

DETERMINATION OF CAPITAL STRUCTURE OF NON-FINANCIAL LISTED COMPANIES IN COLOMBO STOCK EXCHANGE (CSE)

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ABSTRACT

Capital structure choice poses a lot of challenges to firms. Determining a suitable mix of equity and debt is one of the most strategic decisions non-financial companies are confronted with. A wrong financing conclusion has the tendency of stalling the fortunes of any business. Therefore, if managers are to achieve the goal of capital maximization, conscious steps must be taken in the right direction and at the right time to identify those factors that must be taken into knowledge in determining appropriate financing mix. It is upon this premise that the objective of this study is to find the determinants of capital structure of non-financial listed companies listed in the Colombo Stock Exchange (CSE). In this study financial cost and profitability are the independent variables and capital structure is the dependent variable. Capital structure is measured with the total debt ratio. Further, the financial cost is measured with the proxy of financial expenses and profitability is measured with the proxy of return on assets. Data were collected from the Annual Reports of 215 listed companies for a period of 5 years from 2012 to 2016. Employing multiple regression analysis, this study found that there is a positive relationship between financial cost and capital structure while there is a significant negative relationship between profitability and capital structure of non-financial listed companies of CSE during the study period.

Keywords: Capital Structure Decision, Determinants of Capital Structure, Non-Financial Listed Companies, Colombo Stock Exchange

Introduction

Capital is a significant and vital resource for all companies. The capital funds can be divided into two main groups, namely equity and debt. Equity rises when firms sell some of their ownership rights to gain funds for operation and investing activities. Debt is a contractual agreement, whereby companies borrow an amount of money and pay back it with interest within a specific time frame.

capital structure can be stated as the mixture of sources of capital a firm uses (debt, preferred shares, and ordinary shares). The volume of debt that a firm uses to finance its assets is called leverage. A business with a lot of debt in its capital is said to be highly levered. A business with zero debt is said to be non-levered.

A proper capital structure is a critical choice for any business. The decision is important not only because of the need to maximize returns to the shareholders, but it is also vital because of the impact of such a conclusion on an organization's ability to deal with its competitive situation.

Over the past numerous decades, theories on a firm's capital structure choice have evolved in many ways, with many models being built to explain a firm's financing performance. The theories recommend that firms select capital choice dependent on characteristics that determine the various costs and benefits related to debt and equity financing.

Problem Statement

The theory of capital arrangement remains one of the most provocative issues in present corporate finance subject and Myer's (1984, p575) thirty-three years old question "How do firms choose their capital structure?" remains unanswered. Therefore, there is a strong need to conduct empirical studies on these issues brought by Myers to get some further evidence on the capital structure theory.

Many studies concentrated their empirical research on the determinants of the level of debt or observed debt ratios of the firm to explain the cross-sectional regularities in the level of debt (Titman and Wessels, 1988, Harris and Raviv, 1991, Rajan and Zingales, 1995).

However, in the case of non-financial companies, there are still differences in results gathered by research scholars as can be seen from the signs and statistical significance of the regression coefficient that vary from study to study.

Objectives of this study

The study generally aims to fill the gap in the literature by empirically examining the relationship between the use of debt in the capital structure of non-financial companies listed in CSE and the factors related to the capital structure (Profitability and Financial cost). Specifically, the objectives of this research are to achieve the following objectives,

- To examine the factors affecting the capital structure decision of non-financial companies listed in CSE. For this purpose, a firm-specific factor or determinant which includes profitability and a macroeconomic factor, namely financial cost is tested to see its relationship with leverage ratio, namely the total debt ratio.
- To explain the relationship between leverage (total debt ratio) and the determinants of capital structure (Profitability and Financial cost) in the non-financial companies listed in the Colombo Stock Exchange (CSE).

Literature Review

There are a lot of studies have been conducted by many authors from time to time. In 2015 a research conducted by Mohammad Alipour, Mir Farhad Seddigh Mohammadi, Hojjatollah Derakhshan that is determinants of the capital structure of firms in Iran. The results of the investigation recommend that factors such as firm size, financial flexibility, asset structure, profitability, liquidity, growth, risk, and state ownership affect all measures of the capital structure of Iranian corporations. Short-term debt is found to represent a significant financing source for companies in Iran.

