The Relationship between Capital Structure & Profitability

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Abstract - Capital structure decision is the vital one since the profitability of an enterprise is directly affected by such decision. The successful selection and use of capital is one of the key elements of the firms' financial strategy. Hence, proper care and attention need to be given while determining capital structure decision. The purpose of this study is to investigate the relationship between capital structure and profitability of ten listed Srilankan banks over the past 8 year period from 2002 to 2009.The data has been analyzed by using descriptive statistics and correlation analysis to find out the association between the variables. Results of the analysis show that there is a negative association between capital structure and profitability except the association between debt to equity and return on equity. Further the results suggest that 89% of total assets in the banking sector of Sri Lanka are represented by debt, confirming the fact that banks are highly geared institutions. The outcomes of the study may guide banks, loan-creditors and policy planners to formulate better policy decisions as far as the capital structure is concerned.

THE RELATIONSHIPBETWEENCAPITALSTRUCTUREPROFITABILITY

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Abstract - Capital structure decision is the vital one since the profitability of an enterprise is directly affected by such decision. The successful selection and use of capital is one of the key elements of the firms' financial strategy. Hence, proper care and attention need to be given while determining capital structure decision. The purpose of this study is to investigate the relationship between capital structure and profitability of ten listed Srilankan banks over the past 8 year period from 2002 to 2009.The data has been analyzed by using descriptive statistics and correlation analysis to find out the association between the variables. Results of the analysis show that there is a negative association between capital structure and profitability except the association between debt to equity and return on equity. Further the results suggest that 89% of total assets in the banking sector of Sri Lanka are represented by debt, confirming the fact that banks are highly geared institutions. The outcomes of the study may guide banks, loan-creditors and policy planners to formulate better policy decisions as far as the capital structure is concerned.

Keywords : Capital structure, Profitability, Debt, Equity, Return on Equity.

I. Introduction

This study focuses on the association between capital structure & profitability of listed banks in the Banks, Finance & Insurance sector. Capital structure is one of the most puzzling issues in corporate finance literature (Brounen & Eichholtz, 2001). The concept is generally described as the combination of debt & equity that make the total capital of firms. The proportion of debt to equity is a strategic choice of corporate managers. Capital structure decision is the vital one since the profitability of an enterprise is directly affected by such decision. Hence, proper care and attention need to be given while determining capital structure decision. In the statement of affairs of an enterprise, the overall position of the enterprise regarding all kinds of assets, liabilities are shown. Capital is a vital part of that statement. The term "capital structure" of an enterprise is actually a combination of equity shares, preference shares and long-term debts. A cautious attention has to be paid as far as the optimum capital structure is concerned. With unplanned capital structure, companies may fail to economize the use of their funds. Consequently, it is being increasingly realized that a company should plan its capital structure to maximize the use of funds and to be able to adapt more easily to the changing conditions. (Pandey, 2009)

Basically, banks engage in financial intermediation to ensure efficient mobilization & disbursement of funds to the real sector of the economy. Though other financial institutions exist to engage in the intermediation process banks are considered the most important financial intermediaries. An ultimate goal of a firm is the maximization of wealth or value of that firm (Miller & Modigliani, 1958, 1963; Miller, 1977). The relationship between capital structure and profitability has been the subject of remarkable milestone over the past decade throughout the irrelevance theory. In the seminal article, presented by MM's (1958) irrelevance theory, they argued that capital structure is unrelated to firm's value. In the presence of corporate income tax and the cost of capital in MM's (1963) they argued that the market value of the firm is positively related to the amount of long term debt used in its capital structure.

The relationship between capital structure and profitability is one that received considerable attention in the finance literature. The study regarding the effects of capital structure on profitability will help us to know the potential problems in performance and capital structure. The modern industrial firm must conduct its business in a highly complex and competitive business environment. Therefore, these types of research findings will be benefited in selecting the capital structure to achieve the optimum level of firm's profitability. This study shows the statistical analysis carried out seeking to discover is there any relationship between capital structure and profitability of the listed banks in the Banks, Finance & Insurance sector.

