

# Impact of Capital Structure on Performance: A Study on Listed Financial Institutions in Sri Lanka

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## Introduction

Financial management is largely concerned with financing, dividend, and investment decisions of the firm with some overall goal in mind. Corporate finance theory has developed around a goal of maximizing the market value of the firm to its shareholders. This is also known as shareholder wealth maximization. Although various objectives or goals are possible in the field of finance, the most widely accepted objective for the firm is to maximize the value of the firm to its owners. Financing decisions deal with the firm's optimal capital structure in terms of debt and equity. The structure-conduct-performance paradigm has played a very important role in studying the determinants of firms' performance (Bain, 1956).

The issue of capital structure attracted the attention of a large number of researchers, as most of companies or business firms of any kind need a debt or the use of third party funds, in addition to private capital. But the important issue is the size of private capital and debt which should be increased in order to achieve the objectives of the institution to maximize the market value or to maximize the wealth. Therefore, the most recent studies have confirmed the existence of a relationship between the value of the company's capital structure, which means that the changes in capital structure of the company affect the performance of the business and the value of the company, where as the access business to an optimal debt ratio would reduce the cost of capital and then raise the market value of companies, on the other hand, we find excessive use of debt leads to an increase in cost of capital.

From this point, the researchers found that it is important to study the impact of capital structure in terms of debt ratio in determining performance and the market value of the business. The use of borrowed capital increases the level of investment undertaken by the firm without causing any additional cost for firm's owners other than interest expenses. This increases the return of invested capital by the owners. However, borrowed capital increases the risk for the firms as well as for owners, because borrowed capital creates fixed expenses (i.e. interest); thus a minimum profit level is necessary for financing the level of interest. Most of the decision making process related to

the capital structure are deciding factors. When determining the capital structure, a number of issues e.g. cost, various taxes and rate, interest rate have been proposed to explain the variation in Financial Leverage across firms (Hampton, 1998).

## Background of the problem

There is an optimal level of debt at which a firm's cost of capital is minimised, or, the firm's value is maximized. The practical relevance of this view is that managers can identify and maintain the optimal level of debt at which their firm's average cost of capital is minimised or their firm value is maximised in order to operate both profitably and effectively (Samuels et al. 1997).

Few studies have used financial indices as independent variables (Hall and Weiss 1967, Hurdle 1974, Oustapassidis 1998), in order to explain differences in firms' profit margins. Most of the studies have concentrated on issues such as research and development policies, advertising, economies of scale, etc. to explain differences in price-cost margins (Clarke 1984, Frangouli 1999, Gisser 1991, Martin 1979). Financial factors may be considered as strategic conduct variables because they affect the cost of capital and thus the firm's performance. To measure dimensions of capital structure and uncertainty the relevant studies have used the debt-to-equity ratio, equity capital to total assets ratio, own capital to fixed assets ratio or fixed capital to total capital ratio. The relationship of financial factors and firms profitability is not always clear-cut. This relationship has been proved either positive or negative (Hall and Weiss 1967, Gale 1972, Hurdle 1974, Shepherd 1994, Oustapassidis 1998). Empirical evidence on this theory provided mixed results. Therefore, this study attempts to replicate the previous study to see whether the capital structure impact on performance of listed companies' especially in Sri Lanka.

Therefore, it becomes important to evaluate what is the influence of the capital structure over the companies performance. In this sense, the objective of the present study was to verify the relationship between capital structure and firm performance. Statement of the problem was RQ1: How far is capital structure impact on firm performance?



**Importance of the study:** Although the question of the funding structure took a great importance in developed countries, it is neglected in developing countries for two reasons. First, because there is no major economic role for companies in the developing countries and the second reason is that, the firms in many developing countries face several constraints in their choice of funding sources, such as lack of bond markets and the ineffectiveness of banks to finance investments, as the financial markets of the modern states (Tarek, 2007).