Thereafter Saurabh Chadha, Anil K. Sharma, (2015) studied on determinants of capital structure from India. "size, age, firm growth, profitability, non-debt tax, business risk, uniqueness, and proprietorship arrangement are significantly connected with the firm financial leverage or key factors of capital choice in Indian manufacturing sector. Also, other influences like dividend payout, liquidity, interest coverage ratio, cash flow coverage ratio, India inflation, and GDP growth rate are empirically found to be inconsequential to determine the capital construction of the Indian manufacturing sector.

In 2017 another study was conducted by Rajni Sofat, Sukhdev Singh on determinants of the capital structure of manufacturing firms in India. The results suggest that variables like asset composition, business risk and return on assets are positively related to debt ratio whereas firm size and debt service capacity are negatively related to debt ratio. The asset composition, business risk and return on assets appear to be significant determinants of a capital structure while firm size and debt service capacity are insignificant determinants.

Then Satish Kumar, Sisira Colombage, Purnima Rao, (2017), Research on capital structure determinants. Major results show an increase of interest in research on factors of the capital structure of the companies located in emerging markets. However, it is observed that these regions are still under-examined which provides more scope for research both empirical and survey-based studies. The majority of investigation studies are conducted on large-sized firms by using secondary data and regression-based models for the analysis, whereas studies on small-sized firms are very meager. As the majority of the research papers are written only at the organizational level, the impact of leverage on various industries is yet to be examined. The review highpoints the major factors of capital structure and their association with leverage.

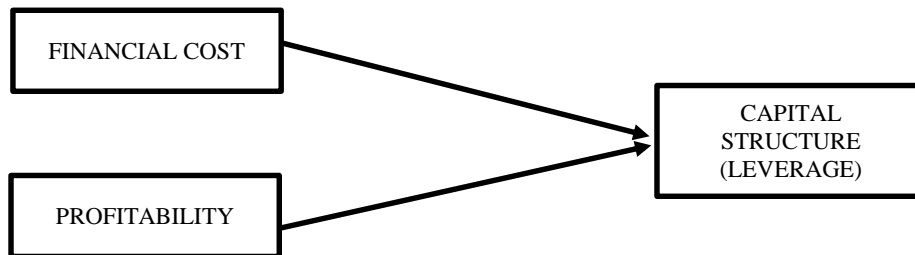
In 2017 another study was conducted by Hui Li, Petros Stathis on determinants of capital structure in Australia. The authors found a set of eight factors that are reliably important for capital structure decision making. These factors include "profitability, a log of assets, median industry leverage, industry growth, and market to book ratio, tangibility, capital expenditure, and investment tax credits". The empirical evidence indicates weakening support for the pecking order hypothesis and increasing support for the trade-off theory in Australia.

Methodology

Conceptual Framework

this study is to explain the relationship between leverage (total debt ratio) and the determinants of capital structure (Profitability and Financial cost) of the non-financial companies listed in the Colombo Stock Exchange (CSE).

Figure 1 conceptual model



Data Source and Data Collection

All the necessary data used in this analysis are collected from Secondary sources. Annual reports of the selected non-financial companies listed on the Colombo Stock Exchange (CSE), and the website of CSE are the secondary source of data were used.

Sample Period

In this analysis, the period for the test of the impact of financial cost and profitability on capital structure decision the sample included a period of five years starting from 2012 to ending with 2016.

Variables

Independent variables

Return on assets

Return on assets is used to measure the profitability in this study and this measured as follows.

$$\text{Return on assets} = \frac{\text{net profit}}{\text{total assets}}$$

Financial Cost

The financial cost is another independent variable used in this study and this measured as follows.

$$\text{financial cost} = \text{net financial cost} + \text{financial income}$$

Dependent variable

Total debt ratio

The total debt ratio is used to measure the leverage in this study and this measured as follows.

$$\text{Total debt ratio} = \frac{\text{Total debt}}{\text{Total assets}}$$

Finding and conclusions

Table 1- Number of non-financial listed companies in CSE.

Case Processing Summary						
	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
Companies	215	100.0%	16	7.45%	199	92.55%

Table 1 represents that, there are 215 non- financial companies are listed on the Colombo Stock Exchange and out of 215 non- financial listed companies only 199 companies (which represent 92.55% of the population) have

five years of dates from 2012 to 2016. In this study, 16 non-financial listed companies were excluded (which represent 7.45 of the population). Because, some of the non-financial listed companies were listed and some are left from the list of CSE between 2012 to 2016 (mid-year listed companies). Those 16 companies only have 2 or 3 years of data, which cannot be compared with other non-financial listed companies.