II. Research Problem

According to Buser (1981), the capital structure decision of a bank is similar to that of a non financial firm. Although there are considerable inter industry differences in the capital structure of firms due to the unique nature of each industry's business and the intra-firm variations attributed to the business and financial risk of individual firms.

Most studies found a negative relationship between profitability and leverage. Within this framework, Titman & Wessels (1988) contend that firms

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with high profit levels, all things being equal, would maintain relatively lower debt levels since they can realize such funds from internal sources. Furthermore, Kester (1986) found a significantly negative relation between profitability and debt/asset ratios. Rajan & Zingalas (1995) also confirmed a significantly negative correlation between profitability and leverage in their work. Despite the above empirical works, some authors are of a different opinion. These authors observed a positive relationship between profitability and debt levels in their studies. For example, Taub (1975) in a regression analysis of four profitability metrics against debt ratio found significantly positive association between debt and profitability. Abor (2005) also found a significantly positive relationship between total debt and profitability. From the foregoing discussions based on the available empirical literature, it is crystal clear that results from investigations into the relationship between capital structure and profitability are inconclusive and requires more empirical work.

An important question facing companies in need of new finance is whether to raise debt or equity. In spite of the continuing theoretical debate on capital structure, there is relatively little empirical evidence on how companies actually select between financing instruments at a given point of time in order to attain optimum profitability. Hence, the main problem of this research is to study how the capital structure influences on signaling the bank's profitability in Sri Lanka?

III.   Objectives

The objectives are geared towards the following:

- To find out the relationship between capital structure and profitability.
- To find an optimal capital structure that would be associated with the best   performance.
- To suggest the banks in a way to increase profitability through adapting a better strategic framework of capital structure.

IV.   Review Of Literature

Capital structure is referred to as the way in which the firm finances itself through debts, equity and securities. It is the composition of debt and equity that is required for a firm to finance its assets. The capital structure of a firm is very important since it is related to the ability of the firm to meet the needs of its stakeholders. The Board of Directors or the financial manager of a company should always endeavor to develop a capital structure that would lie beneficial to the equity shareholders in particular and to the other groups such as employees, customers, creditors and society in general (Pandey, 2009).

Brander & Lewis (1986) andMaksimovic (1988) provided the theoretical framework that links capital structure and market structure. Contrary to the profit maximization objective postulated in industrial organization literature, these theories, like the corporate finance theory, assume that the firm's objective is to maximize the wealth of shareholders and show that market structure affects capital structure by influencing the competitive behavior and strategies of firms. According to Brander & Lewis (1986) firms in the oligopolistic market will follow the strategy of maximizing their output for improving profitability in favorable economic conditions. In unfavorable economic conditions, they would take a cut in production and reduce their profitability. Shareholders enjoy increased wealth in good periods, but they tend to ignore decline in profitability in bad times as unfavorable consequences are passed on to lenders because of shareholders' limited liability status. Thus the oligopoly firms, in contrast to the firms in the competitive markets, would employ higher levels of debt to produce more when opportunities to earn high profits arise. The implied prediction of the output maximization hypothesis is that capital structure and market structure have positive relationship.

Lalith, P.S (1999) investigated the capital structure of Srilankan companies and found that the use of long-term debt is relatively low in Srilankan companies. The mean leverage in Sri Lanka is estimated as 13.5%, long term debt to equity ratio is 24% while the total debt to equity ratio is 104.1%. This evidence suggested that the use of debt financing in Sri Lanka is significantly low in comparison to G7 markets.

According to the Business Dictionary profitability is the ability of a firm to generate net income on a consistent basis. Ratio is used as a benchmark for evaluating the performance of a firm. Ratios help to summarize large quantities of financial data and to make qualitative judgement about the firm's profitability. One of the most important financial decisions facing companies is the choice between debt and equity capital (Glen & Pinto, 1994). This decision can effectively and efficiently be taken when managers are first of all aware of how capital structure influences firm profitability. This is because; this awareness would enable managers to know how profitable firms make their financing decisions in particular contexts to remain competitive. In the corporate finance literature, it is believed that this decision differs from one economy to another depending on country level characteristics.

