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

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Abstract

Capital structure decision poses a lot of challenges to firms. Determining an appropriate mix of equity and debt is one of the most strategic decisions non-financial companies are confronted with. A wrong financing decision has the tendency of stalling the fortunes of any business. Therefore, if managers are to achieve the goal of wealth 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 this conceptual piece is designed to guide the top levels of corporate managers in capital structure decisions. The paper explores a body of literature in saying determinants of capital structure decision of non-financial listed companies.

Key words; capital structure decision, determinants of capital structure

1. Introduction

Capital is a significant and vital resource for all companies. The capital resources can be divided into two main categories, namely equity and debt. Equity arises when companies sell some of its 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 referred to as "the mixture of sources of funds a firm use" (debt, preferred shares, and ordinary shares). The amount of debt that a firm uses to finance its assets is called leverage. A firm with a lot of debt in its capital structure is said to be highly levered. A firm with no debt is said to be unlevered.

An appropriate capital structure is a critical decision for any business organization. The decision is important not only because of the need to maximize returns to the shareholders, but it is also important because of the impact of such decision on an organization's ability to deal with its competitive environment. Over the past several decades, theories on a firm's capital structure choice have evolved along many directions, with many models being built to explain a firm's financing behavior. The theories suggest that firms select capital structure depending on attributes that determine the various costs and benefits associated with debt and equity financing.

2. Problem Statement

The theory of capital structure remains one of the most controversial issue in modern corporate finance subject and Myer's old question "How do firms choose their capital structure?" remains unanswered. Therefore, there is a strong need to conduct empirical studies on these issues. 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.

However, 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. Therefore, there is a need and necessity to conduct such research in this area.

3. Objectives

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 Colombo stock exchange and the relationship between Profitability and Financial cost on capital structure.

4. Literature Review

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

Thereafter Saurabh Chadha, Anil K. Sharma, (2015) studied on determinants of capital structure from India. It was empirically found that: size, age, asset tangibility, growth, profitability, non-debt tax shield, business risk, uniqueness and ownership structure are significantly correlated with the firm financial leverage or key determinants of capital structure in Indian manufacturing sector. Also, other variables like dividend payout, liquidity, interest coverage ratio, cash flow coverage ratio (CFCR), India inflation and GDP growth rate are empirically found to be insignificant to determine the capital structure of Indian manufacturing sector.

In 2017 another study was conducted by Rajni Sofat, Sukhdev Singh on determinants of 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 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 findings show an increase of interest in research on determinants of capital structure of the firms 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. Majority of research 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 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 highlights the major determinants of capital structure and their relationship 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 which are reliably important for capital structure decision making. These factors include: profitability, 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.

5. Methodology

This study uses quantitative data for the analysis while the data are derived from secondary data sources (Annual reports). There are 299 listed companies in the Colombo Stock Exchange as at 02nd February 2018. Therefore, it is difficult and time-consuming exercise to analyze all the listed companies to identify the effects of financial cost and profitability on capital structure decision.

Therefore, it is necessary to select a representative sample. Accordingly, the effects of financial cost and profitability on capital structure decision are analyzed using the information of selected 199 non-financial listed companies' of CSE. In this study, frequency analysis, descriptive analysis, correlation analysis and regression analysis are used to determine the impact of capital structure.

6. Finding and conclusions

this study is to examine the capital structure decision of selected non-financial companies those are listed on CSE to assess the extent to which two firm specific variables, namely profitability and financial cost are associated with measure of capital structure namely total debt ratio.

a. Frequency Analysis

the population is 215 non- financial listed companies on Colombo stock exchange. The research period is 2012 to 2016 (5 years) but some of the companies do not have 5 years' data; those companies have been eliminated. After elimination of those companies there are 199 companies were engaged in this analysis.

Table 1 Number of non-financial listed companies

	Case Processing Summary					
	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
Companies	199	100.0%	0	0.0%	199	100.0%

b. Descriptive Statistics

Descriptive statistics are brief descriptive coefficient that summarizes a given data set, which can be either a representation of the entire population or a sample of it. Descriptive statistics are broken down into measure of central tendency and measure of variability or spread. Measure of central tendency includes the mean, while measures of variability include the standard deviation, minimum and maximum variables.

Total debt ratios

Table 2 Descriptive Statistics

	N	Mean	Std. Deviation
TDR_2012	199	.3478	.26542
TDR_2013	199	.3597	.32738
TDR_2014	199	.3626	.35840
TDR_2015	199	.3528	.31778
TDR_2016	199	.3674	.32448
Valid N (list wise)	199		

The table 2 represent the Mean values and standard deviation values of total debt ratio over 5 years (2012-2016). In the year 2012, total debt ratios of 199 non-financial listed companies have mean value of 0.3478 with the standard deviation value 0.26542. It means 34.78% on debt investment others are equity investment.

Return on assets.

