

1 The Relationship between Capital Structure & Profitability

2 Prof.T.Velnampy¹ and J.Aloy Niresh²

3 ¹ University of Jaffna, Sri Lanka.

4 Received: 23 May 2012 Accepted: 18 June 2012 Published: 2 July 2012

5 **Abstract**

6 Capital structure decision is the vital one since the profitability of an enterprise is directly
7 affected by such decision. The successful selection and use of capital is one of the key elements
8 of the firms? financial strategy. Hence, proper care and attention need to be given while
9 determining capital structure decision. The purpose of this study is to investigate the
10 relationship between capital structure and profitability of ten listed Srilankan banks over the
11 past 8 year period from 2002 to 2009. The data has been analyzed by using descriptive
12 statistics and correlation analysis to find out the association between the variables. Results of
13 the analysis show that there is a negative association between capital structure and
14 profitability except the association between debt to equity and return on equity. Further the
15 results suggest that 89

17 **Index terms**— Capital structure, Profitability, Debt, Equity, Return on Equity.

18 **1 Introduction**

19 his study focuses on the association between capital structure & profitability of listed banks in the Banks, Finance
20 & Insurance sector. Capital structure is one of the most puzzling issues in corporate finance literature ??Brounen
21 & Eichholtz, 2001). The concept is generally described as the combination of debt & equity that make the total
22 capital of firms. The proportion of debt to equity is a strategic choice of corporate managers. Capital structure
23 decision is the vital one since the profitability of an enterprise is directly affected by such decision. Hence, proper
24 care and attention need to be given while determining capital structure decision. In the statement of affairs of
25 an enterprise, the overall position of the enterprise regarding all kinds of assets, liabilities are shown. Capital is
26 a vital part of that statement. The term "capital structure" of an enterprise is actually a combination of equity
27 shares, preference shares and long-term debts. A cautious attention has to be paid as far as the optimum capital
28 structure is concerned. With unplanned capital structure, companies may fail to economize the use of their funds.
29 Consequently, it is being increasingly realized that a company should plan its capital structure to maximize the
30 use of funds and to be able to adapt more easily to the changing conditions. (Pandey, 2009) The relationship
31 between capital structure and profitability is one that received considerable attention in the finance literature.
32 The study regarding the effects of capital structure on profitability will help us to know the potential problems
33 in performance and capital structure. The modern industrial firm must conduct its business in a highly complex
34 and competitive business environment. Therefore, these types of research findings will be benefited in selecting
35 the capital structure to achieve the optimum level of firm's profitability. This study shows the statistical analysis
36 carried out seeking to discover is there any relationship between capital structure and profitability of the listed
37 banks in the Banks, Finance & Insurance sector.

39 **2 II.**

40 **3 Research Problem**

41 According to Buser (1981), the capital structure decision of a bank is similar to that of a non financial firm.
42 Although there are considerable inter industry differences in the capital structure of firms due to the unique

5 REVIEW OF LITERATURE

43 nature of each industry's business and the intrafirm variations attributed to the business and financial risk of
44 individual firms. An ultimate goal of a firm is the maximization of wealth or value of that firm ??Miller &
45 Modigliani, 1958, 1963; ??iller, 1977). The relationship between capital structure and profitability has been the
46 subject of remarkable milestone over the past decade throughout the irrelevance theory. In the seminal article,
47 presented by MM's (1958) irrelevance theory, they argued that capital structure is unrelated to firm's value. In
48 the presence of corporate income tax and the cost of capital in MM's (1963) they argued that the market value
49 of the firm is positively related to the amount of long term debt used in its capital structure.

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

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

65 4 Objectives

66 The objectives are geared towards the following:

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

70 IV.

71 5 Review Of Literature

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

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

90 According to the Business Dictionary profitability is the ability of a firm to generate net income on a consistent
91 basis. Ratio is used as a benchmark for evaluating the performance of a firm. Ratios help to summarize large
92 quantities of financial data and to make qualitative judgement about the firm's profitability. One of the most
93 important financial decisions facing companies is the choice between debt and equity capital ??Glen & Pinto,
94 1994). This decision can effectively and efficiently be taken when managers are first of all aware of how capital
95 structure influences firm profitability. This is because; this awareness would enable managers to know how
96 profitable firms make their financing decisions in particular contexts to remain competitive. In the corporate
97 finance literature, it is believed that this decision differs from one economy to another depending on country level
98 characteristics. The data for this research paper was collected from Datastream, an electronic financial database.
99 The analysis of this paper shows that gearing is generally higher among contractors than developers and capital
100 Lalith, P.S (1999) investigated the capital structure of Srilankan companies and found that the use of long-term
101 debt is relatively low in Srilankan companies. The mean leverage in Sri Lanka is estimated as 13.5%, long term

102 debt to equity ratio is 24% while the total debt to equity ratio is 104.1%. This evidence suggested that the use
103 of debt financing in Sri Lanka is significantly low in comparison to G7 markets.

