 33 | 141.92 | -52.35 | 89.57 | 6.9676 | 21.14663 |
| Return on Equity | 33 | 119.67 | -12.75 | 106.92 | 19.5658 | 25.76452 |
| Return on Assets | 33 | 263.69 | -230.30 | 33.39 | -1.5227 | 42.31093 |
| Valid N (listwise) | 33 | | | | | |

The above table 1 shows the descriptive analysis of data, it explains the profitability ratios such as Gross profit, Net profit, Return on equity and Return on assets averaged 18.52, 6.96, 19.56 and -1.52 respectively. The Debt to Equity ratio and Debt to Total Fund ratio stood at -0.9188 and 0.5335. This is an indication that the Debt to Equity is less than the Debt to total fund. The reason of the above 50% of samples were earned negative accumulated loss making periods. It impacts on average Debt to Equity of the manufacturing Companies. This confirms that the minimum level of Equity capital kept by the manufacturing firms due to their purposes. Here, the maximum values for Debt to Equity ratio and Debt to Total Fund ratios are 7.46 and 1.31. The Gross Profit ratio, Net Profit ratio, Return on Equity ratio and Return on Asset ratio are 42.90, 89.57, 106.92 and 33.39 respectively. On the other side, the minimum values for Debt to Equity ratio, Debt to Total fund ratios are -59.41, 0.14. The Gross Profit ratio, Net Profit ratio, Return On Equity ratio and Return On Asset ratio are 3.66, -52.35, -12.75 and -230.30 respectively. This concludes that the range of these variables Debt Equity ratio, Debt to Total fund ratios are 66.87, 1.16, and Gross Profit ratio, Net Profit ratio, Return On Equity ratio and Return On Asset ratio are 39.24, 141.92, 119.67, and 263.69 respectively. According to that table, standard deviation of the Return on Asset ratio is higher than the other variables.

Inferential Statistical Analysis

Inferential statistics are techniques that allow us to use the samples to make generalizations about the populations from which the samples were drawn. It is, therefore, important that the sample accurately represents the population. The process of achieving this is called sampling (Sampling strategies are discussed in detail in methodology). Inferential statistics arise out of the fact that sampling naturally incurs sampling error and thus a sample is not expected to perfectly represent the population. The methods of inferential analysis are (1) the estimation of parameter(s) and (2) testing of hypotheses.

In this study Capital structure is an independent variable. It is measured by Debt to Equity Ratio & Debt to Total Fund Ratio. Profitability is dependent variable. It is measured by Gross profit Ratio, Net profit Ratio, Return on Equity Ratio & Return on Asset Ratio.

Correlation analysis

Correlation is concerned describing the strength of relationship between two variables. In this research the correlation co-efficient analysis is undertaken to find out the relationship between capital structure and Profitability. It can be said that what relationship exist among variables. Here, dependent variable are (GP, NP, ROE and ROA) correlated with independent variable (Debt to Equity and Debt to Total fund).

Table-2 Correlation Matrix for Debt to Equity and profitability

| | | GP | NP | ROE | ROA |
|----------------|---------------------|------|-------|--------|------|
| Debt to equity | Pearson Correlation | .017 | .355* | -.417* | .265 |
| | Sig.(2-tailed) | .925 | .043 | 0.016 | .136 |
| | N | 33 | 33 | 33 | 33 |

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

The correlation coefficient has been used to check the relationship among the variables. According to the result of the Pearson's correlation shown in the Table 2:- the relationship between Independent variables (DTE,DTF) and dependent variables (GP, NP, ROE , ROA) could be observed. Using this correlation analysis, the hypotheses (main and sub hypotheses) are tested.

Debt to equity ratio correlated to Net profit ratio and the correlation value is 0.355* which is Significant at 0.05 level. At the same time Debt to Equity correlated to Return on equity ratio and the correlation value is -.0417* which is significant at 0.05 level.

Table 3 -Correlation Matrix for Debt to Total Fund and profitability

| | | GP | NP | ROE | ROA |
|--------------------|---------------------|-------|-------|------|---------|
| Debt to Total Fund | Pearson Correlation | -.183 | -.123 | .344 | -.973** |
| | Sig.(2-tailed) | .307 | .494 | .050 | .000 |
| | N | 33 | 33 | 33 | 33 |

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

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

Debt to total fund ratio correlated to Return on equity ratio and the correlation value is 0.344 which is significant at 0.05 level. Debt to total fund ratio correlated to Return on assets ratio the correlation value is $-.973^{**}$ which is significant at 0.01 level. Therefore hypothesis $H_{1.2}, H_{1.3}$ and $H_{1.7}, H_{1.8}$ are accepted.

