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Full Length Research Paper

Capital structure and firm value: An empirical study of listed manufacturing firms in Sri Lanka

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Abstract

The purpose of this study is to empirically investigate the relationship between capital structure and firm value. Using three of accounting – based measures of firm value i.e. Earnings Per Share (EPS), Price Earnings Ratio (PER), Market Value Per Share (MPS) and based on the sample of fourteen manufacturing companies listed in Colombo stock exchange, covering the period from 2008 to 2012. The results revealed that firm value, which measure by Debt Equity is significantly associated with firm value. Further, study also provides evidence that indicates firm value is positively or even negatively related to capital structure.

Keywords: Capital Structure, Firm Value, Colombo Stock Exchange (CSE)

INTRODUCTION

Capital structure is one of the crucial factors in determining the firm value. Sound financing decisions of a firm basically should lead to an optimum capital structure. The study discovers the issues faced by financial managers as they determine how to finance capital projects, which will hopefully enhance the value of their firms. The role of the financial management has become important than merely a fund raiser. The finance manager is expected to maximize economic welfare of the owners, which is represented by the market value of the firm.

How much debt and how much equity financing are appropriate and how will the mix affect a business? Why not use external finance for all capital requirements? These are common questions to consider when assessing a financial plan. When a lender considers lending money, they will analyze company's operation, financial situation, profitability, projected cash flows, and the health of company's balance sheet. Things such as the debt to equity ratio and the debt repayment capacity affect the decision of a lender makes when assessing a loan request. A prudent manager should also monitor the financial position of the business regularly and attempt to maintain an appropriate mix of debt and equity. The greater the debt in relation to the equity (the debt/equity ratio) is the greater the financial risk. The managers should always try hard to keep the debt/equity ratio within the recommended range to maximize their firm's value. This study examines the capital structure and value of the Listed Manufacturing firms in Sri Lanka over the period of 5 years from 2008 to 2012.

A firm's capital structure refers to the mix of its financial liabilities. It has long been an important issue from the strategic management standpoint since it is linked with a firm's ability to meet the demands of various stakeholders (Roy and Minfang, 2000). Debt and equity are the two major classes of liabilities, with debt holders and equity holders representing the two types of investors in the firm. Each of these is associated with different levels of risk, benefits, and control. While debt holders exert lower control, they earn a fixed rate of return and are protected by contractual obligations with respect to their investment. Equity holders are the residual claimants, bearing most of the risk and have greater control over decisions. 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 various organizational constituencies, but also because of the impact such a decision have on an organizations' ability to deal with its competitive environment. Following the work of Modigliani and Miller (1958 and 1963), much research has been carried out in corporate finance to determine the influence of a firms choice of capital structure on performance. The difficulty facing companies when structuring their finance is to determine its impact on performance, as the performance of the business is crucial to the value of the firm and consequently, its survival. In this way the present study has been initiated to find out the association between capital structure and firm value.

Objectives

Main objective of the study is to find out the association between capital structure and firm value of the listed manufacturing companies over the period of 5 years from 2008 to 2012. In addition to this the sub objectives of this study consist of,

- To identify the factors influencing on the value of the firm.
- To find out the impact of capital structure on firm value.
- To suggest the listed manufacturing companies in a way to increase firm value through adapting a better strategic framework of capital structure.

Literature review

The relationship between capital structure and firm value has been the subject of considerable debate, both theoretically and in empirical research. Throughout the literature, debates have focused on whether there is an optimum capital structure for an individual Firm or whether the proportion or level of debt usage is irrelevant or relevant to the Firm's value (Hatfield, Cheng and Davidson, 1994). Pandey (2004) opines that, the capital structure decision of a firm should be examined from the point of its impact on the value of the firm. Further he states that if capital structure decision can affect a firm's value, then firms would like to have a capital structure which maximizes their value. The aim of a firm should centre therefore on the maximization of its value through capital structure decisions.