104 gearing is positively related with asset but negatively with profit margins.

105 Peterson & Rajan (1994) found a significantly positive association between profitability and debt ratios in
106 a study designed to investigate the relationship. Ooi (1999) argues that profitable firms are more attractive
107 to financial institutions as lending prospects. The reason is that, those firms are expected to have higher tax
108 shields and low bankruptcy costs. Furthermore, Abor (2005) has reported a significantly positive relationship
109 between the ratios of short term debt to total assets & profitability but a negative association between the ratio
110 of long term debt to total assets and profitability. Dimitris, M. & Maria, P. (??008) investigated the relationship
111 between capital structure, ownership structure and firm performance across different industries using a sample
112 of French manufacturing firms. They found that a negative relationship between past profitability and leverage
113 and there will be a positive relation between profitability and leverage.

114 V.

115 **6 Conceptualization**

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

119 **7 Hypotheses Of The Study**

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

126 **8 VII.**

127 **9 Methodology a) Data Collection**

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

135 **10 b) Sampling Design**

136 According to Jankowicz, (1994) generalisation about the population from data collected using any sample is based
137 on probability. In order to be able to generalise about the research finding to the population, it is necessary to
138 select samples of sufficient size. A large sample size will in general improve the quality of the research. A large
139 sample size is always better than a small one. Saunders, Lewis and Thornhill (1996) also point out that the larger
140 the sample size, the lower the likely error in generalising the population. Only listed banks are selected for this
141 research. sectors are not taken into consideration in this analysis in order to arrive at a generalized conclusion
142 about the listed banks in Sri Lanka.

143 **11 c) Mode of Analysis**

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

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

155 12 d) Research Model

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

159 Profitability of the banks is dependent upon the capital structure. It is represented as follows; The descriptive
160 statistics show that over the period under study, the profitability ratios measured by net profit, return on
161 capital employed, return on equity and net interest margin averaged 8.9%, 14.8%, 9.5% and 4.9% respectively.
162 The debt/equity ratio stood at 825.2% and debt to total funds averaged 88.7%. This is an indication that
163 approximately 89% of total assets in the banking sector of Sri Lanka are represented by debt, confirming the
164 fact that banks are highly geared institutions. The maximum and minimum values for debt/equity ratio indicate
165 that the debt/equity composition varies substantially among the listed banks in Sri Lanka. The above mentioned
166 table indicates the relationship between the various independent and dependent variables used in the study. From
167 this table it is crystal clear that the association was found to be negative for all the independent and dependent
168 variables used in the study except the association between debt to equity and return on equity which was found
169 to be positive. Debt to equity and debt to total funds were negatively correlated with net interest margin and
170 found to be significant at 0.05 and 0.01 levels respectively. That is when debt increases funds will go out mostly
171 in the way of interest resulting in a decline of net interest margin. Furthermore, the R value was found to be
172 -0.711*for the association between debt to total funds and net profit. $P = f (CS)$ Which shows

173 13 b) Correlation Analysis**174 14 c) Hypotheses Testing****175 15 No Hypotheses**