### **Literature review and conceptual framework**

Starting from the late 1940s, experts in finance recognised that intelligent manipulation of debt and equity could enhance corporate value, via producing an optimal (or near-optimal) mix of capital. Over the 1950s, 1960s, and 1970s, five concepts of finance theory were developed on this area, viz: (1) early gearing (leverage) models; (2) the model of Modigliani and Miller (MM); (3) Capital Asset Pricing Model (CAPM); (4) Arbitrage Price Theory (APT); and (5) Gordon model (Shubber and Alzafiri, 2008).

Capital structure refers to a mixture of a variety of long term sources of funds and equity shares including reserves and surpluses of an enterprise (Brealey and Myers, 1992; Gitman, 1997 and Weston and Brigham, 2000). Therefore, it is studied which is the volume of common share (stock) and preferred share (stock) and which is the financing amount the company possesses. This analysis is important because it shows several internal aspects of the company, mainly, which the participation of its equities and, consequently, which is the degree of financial leverage, besides the respective expiration periods. As each source has a specific cost, the return rate can be influenced in a significant way by that composition

Research on the theory of capital structure was pioneered by the seminal work of Modigliani and Miller (1958). Significant empirical and theoretical extensions followed and the broad consensus paradigm, at least until recently, has been that firms choose an appropriate (optimal) level of debt, based on a trade-off between benefits and costs of debt. The main benefit associated with debt was the tax advantage of interest deductibility. More recently, it has been argued that the monitoring engaged in by lenders was another significant benefit associated with debt, as this may reduce the agency costs of manager-stockholder conflicts (Jensen, 1986). The costs of debt include bankruptcy and agency costs. According to this view, the leverage decision is fundamentally an exercise in balancing the costs and benefits at different levels of debt.

Financial structure has a positive effect on the firm's performance (Hutchinson, 1995). Taub(1975), Nerlove

(1968), Baker(1973), and Petersen and Rajan (1994) also found a positive relationship between capital structure and performance of the firm. In addition, Roden and Lewellen (1995) found a positive relationship between profitability and total debt. Champion (1999) described that the use of leverage as one way to improve the performance of the firm. Hadlock and James (2002) argued that companies prefer debt financing because they anticipate higher returns. Fama and French (1998) argued that the use of excessive debt creates agency problems among shareholders and creditors, in turn, lead to negative relationship between leverage and profitability. Majumdar and Chhibber (1999), Gleason *et al.* (2000), and Hammes (1998) found a negative effect of leverage on corporate profitability. Abor (2006) examined the effect of capital structure on the corporate profitability of the listed firms in Ghana using a panel regression model. His measures of capital structure included short-term debt ratio, long-term debt ratio, and total debt ratio. Abor's(2006) findings showed a significantly positive relation between the short-term debt ratio and profitability.

As to the financing decision, the choice of the optimum capital structure will be settled, accordingly to Booth *et al* (2001), in conformity with three models: 1) the Static Trade-off Model affirms that the firm chooses a goal-structure based on tributary aliquots, types of investment, business' risk, profitability and bankruptcy code; 2) the Agency Theoretic Framework suggests that potential conflicts of interests among internal and external investors determine the optimal structure that compensates agency costs with other financial costs and, 3) the Pecking-Order Hypothesis - based on the market imperfections, specifically shares' costs and asymmetric information - affirms that the choice will be based on the possibility of generation of funds to the company, given the asymmetry of information (e.g.: if the company judges that its shares are sub-evaluated in the moment, it will opt for the use of debt. On the other hand, if the company feels that the shares are well valued, it will issue a new emission of shares).

Hadlock and James (2002), evaluated the possibility of the banking system to provide a certain financial peace for the companies, affirm that the choice among equity and debt will be fundamentally determined by the market evaluation of the shares, confirming the Pecking-Order Hypothesis. In the study, the authors analyzed the financing decisions of 500 non-financial companies, concluding that those that were sub-evaluated chose bank financings. That type of choice occurs because the market interprets the loan as a positive step, imagining that the company preferred that type of financing because it anticipates high returns.