Aggarwal and Kyaw (2006) also posit that, debt can have both positive and negative effects on the value of the firm so that the optimal debt structure is determined by balancing the agency costs and other costs of debts as a means of alleviating the under and over-investment problems. Specifically, when firms have surplus cash flows, debt will force managers to pay out funds that might otherwise have been invested in negative net present value projects. However, firms with outstanding debt may have incentives to reject projects that have positive net present value if the benefit from accepting the project accrues to the bondholders without also increasing shareholders' wealth. Therefore, the common message behind the arguments by Jensen (1986), Myers (1993) and Stulz (1988) is that debt can have positive or negative effect on the value of the firm depending on the firm's future investment opportunities.

The traditionalist theories believe that capital structure is relevant in determining a firm's value. But the irrelevance theory of Modigliani and Miller (1958), posit that there is no relationship between capital structure and firm's value. However, their position changed when they considered the effect of tax shield and other imperfection in the capital market. They revise their earlier statement and opine that capital structure is very much related to firm's value.

In addition, the pecking order theory of Myers and Majluf (1984), state that there is a correlation between capital structure and firm's value. This is because a firm's value can increase if the right form of capital is used. This theory advocates that firm's value can be affected positively if a capital structure hierarchy is followed. The trade-off theory also states that there is a relationship between capital structure and firm's value.

Stulz (1990) argues that debt can have both a positive and negative effect on the value of the firm (even in the absence of corporate taxes and bankruptcy cost). He develops a model in which debt financing can both alleviate the overinvestment problem and the underinvestment problem. Stulz (1990) assumes that managers have no equity ownership in the firm and receive utility by managing a larger firm. The 'power of manger' may motivate the self-interested managers to undertake negative present value project. To solve this problem, shareholders force firms to issue debt. But if firms are forced to pay out funds, they may have to forgo positive present value projects. Therefore, the optimal debt structure is determined by balancing the optimal agency cost of debt and the agency cost of managerial discretion.

In contrast to equity, debt is not an ownership interest in the firm. Creditors generally do not have voting power. The firm's payment of interest is a fully tax–deductible cost of doing business, unlike dividend payments which are not tax deductible. If it is not repaid, the creditor may legally seize the assets of the firm, which could result in equity liquidation or reorganisation. Thus, a major cost of issuing debt is the possibility of financial distress. (Jane Malonis and Cengage, 2000).

Yu-Shu Cheng, Yi-Pei Liu and Chu-Yang Chien(2010), they investigated whether there was an optimal leverage at which point firm is able to maximize its value. An advanced panel threshold regression model is applied to test the panel threshold effect of debt ratio on firm value among 650 A-shares of Chinese listed firms from 2001 to 2006. The results confirm that a triple threshold effect

does exist and show an inverted-U correlation between leverage and firm value.

Nimalathasan and Valeriu Brabete (2010) suggest that Debt Equity ratio is positively and strongly associated to all profitability ratios (Gross Profit Ratio; Operating Profit Ratio; Net Profit Ratio) except Return on Capital Employed and Return on Investment. Debt Assets Ratio is positively and strongly associated to Operating Profit Ratio, Net Profit Ratio and Return on Capital Employed. Similarly Capital Gearing ratio is also positively correlated to Gross Profit Ratio and Net Profit Ratio. Further, IC ratio is significantly correlates to Return on Capital Employed and Net Profit Ratio. Further capital structure has a great impact on all profitability ratios. Based on the above literature, we can say that several studies have been done on this area in various countries, but in Sri Lankan context the literature was found to be not as much as compared to the abroad. That's why an attempt has been made to find out the relationship between capital structure and firm value of the listed manufacturing companies in Sri Lanka.

Conceptualization

Based on the literatures, the following conceptual frame work is formulated.

Hypotheses development

Stulz (1990) argues that debt can have both a positive and negative effect on the value of the firm. Aggarwal and Kyaw (2006) also posit that, debt can have both positive and negative effects on the value of the firm. Based on Literatures following hypothesis is formulated.