176 Results Tools

177 16 H1

178 There is a significant negative relationship between Debt to equity and Net profit.

179 17 Rejected Correlation**180 18 H2**

181 There is a significant negative relationship between Debt to equity and Return on Capital Employed.

182 19 Rejected Correlation**183 20 H3**

184 There is a significant negative association between Debt to equity and Return on Equity.

185 21 Rejected Correlation**186 22 H4**

187 There is a significant negative association equity and Net Interest Margin.

188 23 Accepted Correlation**189 24 H5**

190 There is a significant negative relationship between Debt to Total Funds and Net profit.

191 25 Accepted Correlation**192 26 H6**

193 There is a significant negative relationship between Debt to Total Funds and Return on Capital Employed.

194 27 Rejected Correlation**195 28 H7**

196 There is significant negative association between Debt to Total Funds and Return on Equity.

197 **29 Rejected Correlation**

198 **30 H8**

199 There is a significant negative association between Debt to Total Funds and Net Interest Margin.

200 **31 Accepted Correlation**

201 IX.

202 **32 Conclusion & Recommendation**

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

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

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

216 Banks generally play a crucial role in the economic development of every country. One critical decision banks
217 face is the debt-equity choice. Among others, this choice is necessary for the profit determination of firms. What
218 this means is that banks that are able to make their financing decision prudently would have a competitive
219 advantage in the industry and thus making superior profits. Nonetheless, it is essential for us to recognize that
220 this decision can only be wisely taken if banks know how debt policy influences their profitability. Therefore
221 banks should take into view the following matters in order to increase their profitability; 1) An appropriate mix
222 of capital structure should be adopted in order to increase the profitability of banks. Findings revealed that total
223 debt is negatively correlated to the net profit ($R = -0.711^*$) of the listed banks in Sri Lanka. That is in the
224 case of higher debt, profitability will tend to decline. The reason behind this may be due to the high interest
225 bearing securities engaged in the total debt. In addition to these an increase in the level of debt also increases
226 the riskiness of banks. Therefore, banks should concern much on internal sources of financing in order to increase
227 their profitability.

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

230 3) Banks in Sri Lanka must not be only interested in mobilizing deposits but must also be concerned with
231 utilizing these deposits effectively and efficiently. To achieve this, banks must set X.

232 **33 Limitations And Scope Of Future Research**

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

237 The research has compiled a large database of listed bank's accounting data that demonstrate what can be
238 done even with the limitations of currently available data. There is clearly enormous scope for more research that
239 can inform an understanding of how the capital is structured, how it connects with the profitability and what
240 elements of capital structure make 1) There are currently 241 companies listed in the CSE under 20 sectors. The
241 study covered only the listed Srilankan banks from the Banks, Finance & Insurance sector. Therefore, additional
242 investigation is required to examine firms in the different sectors tend to follow different capital structure patterns.
243 2) Another research area that could be extended is to examine capital structure and profitability to the nonlisted
244 banks. 3) There are some other factors found which also affect the banks' profitability which are not focused in
245 this study. One of the main factors is the regulations and restrictions from the Central Bank of Sri Lanka. Some
246 other factors are size of the bank, ownership status, operating expense, cost decisions of banks' management,
247 privatizations of banks and composition of bank's assets and liabilities. Therefore further investigation is required
248 to examine regarding what are the factors other than capital structure influences on profitability? ^{1 2}

¹Global Journal of Management and Business Research Volume XII Issue XIII Version I

²© 2012 Global Journals Inc. (US) Year **. Correlation is significant at the 0.01 level (2-tailed). *. Correlation
is significant at the 0.05 level (2-tailed).