Regression Analysis

Regression analysis is used to test the impact of capital structure on profitability of the listed manufacturing companies. Here, profitability is the dependent variable and capital structure is the independent variable.

Regression analysis was performed to investigate the impact of capital structure on profitability which the model used for the study is given below.

$$\text{Profitability} = f(\text{Capital Structure})$$

The following eight models are formulated to measure the impact of company's performance on profitability.

| Details | GP | NP | ROE | ROA |
|-------------------------------|-------------------------|-------------------------|--------------------------|-------------------------|
| R | .017^a | .355^a | -.417^a | .265^a |
| R² | .000 | .126 | .174 | .070 |
| Adjusted R² | -.032 | .098 | .147 | .040 |
| F Value | .009 | 4.466 | 6.518 | 2.348 |
| P value | .925^b | .043^b | .016^b | .136^b |

| | | | | |
|--------------------|---------------|--------------|----------------|---------------|
| Constant(B) | 18.460 | 4.116 | 23.674 | -5.790 |
| Coefficient | 0.160 | 7.535 | -10.784 | 11.275 |
| t Value | .094 | 2.113 | -2.553 | 2.532 |
| P value | .925 | .043 | .016 | .136 |

Source: Research Data

Table 4-Regression Analysis-Debt to Equity

- a. Dependent Variable: GP,NP,ROE and ROA
- b. Predictors : (Constant) DE,DTF

Table 4 shows the regression analysis. The specification of debt equity and Gross profit, Net profit, Return on Equity and Return on Asset. R^2 measure how much of the variation in the dependent variable can be explained by the independent variables. In this study, we have found $R^2 = .032$, it means 3.2% of variation of Gross profit. Like this 9.8% in Net profit, 14.7% in Return on Equity and 4% in Return on Asset. The remaining 96.8%; 90.2%; 85.3% and 96% variance are not explained, because the remaining part of the variance in profitability is related to other variables which are not depicted in the model.

Hypotheses H₂ -There is an impact of Capital Structure on profitability

H_{2.1} There is an impact of Debt to Equity Ratio on Gross profit ratio

An examination of the model summary in conjunction with ANOVA (F-value) indicates that the model explains the most possible combination of predictor variables that could contribute to the relationship with the dependent variables. For table 4 F value is .009 and respective P value is 0.925^b which is not statistically significant. Hence, Debt to Equity Ratio not significantly impact on Gross profit ratio. Therefore, hypothesis H_{2.1} is rejected.

Model 1 : $GP = \beta_0 + \beta_1 DE + \alpha$

$GP = 18.460 + 0.160 (DE) + \alpha$ and R Square Linear is 0.000.

If Debt to Equity is zero, Gross profit is to be 18.460. Further Debt to Equity is increased by one unit, the Gross profit will be increased by 0.160. Therefore, it can be said that there is a positive relationship between the two variables but not significant.

H_{2.2} There is an impact of Debt to Equity Ratio on Net profit ratio

For table 4 ANOVA F- value is 4.466 and respective P value is .043^b which is statistically significant of 5 percent levels. In this case it reveals that Debt to Equity has a significant impact on Net profit at 5 percent levels. Hence Debt to Equity ratio impact on Net profit ratio. Therefore, hypothesis H_{2.2} is accepted.

Model 2 : NP = $\beta_0 + \beta_1(\text{DE}) + \alpha$

NP = **4.116 + 7.535 (DE) + α** and R Square Linear is .126. If Debt to Equity is zero, Net profit is to be 4.116. Further Debt to Equity is increased by one unit, the Net profit will be increased by 7.535. Therefore, it can be said that there is a positive relationship between the two variables.

H_{2.3} There is an impact of Debt to Equity Ratio on Return on Equity ratio

For table 4 ANOVA F- value is 6.518 and respective P value is .016^b which is statistically significant at 5 percent levels.. In this case it reveals that Debt to Equity has a significant impact on Return on Equity at 5 percent levels. Hence, Debt to Equity Ratio impact on Return on Equity ratio. Therefore, hypothesis H_{2.3} is accepted.

Model 3 : ROE = $\beta_0 + \beta_1(\text{DE}) + \alpha$

ROE = **23.647 - 10.784 (DE) + α** and R Square Linear is 0.174.