H1: Capital Structure has an impact on Firm Value

Myers and Majluf (1984), state that there is a correlation between capital structure and firm's value. Modigliani and Miller (1958), posit that there is no relationship between capital structure and firm's value. Nimalathasan and Valeriu Brabete (2010) suggest that Debt Equity ratio is positively and strongly associated to all profitability ratios (Gross Profit Ratio; Operating Profit Ratio; Net Profit Ratio) except Return on Capital Employed and Return on Investment. Based on Literatures following hypothesis is formulated for the validity of the Literature.

H2: Capital Structure and Firm Value are significantly correlated.

METHODOLOGY

Scope

The scope of the study is listed manufacturing companies on Colombo Stock Exchange (CSE), Sri Lanka. Thirty nine companies are listed under manufacturing sectors. Hence, out of thirty nine, only fourteen companies are selected for the study. Convenience sampling technique is used to select the sample size. The companies include (1) Abans Electrical Ltd; (2) Acl Cables Ltd; (3) Bogala Graphite Lanka Plc;(4) Ceylon Grain Elevators Plc; (5) Chevron Lubricants Lanka Plc (6) Dipped Products Plc; (7) Kelani Cables Ltd; (8) Lanka Floortiles Plc; (9) Piramal Glass Ceylon Plc; (10) Regnis(Lanka) Plc; (11) Royal ceramic lanka Ltd; (12) Samson International Ltd; (13) Singer Industries (Ceylon) Plc; (14) Tokyo Cement Company (Lanka) Plc.

Data sources

In order to meet the objectives of the study, data was collected from secondary sources mainly from financial report of the selected companies, which were published by Colombo Stock Exchange in Sri Lanka.

Reliability and validity

Secondary data for the study were drawn from audited accounts (i.e., Comprehensive income statement and financial position) of the concerned companies as fairly accurate and reliable. Therefore, these data may be considered reliable for the study. Necessary checking and cross checking were done while scanning information and data from the secondary sources. All these efforts were made in order to generate validity data for the present study. Hence, researcher satisfied content validity.

Mode of analysis

The quantitative research approach is employed to find out the findings of the research study.

Descriptive statistics are used to describe and summarize the behavior of the variables used in the study. In order to test the research hypotheses; the inferential tests used include the Correlation Analysis and regression analysis.

Research model

Simple linear correlation model is formed to find out the relationship between Capital Structure and value of the Firm measures for the selected manufacturing firms. The correlation model will be formulated in the following manner;

$Y = \beta_0 + \beta X + \varepsilon$

Where Y is the dependent variable, α is an intercept and β is the co-efficient of the independent variable. By