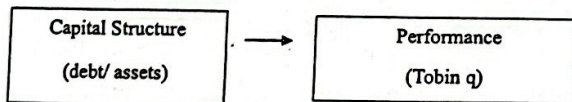
Graham (2000) estimated the magnitude of debt's benefit. He pointed out to a tax benefit of US\$ 0.2 for each unit of profit before taxes, or the equivalent to 10% of the firm's value, which are still below the potentially maximum benefit, according to his calculations. In the same work, another conclusion indicated that big and profitable companies present a low debt rate. According to Graham (2000), several factors, not related to tributary subjects, explain the choice of the financing. The financial cost of a possible bankruptcy will inhibit the grant of loans. The opportunities of investment exerted some influence, as the shareholders can give up projects with positive net present values (NPVs), which result in larger benefits for the parts engaged. The low liquidity and the irregularity of the cash flow affect the financing decision, as they tend to elevate the cost of the loan. The attitudes of the administration often prod the company to conservatively employ debts, either because the administrators would not like to assume risks, or because they could increase their shareholding participation.

Based on the above literature, we can say that several studies have been done on this area, but a comprehensive study has not yet been conducted, especially in Sri Lankan companies. Hence, this paper attempts to evaluate the capital structure and its impact on financial performance of the listed companies in Sri Lanka

### Conceptual frame work

Based on the literature survey and problem statements of the study, the following conceptualization had been developed to show the relationship between capital structure and financial performance of listed companies in Sri Lanka:

Figure 1: Conceptual framework



### Hypotheses

Based on the conceptual framework, the following operational hypotheses were formulated to carry out the study

- H<sub>1</sub>: There is significant positive relationship between capital structure and performance
- H<sub>2</sub>: Firm size effects on performance
- H<sub>3</sub>: Age of the firm effects on performance

## Methods

### Population and sample

Population of the study was listed banking, finance and insurance companies in Sri Lanka. By using the convenient random sampling method 20 companies were selected from banking and finance sectors in order to carry out the research.

### 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 that were published by Colombo Stock Exchange in Sri Lanka.

### Reliability and validity of the data

Secondary data for the study was drawn from audited accounts (i.e., income statement and balance sheet) of the concerned companies as fairly accurate and reliable. Therefore, these data might be considered reliable for the study. Necessary checking and cross checking were done while scanning information and data from the secondary sources. Sample of this study extracted from listed companies in Sri Lanka. Also, Sri Lankan Colombo Stock Exchange is functioning under the government rules and regulations and adopting the international and Sri Lankan Accounting Standards. All these efforts were made in order to generate validity data for the present study. Hence, researchers satisfied content validity.

### Mode of Analysis

Table 1: Calculations of capital structure and performance

Capital structure	
Debt/ Assets Ratio(D/A)	Total debt/ Total assets
Performance	
Tobin's q	(Market value of the equity capital+ Market value of the debt capital)/ Book value of the total assets
Control Variable	
Size(log of turnover/annual income)	Annual turnover/income in millions of rupees
Age (log of years)	Number of years since the date of incorporation of the company

Source: Pandey (1978 and 2005)

Linear regression analysis was performed to investigate the impact of capital structure on companies performance which the model used for the study is given below.

It was important to note that the performance depend upon debt/ assets (D/A), Since Tobin q the following model was formulated to measure the impact of capital structure on performance.

$$\text{Tobin } q = \beta_0 + \beta_1(D/A) + e \dots\dots\dots(1)$$

Where

e-error term



Based on the above regression model Tobin q were considered as the dependent variables where as D/A was the independent variable. The detail analysis was carried out with the help of above indicators.

