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The impact of Capital Structure on Financial Performance of the listed manufacturing firms in Sri Lanka

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Abstract

Capital structure is the most significant discipline of company's operations. Capital structure decision is a decision is a vital decision with great implication for the firm's sustainability. The ability of the organization to carry out their stakeholders need is closely related to the capital structure. The determination of a company's capital structure is a difficult task to achieve. Therefore, this paper empirically investigated the relationship between capital structure and the financial performance of listed manufacturing firms in Sri Lanka from 2008 to 2012. Financial performance was measured in terms of accounting profitability by Return on Equity (ROE) and Return on Assets (ROA). 30 listed manufacturing firms were selected as sample. The data were analyzed and hypotheses were tested through correlation and regression analysis by using SPSS. The findings revealed that, there was a significant negative relationship between leverage and return on equity. And there was no significance relationship between leverage and return on assets. The future research work based on this study is also suggested as identifying the optimum capital structure that leads to higher performance in Sri Lanka.

Keywords: Capital Structure, Financial Performance

1. Introduction

This study focuses on the impact of capital structure on financial performance. The capital structure is playing a most important role in the firm's financial decision making process along with other resources. The term capital structure is used to represent the proportionate relationship between debt and equity. Equity includes paid-up share capital, share premium and reserve and surplus (retained earnings) (Pandey, 2010). Company financing decisions involve a wide range of policy issues. Such decisions affect capital structure, corporate governance and company development (Green, et al., 2002). Knowledge about capital structures has mostly been derived from data from developed economies that have many institutional similarities (Booth et al., 2001). In Sri Lanka, there were very few studies undertaken in this specific area with the recent changes. Therefore, this study is carried out to evaluate that the extent to which capital structure of listed manufacturing companies has an impact on their financial performance.

The main problem of this research is to study how the capital structure negatively or positively influences on financial performance of the listed manufacturing firms in Sri Lanka. The research question is what the research intends to answer, and how it will expand the academic body of knowledge. For this study the research question is to explore the relationship between capital structure and firm's financial performance. In this respect, the research question is formulated as below:

- To what extent is capital structure impact on financial performance?
- Is there any relationship between capital structure and financial performance?

2. Literature Review

2.1 Capital Structure

2.1.1 Miller and Modigliani theory

Modigliani and Miller (M&M) (1958) wrote a paper on the irrelevance of capital structure that inspired researchers to debate on this subject. This debate is still continuing. However, with the passage of time, new dimensions have been added to the question of relevance or irrelevance of capital structure. M&M declared that in a world of frictionless capital markets, there would be no optimal financial structure (Schwartz & Aronson, 1979). This theory later became known as the "Theory of Irrelevance". M&M theory says that, in a perfect world - without taxes of bankruptcy costs - the debt-equity ratio is irrelevant for the value of the firm (theorem A). When the imperfection of corporate taxes is introduced, 100% debt financing is optimal, i.e. maximizes the value of the firm (theorem B). Finally, when also bankruptcy costs are taken into consideration, there is a cost to debt financing and an interior solution for the optimal capital structure emerges; a debt/equity ratio somewhere between 0% and 100% maximizes the value of the firm (theorem C). Theoretically, it would also be possible to consider a world with only the imperfection of bankruptcy cost (and no corporate taxes), in which case 100% equity financing would be optimal (theorem D).

2.1.2 Agency theory

Agency theory concerns itself with problems that arise when the desires of the principal and the agent conflict with each other and when it is difficult to expensive for the principal to verify what the agent is actually doing (Eisenhardt,1989). This feature allows corporate managers to pursue their own interest at the expense of shareholders. Managers who desire shareholders interest may be outset by powerful shareholders or by a hostile takeover. This

presupposes that shareholders have an interest to indulge in monitoring managerial behavior. However, shareholders differ with respect to incentives to spend resources on monitoring. Shareholders own a miniscule proportion of shares of a firm have very little incentive to devote the necessary time and effort on voicing their view on account of free riding from other shareholders.

2.1.3 Resource-based theory

According to the resource based theory, a firm's competitive advantage is based on the possession of tangible and intangible resources, which are difficult or costly for other firms to obtain. In order to sustain the firm's competitive advantage these resources must be valuable, rare, inimitable, and not substitutable (Barney, 1991). A major contribution of resource based theory is that it explains long lived differences in firm profitability that cannot be attributed to differences in industry conditions (Peteraf, 1993). It can be argued that considerable resource heterogeneity exists among various shareholder categories. For emerging economy firms, these differences arise from shareholders being either foreign or domestic and financial or strategic. The impact on firm performance of these owners with diverse resource endowments is expected to differ as a consequence of this heterogeneity in resource and organizational capabilities.