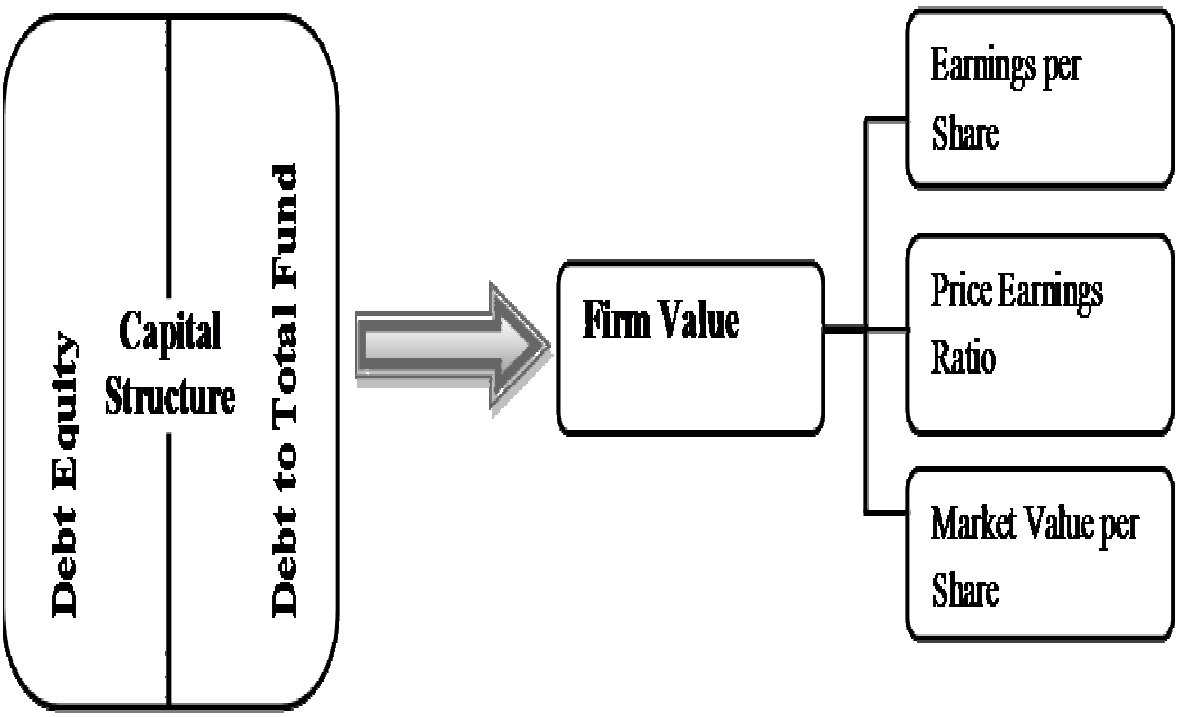

Figure 1. Conceptualization

substituting both dependent and independent variables in the above model, the following models can be formed;

$EPS = \beta_0 + \beta 1DE + \varepsilon$
$EPS = \beta_0 + \beta 1DTF + \varepsilon$ } Model- I

$PE = \beta_0 + \beta 1DE + \varepsilon$
$PE = \beta_0 + \beta 1DTF + \varepsilon$ } Model -II

$MPS = \beta_0 + \beta 1DE + \varepsilon$
$MPS = \beta_0 + \beta 1DTF + \varepsilon$ } Model -III

Where;
EPS = Earnings per Share
PE = Price Earning
MPS = Market price per Share
DE= Debt Equity Ratio
DTF = Debt to Total Funds
e = Error term

RESULTS AND ANALYSIS

Descriptive Statistics

Table 1 presents a summary of Descriptive Statistics of the dependent and independent variable used in this study. Through this statistical tool this study was able to find out the number of variable in sample, their mean, standard deviation, minimum value, maximum value and variance. Here, it was found that DE has a mean of 0.3321 and its maximum value is as high as 1.00. Its minimum value is 0.02. EPS has standard deviation of 5.1593. MPS has high mean value of 73.4157 than other variables. It has high maximum value of 153.05 and high variance of 1772.915.

Correlation analysis

Table 2 presents a correlations matrix of the relationship between dependent variable and Independent variable. The correlation between DE and MPS ratio is -75.8**%. That means negative relationship between them and statistically significant at 0.01 level. We can observe that DE is strongly associated with MPS except EPS and PE.

Regression analysis

The R^2 values of 0.121, 0.267 and 0.574 which are in the above mentioned table denotes that only 12.1%, 26.7% and 57.4 of the observed variability in EPS, PE and MPS is explained by the variability in the independent variable of DE. This reveals that, DE is determining factor of Firm Value of manufacturing firms in Sri Lanka (Table 3) R^2 value shows that DTF is having 2.3%, 9.3% and 27% of impact on EPS, PE and MPS. The remaining 97.7%, 90.7% and 73% is influenced by factors other than DTF which means other factors are probably found to be