The regression equation exhibits that the relationship between Debt to Equity and Return on Equity. If Debt to Equity is zero, Return on Equity is to be 23.674. Debt Equity is increased by one unit, the Return on Equity will be decreased by 10.784. Therefore, it can be said that there is a negative relationship between the two variables.

H_{2.4} There is an impact of Debt to Equity Ratio on Return on Assets ratio

For table 4 ANOVA F- value is 2.348 and respective P value is .136^b which is not statistically significant. Hence, Debt to Equity Ratio not significantly impact on Return On Assets. Therefore, hypothesis H_{2.4} is rejected.

Model 4: ROA = $\beta_0 + \beta_1(\text{DE}) + \alpha$

$$\text{ROA} = -5.790 + 11.275 (\text{DE}) \text{ and R Square Linear is } 0.070.$$

The regression equation exhibits that the relationship between Debt to Equity and Return on Asset. If Debt Equity is zero, Return on Asset is to be (- 5.790). Further Debt to equity is increased by one unit, the ROA will be increased by 11.275. Therefore, it can be said that there is a positive relationship between the two variables but not significant.

Table-5: Regression Analysis- Debt to Total Funds

| Details | GP | NP | ROE | ROA |
|-------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| R | .183^a | .123^a | .344^a | .973^a |
| R² | .034 | .015 | .118 | .947 |
| Adjusted R² | .002 | -.017 | .090 | .945 |
| F Value | 1.027 | .479 | 4.156 | 55.57 |
| P value | .307^b | .494^b | .050^b | .000^b |
| Constant(B) | 18.913 | 7.561 | 17.552 | 7.838 |
| Coefficient | -.160 | -.242 | .821 | -3.814 |
| t value | -1.038 | -.692 | 2.039 | -23.57 |
| P value | .307 | .494 | .050 | .000 |

Source: Research Data

- a. Dependent Variable: GP, NP, ROE and ROA
- b. Predictors : (Constant)

Table 5 shows the regression analysis. The specification of Debt to Total fund and Gross profit, Net profit, Return on Equity and Return on Asset. R² measure how much of the variation in the dependent variable can be explained by the independent variables. In this study, we have found R²= .034, it means 3.4% of variation of Gross profit. Like this .1.5% in Net profit, 11.8% in Return on Equity and 94.75% in Return on Asset. The remaining 96.6%; 98.5%; 88.2% and 5.25% variance are not explained, because the remaining part of the variance in profitability is related to other variables which are not depicted in the model.

H_{2.5} There is an impact of Debt to Total Fund Ratio on Gross profit ratio

For table 5 ANOVA F- value is 1.027 and respective P value is .307^b which is not statistically significant. Hence, Debt to Total fund Ratio not significantly impact on Gross profit ratio. Therefore, hypothesis H_{2.5} is rejected.

$$\text{Model 5: GP} = \beta_0 + \beta_1(\text{DTF}) + \alpha$$

$$\text{GP} = 18.913 - 0.160(\text{DTF}) + \alpha \text{ and R Square Linear is } 0.034.$$

The regression equation exhibits that the relationship between Debt to Total Fund and Gross profit. If Debt to Total Fund is zero, GP is to be 18.913. Further Debt to Total Fund is increased by one unit, the GP will be decreased by .160. Therefore, it can be said that there is a negative relationship between the two variables but not significant.

H_{2.6} There is an impact of Debt to Total Fund Ratio on Net profit ratio

For table 5 ANOVA F- value is 0.479 and respective P value is .494^b which is not statistically significant. Hence, Debt to Total Fund not significantly impact on Net profit ratio. Therefore, hypothesis H_{2.6} is rejected.

$$\text{Model 6: NP} = \beta_0 + \beta_1(\text{DTF}) + \alpha$$

$$\text{NP} = 7.561 - 0.242(\text{DTF}) \text{ and R Square Linear is } 0.015.$$

The regression equation exhibits that the relationship between Debt to Total Fund and Net profit. If Debt to Total Fund is zero, NP is to be 7.561. Further Debt to Total Fund is increased by one unit, the NP will be decreased by 0.242. Therefore, it can be said that there is a negative relationship between variables but not significant.