2.1.4 Trade-off theory

The trade-off theory suggests that there is an optimum capital structure in which the benefits of debt are offset by the cost of debt. This optimal capital structure is achieved when the marginal benefit of an additional unit of debt is exactly offset the marginal cost of an additional unit of debt (Fama & French, 2005). Unlike the static trade-off theory, which implicitly assumes that firms always stay at target leverage by continuously adjusting leverage to the target, the dynamic version recognizes that financing friction make it sub optimal for firms to continuously adjust their leverage to the target, under the dynamic trade-off theory, firms weigh the benefit of adjusting their capital structures against the adjustment cost and make leverage adjustments only when the benefit outweighs the cost (Ovtchinnikov, 2010).

2.1.5 Pecking order theory

According to the pecking order theory firm have no well -defined target debt/equity ratio and each firm's observed debt ratio simply reflect the firm's cumulative requirement for external finance over an extended period (Myers, 1984). According to the pecking order model the firms will first use internal funds (retained earnings) before issuing debt and will finally only issue equity under duress or when the investment requirement so far exceed debt capacity that it would lead to excessive leverage (Fama & French, 2005).

2.1.6 Multi-theoretic perspective

In view of the aforementioned inadequacies of a unitary perspective, we adopt a multi-theoretic view in this paper by taking resource to elements of agency, resource-based, and institutional theories to formulate a more holistic perspective in examining the impact of capital structure on firm financial performance.

2.2 Financial Performance

Strength of financial position of an organization is called financial performance. Financial analysis is the process of identifying the financial strengths and weaknesses of the firm by properly establishing relationship between the items of the balance sheet and the profit and loss account. In financial analysis a ratio is used as a benchmark for evaluating the financial position and performance of a firm. Ratio is defined as "The indicated quotient of two mathematical expression" and as "The relationship between two or more things". Ratios help to summarize large quantities of financial data and to make qualitative judgment about the firm's financial performance.

3. Research Methodology

3.1 Data collection

According to Jankowicz (2000), a research method is a systematic and orderly approach to the collection and analysis of data. What is collected is data, which is raw, specific, undigested and therefore largely meaningless. This study utilized a data collection, which means that the data have been collected over the sample period of 2008 to 2012. In this study, the data will be collected by using the secondary sources, such as, CSE hand book, CD record of Colombo stock exchange, Colombo stock exchange annual report, CSE monthly report and etc.

3.2 Sample selection

According to Jankowicz (2000) sampling can be defined as the deliberate choice of a number of people, the sample, who are to provide with data from which the researcher will draw conclusion about some larger group, and the population, whom these people represent.

As this study has focused on the Manufacturing Sector, there are 36 firms (which are listed on the Colombo Stock Exchange) in the manufacturing sector as population. From those 36 firms, 30 firms are being selected. So we have 150 (30 firms * 5 years) firm-years for panel data analysis.

3.3 Research Hypotheses

Based on assumed causal relationship given in the conceptual model, the following hypotheses are developed for testing.

H_0 :- There is no significance relationship between Leverage and Return on Equity.

H_1 :- There is a significance relationship between Leverage and Return on Equity.

H_0 :- There is no significance relationship between Leverage and Return on Asset.

H_2 :- There is a significance relationship between Leverage and Return on Asset.
H_0 :- There is no significance impact of Leverage on Return on Equity.
H_3 :- There is a significance impact of Leverage on Return on Equity.
H_0 :- There is no significance impact of Leverage on Return on Assets.
H_4 :- There is a significance impact of Leverage on Return on Assets.

4. Results and discussions

4.1 Method of Analysis

In this study, different methods of statistical processing have been applied. SPSS (version13.0) software programme exclusively applicable to statistical processing is used for processing the data. Here, Correlation, Regression, and descriptive statistics are used to analyze the data.

4.1.1 Descriptive statistical analysis

Table 1 - Descriptive Statistic of Dependent and independent variables

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Leverage	30	2.2610	.0023	2.2633	.273453	.4199414
Return on Equity	30	1.0671	-.4732	.5939	.074536	.1691319
Return on Assets	30	.46	-.07	.39	.0555	.08546
Valid N (listwise)	30					

The descriptive statistics show that over the period under study, the financial performance ratios measured by return on equity and return on assets averaged 7.45% and 5.55% respectively. The leverage ratio stood at 27.34%. This is an indication that approximately 27% of total capital in the listed manufacturing firms of Sri Lanka is represented by debt. This confirms that the minimum level of debt capital kept by the manufacturing firms due to their purposes.