Table 1. Descriptive Statistics of the Variables

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
DE	14	.02	1.00	.3321	.30190	.091
DTF	14	.02	.68	.2257	.19786	.039
EPS	14	-.55	13.72	7.4214	5.15931	26.619
PE	14	-.43	34.26	11.8507	7.84914	61.609
MPS	14	4.54	153.05	73.4157	42.10599	1772.915
Valid N (listwise)	14					

Correlations

		DE	DTF	EPS	PE	MPS
DE	Pearson Correlation	1	.			
	Sig. (2-tailed)			.		
	N	14				
DTF	Pearson Correlation	.805 **	1			
	Sig. (2-tailed)	.001				
	N	14	14			
EPS	Pearson Correlation	-.347	-.150	1		
	Sig. (2-tailed)	.224	.608			
	N	14	14	14		
PE	Pearson Correlation	.517	.305	-.180	1	
	Sig. (2-tailed)	.059	.290	.538		
	N	14	14	14	14	
MPS	Pearson Correlation	-.758 **	-.520	.525	-.114	1
	Sig. (2-tailed)	.002	.057	.054	.697	
	N	14	14	14	14	14

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

Table 3. Predictors of firm value - Model Summary I

Model	Dependent Variable	R	R^2	Adjusted R Square	Std. Error of the Estimate
1	EPS	0.347	0.121	0.047	5.03568
2	PE	0.517	0.267	0.206	6.99486
3	MPS	0.758	0.574	0.539	28.59827

Predictors: (Constant), DE

Table 4. Predictors of firm value - Model Summary II

Model	Dependent Variable	R	R^2	Adjusted R Square	Std.Error of the Estimate
1	EPS	0.150	0.023	-0.059	5.30910
2	PE	0.305	0.093	0.017	7.78118
3	MPS	0.520	0.270	0.209	37.44573

Predictors: (Constant), DTF

Table 5. Hypotheses testing

No	Hypotheses	Results	Tools
H1	There is a significant relationship between Capital Structure and Firm Value	Partially Accepted	Correlation
H2	There is an impact of capital Structure on Firm Value	Partially Accepted	Regression

better predictions of EPS, PE and MPS. Hence this area is indicates as a scope for future research.

CONCLUDING REMARKS

This study examined the relationship and impact of capital structure on firm value in listed manufacturing companies in Sri Lanka. The study covered 14 listed manufacturing companies over the period of 2008 to 2012 and the major findings of the study are summarized below:

Positive association was observed between DE and PE as well as DTF and PE both these association were to be insignificant at 0.01 level. Negative association was observed between all remaining variable used in this study. DE and MPS was -0.758 and it was found to be significant at 0.01 level.

The R^2 value for the impact DE on MPS was 0.574, it was found to be significant at 0.01 level. All other remaining independent variables were not found to be the better predicators of firm value.

RECOMMENDATIONS

The following suggestions are recommended to increase the Firm's value based on capital structure.

- Firms should use more of equity than debt in financing their business activities, in as much as the value of a business can be enhanced using debt capital; it gets to a point that it becomes detrimental to the value of the business. Firms can also employ the use of cheap finance sources instead of expensive fixed interest bearing debts. Identifying weaknesses of investment may be best one to improve the firm's value, because it indicates the area which decision should be taken.
- The government should create an enabling business friendly environment so that businesses can thrive and thus increase the firm's value.
- Inflation and exchange rate also affect the listed company's value. Therefore, government should consider the economic growth to control the inflation.

Direction for the future research

Findings reveal that, DE is significantly correlated with MPS. The R^2 values reveal that the variables of capital structure have a very little impact on the variable of firm value. This reveals that, other factors are probably found to be better predictors of firm value. Firm size, credit policy, financial leverage, sales growth, technological changes and seasonal changes in demand may exert a greater influence on the firm value measures, which are not taken into consideration in the present study. Hence, there is a need for further empirical studies that can help to identify the factors those determine the firm value of manufacturing firms in Sri Lanka.

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