Chiang Yat Hung, Chan Ping Chuen Albert & Hui Chi Man Eddie (2002) shows the inter-relationship between profitability, cost of capital and capital structure among property developers and contractors in Hong Kong. The data for this research paper was collected from Datastream, an electronic financial database. The analysis of this paper shows that gearing is generally higher among contractors than developers and capital gearing is positively related with asset but negatively with profit margins.

Peterson & Rajan (1994) found a significantly positive association between profitability and debt ratios in a study designed to investigate the relationship. Ooi (1999) argues that profitable firms are more attractive to financial institutions as lending prospects. The reason is that, those firms are expected to have higher tax shields and low bankruptcy costs. Furthermore, Abor (2005) has reported a significantly positive relationship between the ratios of short term debt to total assets & profitability but a negative association between the ratio of long term debt to total assets and profitability. Dimitris, M. & Maria, P. (2008) investigated the relationship between capital structure, ownership structure and firm performance across different industries using a sample of French manufacturing firms. They found that a negative relationship between past profitability and leverage and there will be a positive relation between profitability and leverage.

V. Conceptualization

Based on the research question, the following conceptual model has been constructed. This model of capital structure in banking sector introduces new constructs and uniquely combines them in specifying that the profitability is a function of debt to equity and debt to total funds in the capital structure.
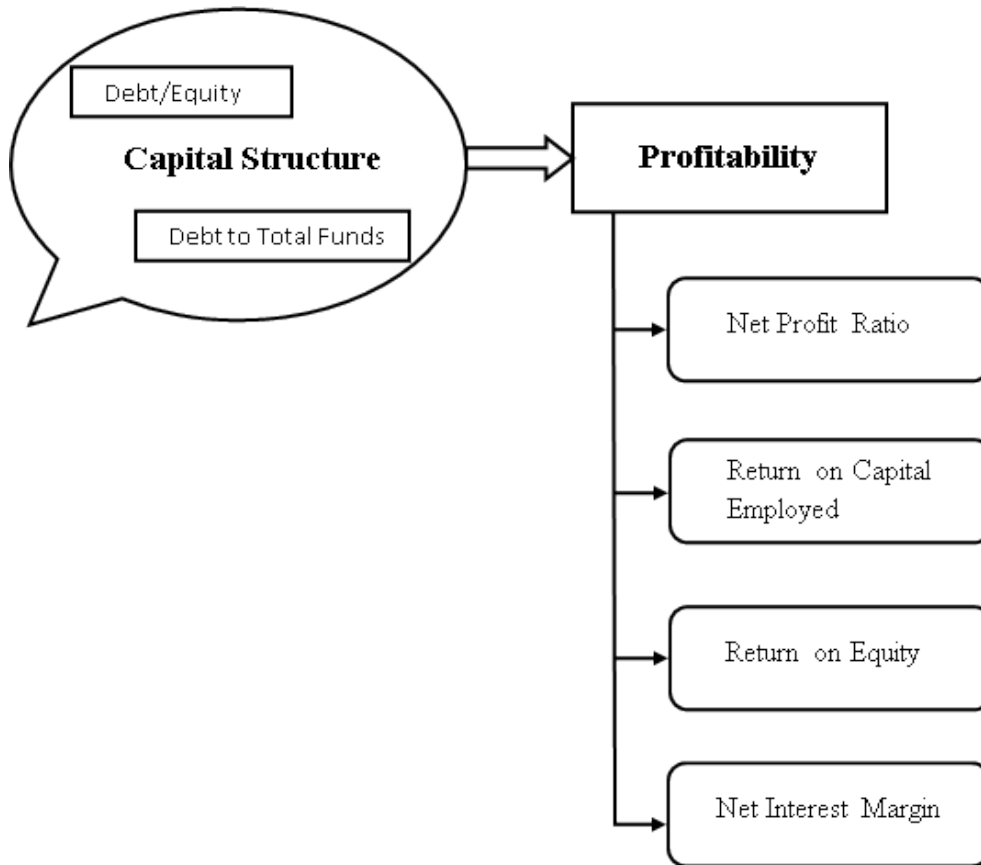