H_{2.7} There is an impact of Debt to Total Fund Ratio on Return on Equity ratio

For table 5 ANOVA F- value is 4.156 and respective P value is .050^b which is statistically significant at 5 percent levels.. In this case it reveals that debt to Total Fund has a significant impact on Return on Equity at 5 percent levels. Hence, Debt to Total Fund significantly impact on ROE. Therefore, hypothesis H_{2.7} is accepted.

$$\text{Model 7 : ROE} = \beta_0 + \beta_1(\text{DTF}) + \alpha$$

$$\text{ROE} = 17.552 - .821(\text{DTF}) \text{ and R Square Linear is } 0.118.$$

The regression equation exhibits that the relationship between Debt to Total Fund and ROE. If Debt to Total Fund is zero, ROE is to be 17.552. Further Debt to Total Fund is increased

by one unit , the ROE will be decreased by .821 . Therefore, it can be said that there is a negative relationship between the two variables.

H_{2.8} There is an impact of Debt to Total Fund Ratio on Return on Assets ratio
 For table 5 ANOVA F- value is 55.57 and respective P value is .000^b which is statistically significant at 1 percent levels. In this case it reveals that debt to Total Fund has a significant impact on Return on Asset at 1 percent levels . Hence, Debt to Total Fund significantly impact on Return on Assets. Therefore, hypothesis H_{2.8} is accepted.

$$\text{Model 8 : ROA} = \beta_0 + \beta_1 (\text{DTF}) + \alpha$$

$$\text{ROA} = 7.838 - 3.814(\text{DTF}) + \alpha \text{ and R Square Linear is } 0.947.$$

The regression equation exhibits that the relationship between Debt to Total Fund and ROA. If Debt to Total Fund is zero, ROA is to be 7.838. Further Debt to Total Fund is increased by one unit, the ROA will be decreased by 3.814. Therefore, it can be said that there is a negative relationship between the two variables.

This study demonstrates the necessity of disaggregating capital structure in to debt capital and equity capital. These two categories of capital or fund need to be viewed and analyzed separately.

This study has examined empirically the relationship between the capital structure and profitability using a sample of listed companies in Sri Lanka over 2004-2013. The findings of this study are consistent with those of prior studies.

The Present Study is shown of the Summary of the Testing Hypotheses

Table 6 -Summary of Testing Hypotheses

| No. | Hypotheses | Conclusion | Tools | Result |
|------------------------|--|------------|-------------|--------|
| H₁ | There is a Relationship between Capital structure and the profitability | | | |
| H_{1.1} | There is a Relationship between Debt to Equity and Gross profit. | Rejected | Correlation | 0.17 |
| H_{1.2} | There is a Relationship between Debt to Equity and Net profit | Accepted | Correlation | .355* |
| H_{1.3} | There is a Relationship between Debt to Equity and Return on equity ratio | Accepted | Correlation | -.417* |

| | | | | |
|------------------------|---|----------|-------------|---------|
| H_{1.4} | There is a Relationship between Debt to Equity and Return on Asset profit ratio | Rejected | Correlation | .265 |
| H_{1.5} | There is a Relationship between Debt to Total fund Ratio and Gross profit ratio | Rejected | Correlation | -.183 |
| H_{1.6} | There is a Relationship between Debt to Total fund Ratio and Net profit ratio | Rejected | Correlation | -.123 |
| H_{1.7} | There is a Relationship between Debt to Total fund Ratio and Return on equity ratio | Accepted | Correlation | .344 |
| H_{1.8} | There is a Relationship between Debt to Total fund Ratio and Return on Assets | Accepted | Correlation | -.973** |

| No. | Hypotheses | Conclusion | Tools | Result |
|------------------------|--|-------------------|--------------|---------------|
| H₂ | There is an impact of Capital Structure on profitability | | | |
| H_{2.1} | There is an impact of Debt to Equity Ratio on Gross profit ratio | Rejected | Regression | .925 |
| H_{2.2} | There is an impact of Debt to Equity Ratio on Net profit ratio | Accepted | Regression | .043 |
| H_{2.3} | There is an impact of Debt to Equity Ratio on Return on equity ratio | Accepted | Regression | .016 |
| H_{2.4} | There is an impact of Debt to Equity Ratio on Return on Asset profit ratio | Rejected | Regression | .136 |
| H_{2.5} | There is an impact of Debt to Total Fund Ratio on Gross profit ratio | Rejected | Regression | .307 |
| H_{2.6} | There is an impact of Debt to Total Fund Ratio on Net profit ratio | Rejected | Regression | .494 |

| | | | | |
|------------------------|--|----------|------------|------|
| H_{2.7} | There is an impact of Debt to Total Fund Ratio on Return on equity ratio | Accepted | Regression | .050 |
| H_{2.8} | There is an impact of Debt to Total Fund Ratio on Return on Asset ratio | Accepted | Regression | .000 |

