

The Impact of Financial Leverage on the Wealth of Shareholders relevant to the Firms in Sri Lanka*

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Abstract

This paper investigates whether the financial leverage of a company influences the value maximization objective of an organization. Also, what kind of leverage levels would result in maximizing the shareholders' wealth of companies? Because maximizing the shareholders' wealth is one of the important issues for management of the listed companies. The financial data from 60 listed companies in the Colombo Stock Exchange covering eight different sectors for a period of ten years from 1992 to 2001 are gathered and analyzed. The results do not show any clear relationship between financial leverage and shareholders' wealth among the selected sample companies. Besides, as the size of the sampling is small any findings could not be conclusively established as dependable. The findings expose evidence, which are contrary to strength of most western theories. Hence, Sri Lankan firms should bear this in mind when deciding the optimal capital mix.

Keywords: Financial Leverage; Wealth of shareholders; Optimal capital mix; Sri Lanka

Introduction

This research studies whether the capital structure of a company influences the value maximization objective of an organization. Capital structure planning keyed to the objective of profit maximization ensures the minimum cost of capital and the maximum rate of return to shareholders. The amount of capital a firm needs is not its only financial consideration. Equally important is the capital mix: the kinds of capital that form the company's financial base. Various decisions are taken by the management from time to time with a view to maximize the wealth of shareholders. Decisions pertaining to capital structure are no exception, where the firms evaluate the associated costs and benefits with regard to each financing option.

Capital structure theory does not provide clear and specific answers to questions of optimal capital structure. Optimal capital structure means that the range of capital structure where firms maximize its value or the capital structure which results lowest possible weighted average cost of capital. This has

created a gap in knowledge as to what is the ideal capital mix that would maximize the shareholders' wealth in a real business scenario of listed companies in Sri Lanka. So, this study has focused above objectives, which are not clearly known in the Sri Lanka market.

Capital structure refers to the long-term financing of a firm represented by the long-term debt, preference shares and ordinary shares. Creditors who provide the long term financing to the company look for equity shareholders funds to provide margin of safety. If the shareholders funds constitute a small proportion of total financing the risks of the enterprise is mainly borne by the lenders. However, by raising funds through debt, equity shareholders gain the benefits of maintaining control of the firm with a relatively low investment. Therefore, the firm attempts to balance the benefits of interest tax accruing from debt financing against various costs of bankruptcy and financial embarrassment. Empirical work by Bradley, Jarrell and Kim (1984), Long and Malitz (1985) and Titman and Wessells (1985) largely supports bankruptcy costs or agency costs as partial

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determinants of leverage and of optimal capital structure. Lalith P.Samarakoon (1999) found that in Sri Lanka, the use of long term debt is low, tangible assets and growth opportunities are not determinants of leverage, large companies tend to use more leverage, and profitable firms tend to use less leverage. Further finding of this research emphasizing the development of debt market is low and also interest rate is very high. This leads to keep in a low level leverage. In a book published on Management Accountancy in Sri Lanka by Bennett has stated that “ In Sri Lankan term, a moderate level of gearing would be anything up to one of debt to one equity, i.e 50: 50 mix”(Bennett 1987 p357)

Further, in a research conducted in the US market, Bhandari(1998) revealed that expected stock returns are positively related to leverage. Leveraged is defined as the book value of total the debt divided by market value of equity. The expected common stock returns are positively related to the ratio of debt (non common equity liabilities) to equity, controlling for the beta and firm size (Bhandari, 1988:507). These findings suggest that highly leveraged firms have higher average returns and vice versa.

A great deal of controversy has arisen on issue of whether the capital structure as determined by the financial decision of a firm affects the overall value of the company. It has been observed that changes in capital structure convey information to investors, which in turn affects the prices of shares. McConnell and Servaes(1995) find that leverage is positively related to firm value for low-growth firms, but negatively related to firm value for high-growth firms. In general, there is inadequate knowledge of corporate financing behavior and how it affects the security returns.

“The behavior of the stock market reflects the collective knowledge, beliefs, hopes, fears and fantasies of all investors. Facts, rumors, judgments, and emotions give rise to conflicting

opinions assume concrete shape and size the form of orders to buy and sell shares: they are translated into demand and supply” (Rolo, 1982 p.27)

It is clear that firms have the choice of using debt or equity financing. Equity refers to ordinary share capital and reserves that belong to providers of capital of the organization. By debt, we denote all long-term liabilities such as preference shares, debentures and other long term debts incurred by the firm, which have duration of more than one year.¹ Questions pertaining to whether one form of capital structure is better than the other and the costs and benefits of each type have concerned financing managers on their decision-making. Managers generally, focus on a prudent level of debt rather than setting a precious target. A prudent level would enable the firms to keep the financial risk at a reasonable level, ensure financial flexibility and maintain a desirable credit rating. Theories of optimal capital structure based on the agency costs of managerial discretion suggests that, in some cases, the adverse impact of leverage on growth increases firm value by preventing managers from taking poor projects (Jensen, 1986; Stultz, 1990)

Stock market analysts have found that changes in capital structure have impacts on earning per share (EPS), share price, price earning ratio (PE ratio) and cost of capital of a company. It is the objective of every investor to drive maximum return from investments. As the returns to the investor are affected by the capital structure, this area of study has drawn the attention of several researchers and also organizations aim at maximizing their earnings and achieving higher prices for their shares, it is necessary to focus the study on capital structure

This paper proceeds as follows. Section two provides a review of previous studies on capital structure and its implication on shareholders wealth. Section three is devoted to describe the data and methodology. Section

¹ In this study, Preference shares have been taken as a debt in calculating debt/equity ratio. Because, it is paid a fixed rate of return.

four provides the results of the empirical tests and analysis. Section five concludes the paper.