Figure 1 : Conceptualization Model

VI. Hypotheses Of The Study

The following hypotheses were formulated for the study.
H1- There is a significant negative relationship between Debt to equity and Net profit.
H2- There is a significant negative relationship between Debt to equity and Return on Capital Employed.
H3- There is a significant negative association between Debt to equity and Return on Equity.
H4- There is a significant negative association between Debt to equity and Net Interest Margin.
H5- There is a significant negative relationship between Debt to total funds and Net profit.
H6- There is a significant negative relationship between Debt to total funds and Return on Capital Employed.
H7-There is significant negative association between Debt to total funds and Return on Equity.
H8-There is a significant negative association between Debt to total funds and Net Interest Margin.

VII. METHODOLOGY

a) Data Collection

The present study used secondary data for the analysis. Secondary data is data that have been previously collected for some other project rather than the one at hand but found useful by the researcher. The financial statements which are made up of income statements and balance sheets of the sample banks were the main sources of data for this study. These were obtained from the Hand book of Listed Companies 2007 & the annual reports of respective banks. Further, scholarly articles from academic journals, relevant text books on the subject and the internet search engines were also used. Specifically, the financial statements of the banks in the sample were collected for the period 2002-2009 and a balanced panel of ten banks emerged for the study.

b) Sampling Design

According to Jankowicz, (1994) generalisation about the population from data collected using any sample is based on probability. In order to be able to generalise about the research finding to the population, it is necessary to select samples of sufficient size. A large sample size will in general improve the quality of the research. A large sample size is always better than a small one. Saunders, Lewis and Thornhill (1996) also point out that the larger the sample size, the lower the likely error in generalising the population. The Colombo Stock Exchange (CSE) has 241 companies representing 20 business sectors as at 11th February 2011. The sample of this study composed of ten banks listed in the Colombo Stock Exchange and period of 8 years from 2002 to 2009. From the 20 sectors; Banks Finance & Insurance sector was selected for the present study. From this sector the following ten listed Srilankan banks were selected to carry out the research;

1. Commercial Bank of Ceylon Limited
2. Hatton National Bank Limited
3. Housing Development Finance Corporation Bank of Sri Lanka
4. Merchant Bank of Sri Lanka PLC
5. National Development Bank PLC
6. Nations Trust Bank Limited
7. People's Merchant Bank PLC
8. Sampath Bank Limited
9. Seylan Bank PLC
10. Seylan Merchant Bank PLC.

Only listed banks are selected for this research. This represents 27% of the mean number of the companies listed under the Banks, Finance & Insurance sector. Other companies listed under the different sectors are not taken into consideration in this analysis in order to arrive at a generalized conclusion about the listed banks in Sri Lanka.

c) Mode of Analysis

The quantitative research approach is employed to find out the findings of the research study. Since numerical and secondary data is used, quantitative approach is considered to be a suitable approach for the study. According to Leavy (2004), "statistical analyses are used to describe an account for the observed variability in the data". This involves the process of analyzing the data that has been collected. Thus the purpose of statistics is to summarize and answer questions that were obtained in the research. The upper level of statistical significance for hypotheses testing was set at 5%. All statistical test results were computed at the 2-tailed level of significance. Statistical analysis involves both descriptive and inferential statistics.

Descriptive statistics are used to describe and summarize the behavior of the variables in a study. They refer to the ways in which a large number of observations are reduced to interpretable numbers such as averages and percentages. Inferential statistics are used to draw conclusions about the reliability and generalizability of the findings. In order to test the research hypotheses; the inferential tests used include the Correlation Analysis.

d) Research Model

Correlation analysis was carried out to identify the relationship between capital structure and profitability. Here capital structure is the independent variable and profitability is the dependent variable. From these independent and dependent variables, the following relationship is formulated.