Descriptive Statistics

Total debt ratios

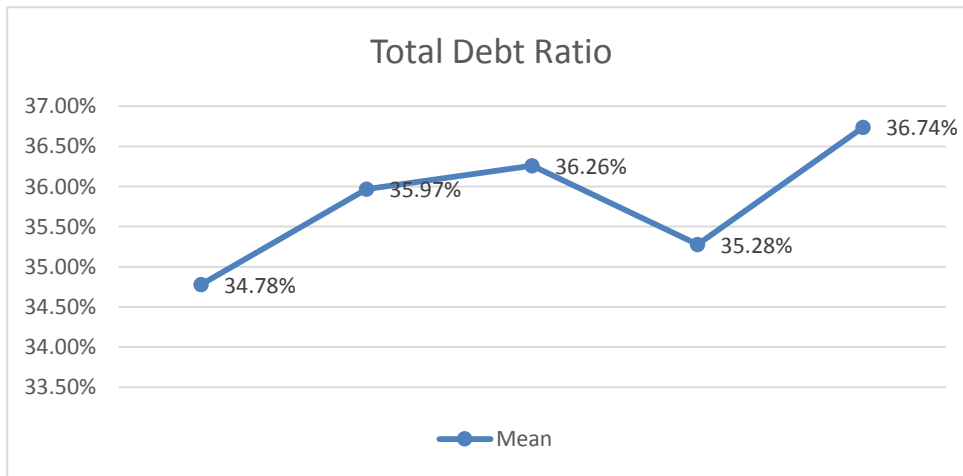
This is the dependent variable of this study.

Table 2 total debt ratio

	N	Mean
	Statistic	Statistic
TDR_2012	199	.3478
TDR_2013	199	.3597
TDR_2014	199	.3626
TDR_2015	199	.3528
TDR_2016	199	.3674
Valid N (listwise)	199	

According to table 2, the mean statistics of non-financial listed companies in 2016 have a large portion of debt (36.74%) amount in the capital structure while comparing with other years. In 2012 have the lowest portion of the debt (34.78%). The trend of capital structure of non-financial listed companies shows inline chart figure 2.

Figure 2 – Mean values of Total Debt Ratio from 2012 to 2016



Return on assets.

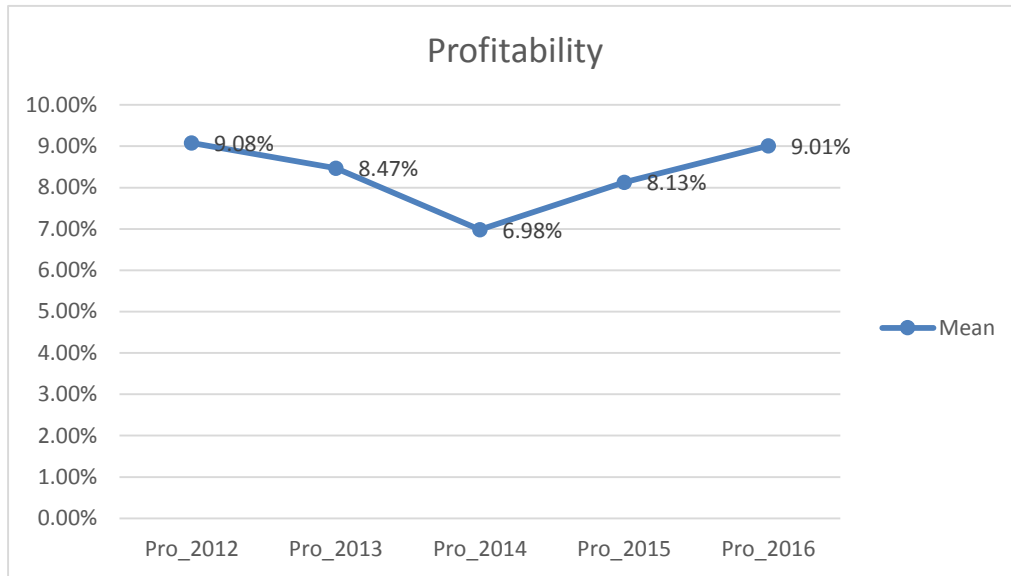
This is the first independent variable of this study.