**Findings of the study**

**Descriptive statistics**

**Table 2: Descriptive Statistics of the variables**

	N	Minimum	Maximum	Mean	Std. Deviation
Capital Structure	20	.0010	1.0226	.739325	.3067834
Tobin q	20	.0330	1.2402	.905205	.3213918

Source: survey data

The above table shows the values of minimum, maximum, mean and standard deviation of the independent variables. Minimum value of the debt to assets ratio was .0010 and maximum value was 1.0226 and mean value was .7393 which was indicated that value of total debt on total assets. It was indicated that around 73 % of total assets represented by debt capital. Mean value of the Tobin q indicated that 0.9052 is the market value of the equity and debt on total book value of the assets.

**Correlation Analysis**

Correlations were concern describing the strength of relationship between two variables. In this study, the correlation co-efficient analysis was under taken to find out the relationship between capital structure and performance. It showed the amount of relationship exist between capital structure and performance.

**Table 3: Correlation Matrix between capital structure and performance**

		Debt/ Assets	Tobin q	Size	Age
Capital Structure	Pearson Correlation Sig. (2-tailed)	1			
Tobin q	Pearson Correlation Sig. (2-tailed)	.696**	1		
Size	Pearson Correlation Sig. (2-tailed)	-.107	-.128	1	
Age	Pearson Correlation Sig. (2-tailed)	.014	.025	.122	1
		.952	.918	.609	

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

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

Source: Survey Data

Correlation matrix shows the following

1. There is a positive significant relationship ( $r = .696, P < 0.05$ ) between capital structure and performance
2. There is no significant effects of firm size on performance ( $r = -.128, P > 0.05$ )

3. There is no significant effects of age of company on performance ( $r = .014, P > 0.05$ )

**Regression Analysis**

Regression analysis was used to test the impact capital structure on performance of the listed companies in Colombo Stock Exchange.

**Capital structure and performance**

**Table 4: Regression analysis with performance as dependent variable and capital structure as predictor variable**

Model	Independent Variables	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.366	.141		2.589	.019
	Capital structure	.729	.177	.696	4.113	.001
$R^2 = 0.485$		$Adj. R^2 = .456$		$F = 16.920$		$P = 0.001$

Source: Survey data

Value of the coefficient of determination of capital structure which was; ( $R^2$ ) is 0.485, whilst this result implied that 48.5 % percent of the total variance in performance, could be explained by capital structure. As the model revealed the remaining 52.5% of the variability was not explained. An Analysis of Variance (ANOVA), indicated that;  $F = 16.920, p < 0.05$ , that the model was significant. It means that the regression results were acceptable for this analysis.

In order to test the hypotheses, considering the probability of t test of capital structure was less than 5%. Hypothesis ( $H_1$ ) stated that there is a significant positive relationship between capital structure and performance. Since t test of p-value was  $.001 < .05$ , which illustrated that there was a significant positive relationship between capital structure and performance, as a result  $H_1$  was accepted.

**Company size and performance**

In order to test the hypothesis ( $H_2$ ), it was stated that company size effects on firm performance. As per the correlation matrix result, there was no significant relationship between company size and performance. Therefore, it did not have any meaning to perform the regression analysis to test the hypothesis two. It means that the regression results were not acceptable in this model.

Therefore, there was no evidence of the significant effects of company size on firm performance.  $H_2$  was rejected that company size did not affect firm performance.

**Age of company and performance**

The hypothesis ( $H_3$ ) stated that age of company affects on firm performance. As per the correlation matrix result,



there was no significant relationship between ages of company on performance. Therefore, it did not have any meaning to perform the regression analysis to test Hypothesis three. It means that the regression results were not acceptable in this model.

Therefore, there was no evidence of the significant effects of age of company on firm performance. As a result,  $H_3$  was rejected that age of company did not affect firm performance.

## Conclusion

Capital structure is a very important element for the firms' performances. Firms may use their debt ratio to affect performance. In our study, it is concluded that, there is a positive relationship between the capital structure and performance in terms of Tobin q. There is no significant effects of company size and age of company on firm performance. We have demonstrated that for financial institutions in the Sri Lanka, there is a positive relationship between capital structure and the performance for the 2007-2010 periods.

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