Profitability of the banks is dependent upon the capital structure. It is represented as follows;

$$P = f\ (CS)$$

Which shows profitability is the function of capital structure.

Where;
P = Profitability
CS = Capital Structure

Here, profitability is measured with the help of four ratios namely Net profit, Return on Capital Employed, Return on Equity and Net Interest Margin. Capital structure is measured with the help of Debt/Equity ratio and Debt to Total Funds ratio.

VIII. Results & Analysis

a) Descriptive Statistics

Table1 : Descriptive Statistics

Variables	N	Range	Minimum	Maximum	Mean	Std. Deviation
Net profit	10	20.96	-3.6	17.36	8.8789	5.90755
Return on Capital Employed	10	16.11	9.32	25.42	14.8218	5.16101
Return on Equity	10	62.04	-42.55	19.48	9.5116	18.51050
Net Interest Margin	10	4.73	3.49	8.22	4.9070	1.73385
Debt/Equity Ratio	10	1353.63	182.25	1535.88	825.1531	801.59839
Debt to Total Funds Ratio	10	17.91	77.48	95.39	88.6591	6.84658
Valid N (listwise)	10					

The descriptive statistics show that over the period under study, the profitability ratios measured by net profit, return on capital employed, return on equity and net interest margin averaged 8.9%, 14.8%, 9.5% and 4.9% respectively. The debt/equity ratio stood at 825.2% and debt to total funds averaged 88.7%. This is an indication that approximately 89% of total assets in the banking sector of Sri Lanka are represented by debt, confirming the fact that banks are highly geared institutions. The maximum and minimum values for debt/equity ratio indicate that the debt/equity composition varies substantially among the listed banks in Sri Lanka.

b) Correlation Analysis

Table 2 : Correlation Analysis

Correlations

Variables		Debt to Equity	Debtto Total Funds	Net Profit	ROCE	ROE	NIM
Debt to Equity	Pearson Correlation	1	.777[**]	-.370	-.388	.328	-.661[*]
	Sig. (2-tailed)		.008	.293	.268	.355	.037
	N	10	10	10	10	10	10
Debtto Total Funds	Pearson Correlation	.777[**]	1	-.711[*]	-.561	-.246	-.879[**]
	Sig. (2-tailed)	.008		.021	.092	.493	.001
	N	10	10	10	10	10	10
Net Profit	Pearson Correlation	-.370	-.711[*]	1	.217	.722[*]	.402
	Sig. (2-tailed)	.293	.021		.547	.018	.249
	N	10	10	10	10	10	10
ROCE	Pearson Correlation	-.388	-.561	.217	1	.002	.606
	Sig. (2-tailed)	.268	.092	.547		.996	.063
	N	10	10	10	10	10	10
ROE	Pearson Correlation	.328	-.246	.722[*]	.002	1	.075
	Sig. (2-tailed)	.355	.493	.018	.996		.837
	N	10	10	10	10	10	10
NIM	Pearson Correlation	-.661[*]	-.879[**]	.402	.606	.075	1
	Sig. (2-tailed)	.037	.001	.249	.063	.837	
	N	10	10	10	10	10	10

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

The above mentioned table indicates the relationship between the various independent and dependent variables used in the study. From this table it is crystal clear that the association was found to be negative for all the independent and dependent variables used in the study except the association between debt to equity and return on equity which was found to be positive. Debt to equity and debt to total

funds were negatively correlated with net interest margin and found to be significant at 0.05 and 0.01 levels respectively. That is when debt increases funds will go out mostly in the way of interest resulting in a decline of

net interest margin. Furthermore, the R value was found to be -0.711*for the association between debt to total funds and net profit.