Table 3 Descriptive Statistics

	N	Mean
Pro_2012	199	.0908
Pro_2013	199	.0847
Pro_2014	199	.0698
Pro_2015	199	.0813
Pro_2016	199	.0901
Valid N (listwise)	199	

According to table 3, the mean statistics of non- financial listed companies in 2012 have a large amount of Profitability (9.08%) while comparing with other years. In 2014 have the lowest profit of Profitability (6.98%). The trend of profitability of non- financial listed companies shows inline chart figure 3.

Figure 3 – Mean values of Profitability (return on assets) from 2012 to 2016



Financial cost

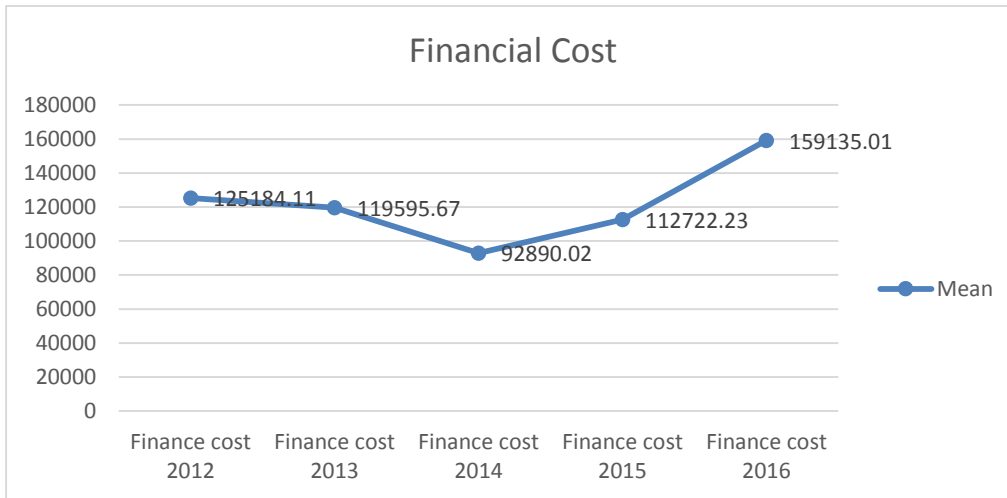
This is the Second independent variable of this study.

Table 4 Descriptive Statistics (LKR '000)

	N	Mean
Finance cost 2012	199	125184.11
Finance cost 2013	199	119595.67
Finance cost 2014	199	92890.02
Finance cost 2015	199	112722.23
Finance cost 2016	199	159135.01
Valid N (listwise)	199	

According to table 4, the mean statistics of non- financial listed companies in 2016 have a large amount of Financial cost (Rs. 159168) while comparing with other years. In 2014 have the lowest large amount of Financial cost (Rs. 92890). The trend of Financial cost of non- financial listed companies shows in the line chart figure 4.

Figure 4 - Mean values of financial cost from 2012 to 2016



Correlation Analysis

Correlation is a mutual relationship or connection between two or more things. In this analysis, we can be able to find out the relationship between the dependent and independent variables. The results correlation analysis is known as the correlation coefficient always range between -1 and +1.

Table 5 Interrelation with finance cost and capital structure

Year	Correlation (at 99% confidence level)
2012	0.296
2013	0.215
2014	0.226
2015	0.220
2016	0.293

Table 5 represents that; it shows a positive relation between finance cost and total debt ratio. It means if the financial cost increased, the total debt ratio will also be increased and vice versa. There is an independent variable (Finance cost) and dependent variable (Total debt ratio). The independent variable affects or determines the effect on the dependent variable but the degree of impact on capital structure is very low because the correlation value shows the range between 0.215 and 0.296.

Table 6 Interrelation with profitability and capital structure.

Year	Correlation (at 95% confidence level)
2012	-0.155
2013	-0.203
2014	-0.083
2015	-0.080
2016	-0.116

Table 6 represents that; it shows a negative relation between profitability and total debt ratio. It means if the profitability increased, the total debt ratio will be decreased and vice versa. There is an independent variable (profitability) and dependent variable (Total debt ratio). The independent variable affects or determines the effect on the dependent variable but the degree of impact on capital structure is very low because the correlation value shows the range between 0.08 and 0.203.