Conclusion & Recommendation

There are two hypotheses formulated in this research. Hypotheses(H₁) one is there is a relationship between Capital Structure and Profitability. The research finding showed that Debt to Equity ratio has the relationship with two dependent variables that is Net profit ratio(.355^{*}) and Return on Equity ratio(-.417^{*}). Nimalathan.(2010), Jude Leon.(2013) and Velampy, Aloy Niresh. (2012) are proved it in their research. At the same time debt to equity has no relationship with two dependent variables that is Gross profit ratio and Return on Asset ratio. Kajanathan. & Nimalathan (2013) and Leon. (2013) analyzed the same finding in their research.

Debt to Total Fund ratio has the relationship with Return on Equity(.344) and Return on Asset(-.973^{**}) ratio Nimalathan. at al 2012, Amarjit Gill, Nahum Biger, Neil Mathur 2011 are proved in their research. At the same time Debt to Total Fund has no relationship between Gross profit ratio and Net profit ratio. Nimalathan proved in their research.

Another hypotheses is (H₂) There is an impact of Capital Structure on profitability. The research finding showed that Debt to Equity ratio has an impact on Net profit ratio (.355^a) and Return on Equity ratio(-.417^a). At the same time Debt to Equity ratio has no impact on Gross profit ratio and Return on Asset ratio.

Debt to Total Fund ratio significantly impact on Return on Equity ratio and Return on Asset ratio. At the same time Debt to Total Fund ratio not significantly impact on Gross profit ratio and Net profit ratio. Kajanathan. and Nimalathan 2013, Jude Leon. 2013 proved in their research.

Based on the finding from this study ,the following suggestion are offered.

1. Gross profit ratio not correlated with Debt to Equity ratio and Debt to Total fund ratio. It indicates one more time the management should work hard to increase the gross profit associated with sales . Price changes greatly affect how many units a company can sell, which in turn influences the overall profit numbers. Pricing items

correctly with acceptable profit margins is challenging for many businesses, especially in a competitive market. Profitability ratios are linked with each other, and logically the increase in profits, will increase market value of the manufacturing Companies. The main point is all manufacturing companies are generating profits in order to maximize share price and market value of equity.

2. Net profit ratio correlated with Debt to Equity ratio but not correlated with Debt to Total fund ratio. An economic slowdown can greatly decrease the value of a company's inventory. This devaluation of inventory will affect the company's net profit margins. On the other hand, moving inventory and increasing the company's sales can have a positive impact on net profit margin. This indicates that all manufacturing companies are generating profits in order to maximize share price and market value of equity.
3. Return on Equity correlated with Debt to Equity and Debt to Total fund. Paying high taxes can have a negative impact on a business's return on equity. The company can find to lower its taxes will increase that return. A business should take advantage of any government policies, subsidies or incentives that favor its industry. Therefore the management can to increase the return associated with equity.
4. Return on Asset not correlated with Debt to Equity ratio but correlated with debt to Total Fund ratio. In a positive Return on Assets, the company is earning income based on its investment in operation. An increasing trend of ROA indicates that the profitability of the company is improving.

During the research period we can find that most of the sample companies try to increase the own equity steadily and vacuum the expenses by setoff against the profit. It will help future growth and development of the companies.

Scope Of Future Research

Future research studies could be undertaken to include more and new variables. The model can be modified to capture other variables of capital structure and profitability in order to obtain more comprehensive results.

Further research should include time-series data collected to cover a longer period. The period under study could be extended to cover more years and also to incorporate the periods before, during and after the financial crisis.

In addition further research could also involve longer research periods not limited to one semester to enable comprehensive collection of research data in order to obtain more accurate and representative results.

Future research should be undertaken to enable the use of real time data as this would ensure an accurate prediction of the relationship between capital structure and profitability. When it comes to the measures for capital structure this study has only applied quantitative data for possessed capital by different fund. It would be interesting to in a more qualitative way to investigate managers' and owners' direct involvement in managing the firm and separate out the effect of active and more passive owners.

All organization would like to maximize its profitability. Therefore it should avoid unnecessary expenditure

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