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 (list wise)	199	

Table 3 shows the number of cases and Mean values of Return on assets over 5 years (2012-2016). In the year 2012, returns on assets of 199 non-financial listed companies have mean value of 0.0908 (9.08%). Then in 2013 and 2014 that was decline as 0.0847 (8.47%) and 0.0698 (6.98%) respectively. Thereafter in 2015 and 2016 that was rise as 0.0813 (8.13%) and 0.0901 (9.01%). Trent of return on assets shown in the Figure 1.

Figure 1

Figure 1
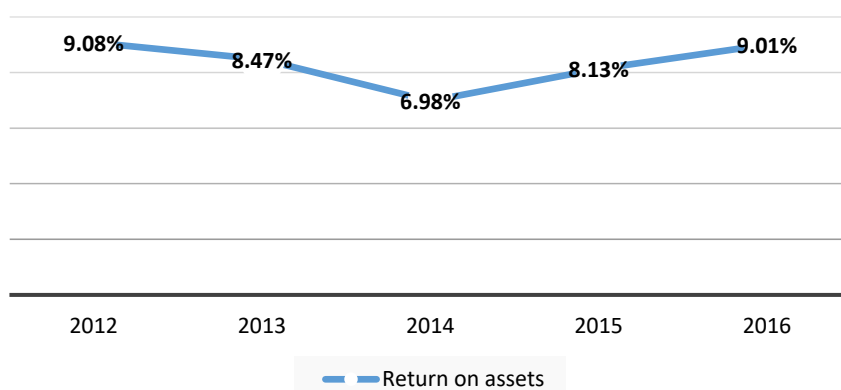
Financial   cost

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 (list wise)	199	

Table 4 shows, number of cases and Mean values of financial cost over 5 years (2012-2016). In the year 2012, financial costs of 199 non-financial listed companies have mean value of 125184110. Then in 2013 and 2014 that was decline as 119595670 and 92890020 respectively. Thereafter in 2015 and 2016 that was rise as 112722230 and 159135010. Trent of return on assets shown in the Figure 2.

Figure 2 financial cost

Finance cost
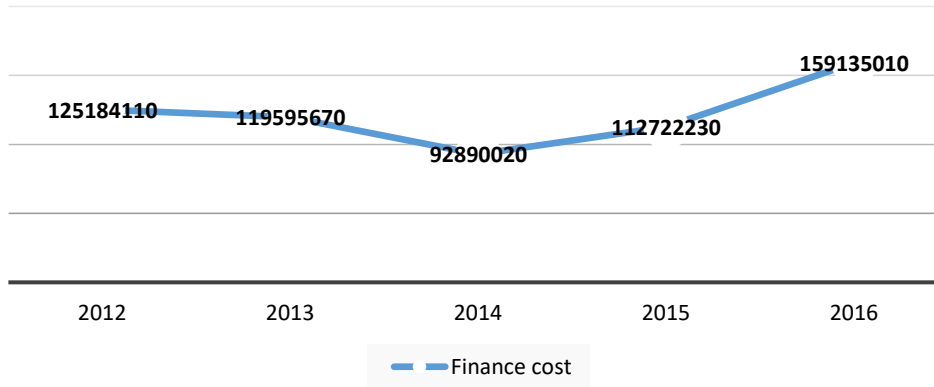
c. Correlation Analysis

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 dependent and independent variable. The results correlation analysis is known as 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 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 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

		199	199	199
	Pearson Correlation	.257**	-.148*	1
Total debt ratio	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 the 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 compare 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.

d. Regression analysis

In statistical modeling, regression analysis is a statistical process for estimating the relationship among variables. It includes many techniques for modeling and analyzing several variables, when the focus is on the relationship 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 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 is also used to understand which among the independent variables are related 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.

In statistics multicollinearity is a phenomenon in which one predictor variable in a multiple regression modal can be linearly predicted from the others with a substantial degree of accuracy.
It is caused by an inaccurate use of dummy variables. It is caused by the inclusion of a variable which is computed from other variables in the data set. Multicollinearity 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 multicollinearity, 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 + 0.00000027 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 decision. The equation TDR= .356 + 0.00000027 finance cost – 0.395 Profitability shows, thus for every unit in profitability negatively impact on total debt ratio (0.395), provided the other variable remain unchanged.

While every units in financial cost positively impact on total debt ratio (0.00000027) 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 multicollinearity is not serious.
the summary of the research study, it appears that profitability is negatively related to total debt ratio indicating a strong compliance to the pecking order theory. Financial cost shows a positive relationship with total debt ratio that compliance to the static trade off theory. A summary table 9 shows, that outcome of study.

Table 9 summary

Determinants	Expected Results	Actual Results

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Profitability	negative	Negative
Financial cost	positive	Positive

7. 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 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 with 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 considered small and medium sized companies and privately-owned companies for their studies individually or collective or different measure of impact on capital structure, profitability and financial cost can be used. Moreover, 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 capital structure of a corporate like debt to equity, 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 decision in a corporation as it is being one of the foremost decisions a manager confronted with.

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