Table 7 Overall analysis with correlation

		Finance cost	Profitability	Total debt ratio
Finance cost	Pearson Correlation	1	.019	.257**
	Sig. (2-tailed)		.791	.000
	N	199	199	199
Profitability	Pearson Correlation	.019	1	-.148*
	Sig. (2-tailed)	.791		.037
	N	199	199	199
Total debt ratio	Pearson Correlation	.257**	-.148*	1
	Sig. (2-tailed)	.000	.037	
	N	199	199	199

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

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

According to table 7, there is a positive relationship between financial cost and total debt ratio (0.257) at the 99% confidence level. That means if the financial cost increases by 1 the total debt ratio will increase by 0.257 vice versa. But when compared with profitability that shows a negative relationship between total debt ratio (-0.148) at the 95% confidence level. That means if the profitability increases by 1 the total debt ratio will decrease by 0.148 vice versa.

Regression analysis

regression analysis is a numerical process for estimating the association among variables. It includes different methods for modeling and analyzing the factors when the attention is on the link between a dependent variable and one or more independent variables or predictors.

In simple linear regression, a single independent variable is used to predict the value of the dependent variable. In multiple linear regressions, two or more independent variables are used to predict the value of a dependent variable. The difference between the two is the number of independent variables.

Regression analysis used to know which among the autonomous variables are linked to the dependent variable and to explore the forms of these relationships. In restricted circumstances, regression analysis can be used it infer causal relationships between the independent and dependent variables.

multi-collinearity is an incidence in which one forecaster variable in a multiple regression modal can be linearly projected from the others with a substantial degree of correctness.

It is caused by the inaccurate use of dummy variables. It is caused by the inclusion of a variable which is computed from other variables in the data set. Multi-collinearity can also result from the repetition of the same kind of variable generally occurs when the variables are highly correlated to each other. To avoid multi-collinearity, we can use remove highly correlated predictors from the model. If we have two or more factors with a high VIF, remove from the model.

Table 8 Overall analysis with regression

R	R2	F	Sig	Regression equation
.300	.090	9.659	.000	TDR= 0.356 + 0.027 finance cost- 0.395 Profitability

R square value is .090, which means 9% of the variation in total debt ratio, can be explained by financial cost and profitability. The P-value from the ANOVA table is less than 0.05, which means that at least one of the two variables: profitability and financial cost can be used to capital structure decisions.

The equation $TDER = .356 + 0.027 \text{ finance cost} - 0.395 \text{ Profitability}$

shows, thus for every unit in profitability negatively impact on total debt ratio (0.395), provided the other variable remains unchanged. While every unit in financial cost positively impacts on total debt ratio (0.027) provided by other variable remain unchanged. Based on the standardized beta coefficients, that effect of financial cost (0.26) and the effect of profitability (-0.176). According to the VIF, all the VIF values are less than 5, therefore multi-collinearity is not serious.

the summary of the research study, it appears that profitability is negatively related to the total debt ratio indicating strong compliance to the pecking order theory. Financial cost shows a positive relationship with the total debt ratio that compliance with the static trade-off theory. A summary table 9 shows, the outcome of the study.

Table 9 summary

Determinants	Actual Results
Profitability	Negative
Financial cost	Positive

Recommendations for Future Research

An important limitation of this study is the period for which the data is sampled. First, the sample horizon is petty short, compared to the sample in the prior literature. Second, as far as the non-financial listed companies are considered only some of the companies are selected for the analysis. The rest of the companies are omitted from the study due to the lack of data availability and extraordinary circumstances attached to the companies. According, further studies could be carried out overcoming above mentioned limitations on non-financial companies listed on CSE. Furthermore, researchers in the future could also consider small and medium-sized companies and privately-owned companies for their studies individually or a collective or different measure of impact on capital structure, profitability, and financial cost can be used. Moreover, a longer time horizon could be considered for the analysis and sample size could be increased. Use of different firms' specific factors as well as macro-economic variables such as inflation and interest rate so and so. Also, future researchers could use different measures of the capital structure of corporates like debt, long term debt, and short-term debt. Considering the recommendations on future research would help to find out a sensible role and importance of capital structure decisions in a corporation as it is being one of the foremost decisions a manager confronted with.

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