c) *Hypotheses Testing*

No	Hypotheses	Results	Tools
H1	There is a significant negative relationship between Debt to equity and Net profit.	Rejected	Correlation
H2	There is a significant negative relationship between Debt to equity and Return on Capital Employed.	Rejected	Correlation
H3	There is a significant negative association between Debt to equity and Return on Equity.	Rejected	Correlation
H4	There is a significant negative association between Debt to equity and Net Interest Margin.	Accepted	Correlation
H5	There is a significant negative relationship between Debt to Total Funds and Net profit.	Accepted	Correlation
H6	There is a significant negative relationship between Debt to Total Funds and Return on Capital Employed.	Rejected	Correlation
H7	There is significant negative association between Debt to Total Funds and Return on Equity.	Rejected	Correlation
H8	There is a significant negative association between Debt to Total Funds and Net Interest Margin.	Accepted	Correlation

IX. CONCLUSION & RECOMMENDATION

This study examined the relationship between capital structure and profitability in listed Srilankan banks. The study covered 10 listed banks over the period of 2002 to 2009 and the major findings of the study are summarized below:

The mean values of debt/equity ratio and debt to total funds were 825.15% and 88.66% respectively. The mean value of debt/equity ratio suggests that debt is 8.25 times higher than equity capital. The debt/equity ratio is normally safe up to 2. It shows the fact that banks in Sri Lanka depends more on debt (Long-term loans) rather than equity capital. The mean value of debt to total funds ratio indicates 89% of the total capital of listed banks in Sri Lanka is made up of debt. This has re-emphasized the fact that banks are highly levered institutions.

The R values were found to be significant & negative for the association between debt to equity and net interest margin, debt to total funds and net interest margin & debt to total funds and net profit consisting the R values of -0.661*, -0.879** and -0.711* respectively. This reveals that an increase in the level of debt finance increases the interest payments thus resulting in a decline in profitability.

Banks generally play a crucial role in the economic development of every country. One critical decision banks face is the debt-equity choice. Among others, this choice is necessary for the profit determination of firms. What this means is that banks

that are able to make their financing decision prudently would have a competitive advantage in the industry and thus making superior profits. Nonetheless, it is essential for us to recognize that this decision can only be wisely taken if banks know how debt policy influences their profitability. Therefore banks should take into view the following matters in order to increase their profitability;

1) An appropriate mix of capital structure should be adopted in order to increase the profitability of banks. Findings revealed that total debt is negatively correlated to the net profit (R = -0.711*) of the listed banks in Sri Lanka. That is in the case of higher debt, profitability will tend to decline. The reason behind this may be due to the high interest bearing securities engaged in the total debt. In addition to these an increase in the level of debt also increases the riskiness of banks. Therefore, banks should concern much on internal sources of financing in order to increase their profitability.

2) Top management of every banking firm should make prudent financing decision in order to remain profitable and competitive.

3) Banks in Sri Lanka must not be only interested in mobilizing deposits but must also be concerned with utilizing these deposits effectively and efficiently. To achieve this, banks must set competitive lending rates that would not deter customers from accessing loans.

X. LIMITATIONS AND SCOPE OF FUTURE RESEARCH

The current research is restricted only to the listed banks in the Banks, Finance & Insurance sector in Sri Lanka. Furthermore, this research was mainly conducted based on the secondary data collection. The other data collection methods had not been considered. As a result they may not be 100% accurate. In addition to these data representing the period of 2002 to 2009 were used for the study.

The research has compiled a large database of listed bank's 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 profitability and what elements of capital structure make a difference. To develop specific policy recommendations we suggest the following for further research;

1) There are currently 241 companies listed in the CSE under 20 sectors. The study covered only the listed Srilankan banks from the Banks, Finance & Insurance sector. Therefore, additional investigation is required to examine firms in the different sectors tend to follow different capital structure patterns.

2) Another research area that could be extended is to examine capital structure and profitability to the non-listed banks.

3) There are some other factors found which also affect the banks' profitability which are not focused in this study. One of the main factors is the regulations and restrictions from the Central Bank of Sri Lanka. Some other factors are size of the bank, ownership status, operating expense, cost decisions of banks' management, privatizations of banks and composition of bank's assets and liabilities. Therefore further investigation is required to examine regarding what are the factors other than capital structure influences on profitability?

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