Here, the maximum values for leverage ratio, ROE and ROA are 226.33%, 59.39% and 39% respectively. On the other side, the minimum values for leverage ratio, ROE and ROA are 0.23%, -47.32% and -7% respectively. This concludes that the range of these variables is 226.10%, 106.71% and 46% respectively. According to that table, standard deviation of the leverage ratio is higher than the other variables.

4.1.2 Correlation Analysis

Correlation is concern describing the strength of relationship between two variables. In this study the correlation co-efficient analysis is under taken to find out the relationship between capital structure and financial performance. It can be said that what relationship exist among variables. Here, dependent variable financial performance is correlated with independent variable capital structure. Correlation analysis is performed to find out the relationship between variables; ROE and ROA.

Table 2 - Correlation matrix for capital structure and financial performance

		Leverage	**ROE**	**ROA**
Leverage	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	30		
ROE	Pearson Correlation	-.592**	1	
	Sig. (2-tailed)	.001		
	N	30	30	
ROA	Pearson Correlation	-.309	.378	1
	Sig. (2-tailed)	.097	.080	
	N	30	30	30

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

The above table illustrates the relationship among leverage ratio, Return on assets and Return on equity. The correlation value between leverage and Return on equity is r = (-0.592), and the significant level is 0.001. This shows that there is a significant moderate negative relationship between leverage and Return on equity. On the other side, the correlation value between leverage and Return on assets is -0.309, but the value is not in the level of significance (-0.97).

4.1.3 Regression Analysis

Regression analysis is carried out to test the impact of capital structure on financial performance. Here capital structure is the independent variable and financial performance is the dependent variable. From these independent and dependent variables, the following relationships are formulated. Financial performance of the manufacturing firms is dependent upon the capital structure. It is represented as follows;

FP = f (CS)

Which shows performance is the function of capital structure.

Where;

FP = Financial performance

CS = Capital Structure

Here, financial performance is measured with the help of two ratios return on equity and return on assets. Capital structure is measured through leverage ratio. Therefore, the regression model will be formulated in the following manner;

$ROA = \hat{a}_0 + \hat{a}_1 x_1$..... (1)

$ROE = \hat{a}_0 + \hat{a}_1 x_1$..... (2)

Where;

X_1 = Leverage ratio

$\hat{a}_0$ = Constant

ROA = Return on Assets

ROE = Return on Equity

Table 3 - Regression model for capital structure and Return on Equity

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.592[a]	.351	.327	.138708701

a. Predictors: (Constant), leverage

b. Dependent Variable: ROE

Here, R^2 value is computed to identify the impact of leverage ratio on return on equity. The R^2 value is 0.351. This means leverage ratio is contributed to determine return on equity by 35.1%. The remaining 64.9% is influenced by other factors which are not considered for this study.

Table 4 - Coefficient

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.140	.030		4.601	.000
leverage	-.238	.061	-.592	-3.888	.001

a. Dependent Variable: ROE

From the above table the regression equation could be derived in the following manner.

Y = 0.140 + (-0.238X)

The b value is -0.238. This reveals that leverage ratio and return on equity tends to move in opposite direction.

Table 5 - Regression model for capital structure and Return on Assets

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.309[a]	.096	.063	.082711168

a. Predictors: (Constant), leverage

b. Dependent Variable: ROA

Here, R^2 value is computed to identify the impact of leverage ratio on return on assets. The R^2 value is 0.096. This means leverage ratio is contributed to determine return on assets by 9.6%. The remaining 90.4% is influenced by other factors which are not considered for this study.

Table 6 - Coefficient

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.073	.018		4.011	.000
leverage	-.063	.037	-.309	-1.719	.097

a. Dependent Variable: ROA

From the above table the regression equation could be derived in the following manner.
Y = 0.073 + (-0.063X)

5. Conclusions

On the basis of findings, the mean value of leverage ratio is 27.34%. It obviously means the average of debt capital kept by these firms in these 5 years period. This is an indication that approximately 27% of total capital in the listed manufacturing firms of Sri Lanka is represented by debt remaining 73% is fulfilled by other sources. Most of these firms highly depend on debt capital than equity capital.

In the study, the correlation analysis revealed that the leverage is negatively correlated with both ROE and ROA. There is a moderate negative relationship between leverage and ROE, which is significant at 0.001 level. Here, leverage has significant relationship with ROE. On the other side, there is no significance between leverage and ROA. Here the significant level is 0.097.