Figure 1: T 51 Global

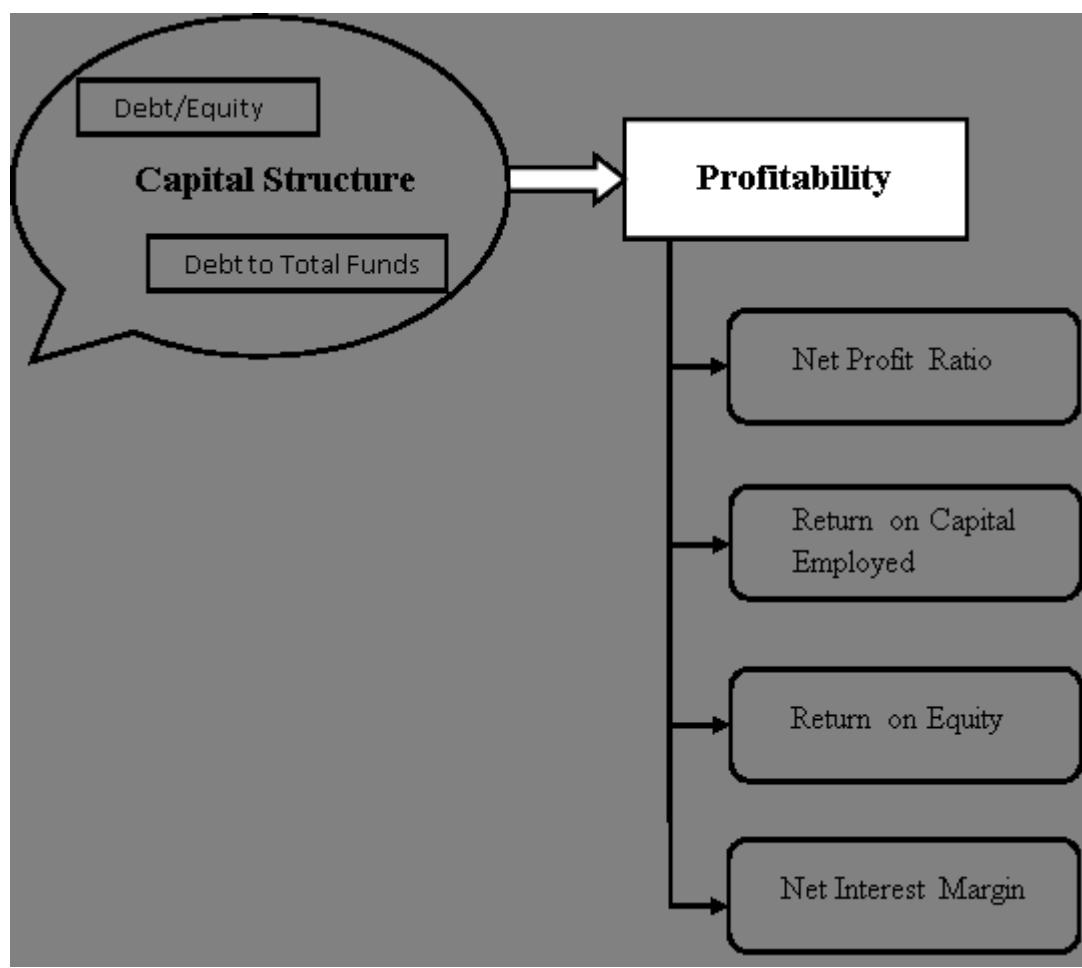


Figure 2:

VIII. Results & Analysis

a) Descriptive Statistics

Variables	Table1 : Descriptive Statistics				Mean	Std. Deviation
	N	Range	Minimum	Maximum		
Net profit	10	20.96	-3.6	17.36	8.8789	5.90755
Return on Capital Employed	10	16.11	9.32	25.42	14.82185	1.16101
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	825.153801	1.59839
Debt to Total Funds Ratio	10	17.91	77.48	95.39	88.65916	16.84658
Valid N (listwise)	10					

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.

Figure 3:

2

Correlations

Figure 4: Table 2 :

249 .1 This page is intentionally left blank

250 [American Economic Review] , *American Economic Review* 53 p. .

251 [Modigliani and Miller ()] *Corporate income taxes and the cost of capital: A Correction*, F Modigliani , M Miller
252 . 1963.

253 [Taub ()] 'Determinants of the Firm's Capital Structure'. A J Taub . *Revie of Economics and Statistics* 1975. 57
254 p. .

255 [Guthman and Dougalls] H G Guthman , H E Dougalls . *Corporate and Financial Policy*, (Englewood Cliffs New
256 Jersey) Prentice Hall Ic. (4th ed)

257 [Nimalathasan and Brabete] B Nimalathasan , V Brabete . *Capital Structure and its Impact on Profitability: A
258 Study of Listed Manufacturing Companies in*, (Sri Lanka)

259 [Pandey ()] I M Pandey . *Financial Management: Capital Structure Planning and Policy*, 2009. 333 p. 332.

260 [Kothari ()] *Research Methodology: Methods & Techniques*, C R Kothari . 2004. p. .

261 [Scribd ()] <http://www.scribd.com/doc/24408725/Profitability-8.Ratios> Scribd, 2011.

262 [Taylor] W B Taylor . *Financial Policies of Business Enterprises*, (Appleton -Century, Crofts N.Y.) (2nd ed)

263 [Titman and Wessels ()] 'The Determinants of Capital Structure Choice'. S Titman , R Wessels . *Journal of
264 Finance* 1988. 43 (1) p. .

265 [Titman ()] 'The Effect of Capital Structure on a Firm's Liquidation Decisions'. S Titman . *Journal of Financial
266 Economics* 1984. 13 p. .

267 [Abor ()] 'The Effect of Capital Structure on Profitability: An Empirical Analysis of Listed Firms in Ghana'. J
268 Abor . *The Journal of Risk Finance* 2005. 6 (5) .

269 [Berger ()] 'The relationship in Banking-Tests of Market power and Efficient market Hypotheses'. A N Berger .
270 *Journal of Money, Credit and Banking* 1995. 65 (3) .