According to the regression analysis, R^2 value was computed to identify the impact of leverage ratio on return on equity and return on assets. The R^2 value between leverage and ROE is 0.351. This means leverage ratio is contributed to determine return on equity by 35.1%. The remaining 64.9% is influenced by other factors. The R^2 value between leverage and ROA is 0.096. This means leverage ratio is contributed to determine return on assets by 9.6%. The remaining 90.4% is influenced by other factors. Regression analysis is carried out to identify the impact of independent variable on dependent variable. In this study, leverage has significant impact on ROE and there is no significant impact on ROA.

5.1 Testing of Hypotheses

Hypotheses, which were formulated for this study, are tested as follows,

- **H_0 :-** There is no significance relationship between Leverage and Return on Equity.
- **H_1 :-** There is a significance relationship between Leverage and Return on Equity.

From the study, correlation analysis showed that the correlation between leverage and ROE is (-0.592) with 0.001 significant level. Therefore, there is a significance relationship between leverage and ROE. Here, **H_0** is rejected and **H_1** is accepted.

- **H_0 :-** There is no significance relationship between Leverage and Return on Asset.
- **H_2 :-** There is a significance relationship between Leverage and Return on Asset.

According to the correlation analysis, it showed that the correlation between leverage and ROA is (-0.309) with 0.097 significant level. Therefore, there is no significance relationship between leverage and ROA. Here, **H_0** is accepted and **H_2** is rejected.

- **H_0 :-** There is no significance impact of Leverage on Return on Equity.
- **H_3 :-** There is a significance impact of Leverage on Return on Equity.

From the study, regression analysis showed that the r^2 value between leverage and ROE is 0.351 with 0.001 significant level. Therefore, leverage has significance impact on ROE. Here, **H_0** is rejected and **H_3** is accepted.

- **H_0 :-** There is no significance impact of Leverage on Return on Assets.
- **H_4 :-** There is a significance impact of Leverage on Return on Assets.

According to the regression analysis, it showed that the r^2 value between leverage and ROA is 0.096 with 0.097 significant level. Therefore, leverage has no significance impact on ROA. Here, **H_0** is accepted and **H_4** is rejected.

5.2 Recommendations

The following suggestions are recommended to increase the firm's financial performance based on capital structure.

- Performance standards should be established and communicated to the investors. This will help investors to achieve the standard and take better investment decisions. Identifying weaknesses of investment may be best one to improve the firm's financial performance, because it indicates the area, in which problems occurred.
- Firms should motivate investors through various specific programs (conferences) to help to achieve the high level of firm's financial performance.
- Equity capital should be increased. Because it help to increase the financial performance measures. Due to this, financial performance is stimulated.
- Political changes are very important factor in the share market. It is also determine the firm performance. Therefore, political should possible to increase the financial performance of the listed companies.
- Inflation and exchange rate also affect the listed company's performance. So, government should consider the economic growth to control the inflation.
- Ethnic problem and international financial crisis also one of the important reason for the inefficiency of the share market. Therefore, government should take necessary actions to improve the efficiency of the Colombo stock exchange.
- Owners haven't enough capital to achieve firm's financial performance. Therefore banks and government should promote facilities to increase performance.
- Firms should keep control over their debt capital. Because huge level of debt capital leads to the worst performance. By controlling the limit of debt capital, firms can achieve the desired level of performance.

5.3 Suggestions for further research

During the course of this study several ideas and potential research areas have identified. The current research has compiled a large database of listed manufacturing firms' accounting data that demonstrate what can be done even with the limitations of currently available data. There is clearly enormous scope for more research that can inform an understanding of how the capital is structured, how it connects with the financial performance and what elements of capital structure make a difference. The purpose of this section is to serve as a source of inspiration for further researchers who want to write research papers within this area of work. To develop specific policy recommendations the following suggestions are given for further researches.

- There are currently 288 companies listed in the CSE under 20 sectors. The study covered only the listed manufacturing firms from manufacturing sector. Therefore, additional investigation is required to examine firms in the different sectors tend to follow different capital structure patterns.
- Another research area that could be extended is to examine capital structure and financial performance to the non-listed manufacturing firms.
- This study has utilized only standard forms of financial performance measures. More precise measures of financial performance can be obtained with the help of Economic Value Added (EVA) concept.
- A supplementary analysis ought to be conducted to test whether the differences in firm characteristics has an impact on the way firms in Sri Lanka choose to finance their investments.
- When it comes to the measures for capital structure this study has only applied quantitative data for possessed capital by different owners. 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.

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