Literature Review

The traditional view was that it would be beneficial to increase from a low (or zero) level because the firm would then be financed to greater extent by cheaper borrowed funds, therefore the weighted average cost of capital (WACC) would fall. The discounting of future cash flows at this lower WACC produces higher present value and so shareholder wealth is enhanced. However, as debt levels raise the firm's earnings attributable to shareholders become increasingly volatile due to the requirement to pay large amounts of interest prior to dividends. Eventually the burden of a large annual interest bill can lead the firm to become financially distressed and, in extreme circumstances, liquidated. So the traditional answer to the question of whether there was an optimum leverage level was 'yes'. If the leverage level is too low, shareholder value opportunities are forgone by not substituting 'cheap' debt for equity. If it is too high the additional risk leads to a loss in shareholder value through a higher discount rate being applied to the future cash flows attributable to ordinary shareholders. This is because of the higher risk and, at very high leverage, the penalty of complete business failure becomes much more of a possibility (Glen Arnold, 1998 p.774).

The optimal capital structure maximizes market price of the share, thus takes all advantages connected with effects of corporate taxation, higher EPS and ROE and disadvantages related to higher risk, higher cost of capital and higher bankruptcy costs into consideration. This situation occurs when WACC is minimized.

In 1958 Professors Franco Modigliani and Merton Miller (MM) wrote one of the most important articles about capital structure. They proved that under very restrictive conditions, the firm's value is not affected by its capital

structure. That is, the overall value of the firm is constant and shareholder wealth cannot be enhanced by altering the debt/ equity ratio. So, there is no optimal leverage level. This conclusion was based on some major assumptions and required the firm to operate in a perfect world of perfect knowledge, a world in which individual shareholders can borrow and lend at the same rate as giant corporations, and in which taxation and cost of financial distress do not exist.

Later Modigliani and Miller(1963) modified the no-taxation assumption. This led to a different conclusion. That is, the best leverage level for a firm interested in shareholder wealth maximization is, generally, as high as possible. In this, there is an optimum leverage at the most extreme level of debt.

According to trade-off theory, companies trade-off the benefits of debt financing (favourable corporate tax) against the higher interest rates and bankruptcy costs. The fact that interest is a deductible expense makes debt less expensive than common share. However, beyond the certain level of debt, bankruptcy- related costs exceed the tax benefits.

Apart from finance and bankruptcy issues, while considering capital structure, we have to think about some "behavioural" justification for the use of gearing.² One of these is Signaling theory, which is based upon the assumption of superior knowledge possessed by managers as insiders. In this position, they may choose to increase debt capital in the belief that aggressive leverage policy may be interpreted by shareholders as an indication of managers' confidence about the future prospects. Secondly, managers are willing to introduce debt rather than equity because, if too little debt is used the risk of takeover is high.

The pecking order theory states that firms prefer internal to external finance. If external finance is required, firms prefer last comes

² Edward W. Davis and Joh Pointon, *Finance and the Firm* 1994 p 108

debt to equity because of lower information costs associated with debt issues. Equity is issued only under duress.

In this way, there are several theories on optimal capital structure explaining its impact on firm's value. Financial theorists have toiled to arrive at an optimal capital structure that could be applied to all organizations. The diverse nature of industries indicates that a uniform optimal capital structure cannot be applied across all organizations. Studies conducted in this area have led to various theories being formulated which explain the rationale behind them. However, there has not been any consensus pertaining to the optimal capital structure among the researchers.

Data and Methodology

This study uses key financial data relating to capital structures and shareholders' wealth of sixty companies listed prior to 1997 in the Colombo Stock Exchange where 235 companies have been listed at present. The analysis covers a period of ten years commencing from March 1992 ending in March 2001. Firms that were incurring continuous losses and those which did not have long-term debts were eliminated from the sample. Hence, the absence of long-term debts and continuous losses are severely restricted the sample size.

Further, when selecting the sample, only the companies that had Debt / Equity Ratio and PE ratios or Market Value of a share for a minimum period of four years were included. There were many companies that had a PE ratio and Market Value of a share, but did not have long-term debts. As both these ratios and market value of a share were required for the analysis, companies that did not have them were eliminated from the sample.

It was observed that many companies resorted to heavy short-term borrowings to finance their operations. Some companies had even utilized these short-term borrowings to finance their fixed assets. In view of this, it

has separately analyzed incorporating short-term debt with the long-term debts.

From a total of eighteen sectors listed in the Colombo Stock Exchange, only eight sectors were selected for the analysis. The selection of sectors was made on the basis of that sectors having a minimum of four companies qualified under the above sample selection conditions.

It was observed that a few P/E ratios of sample companies were extraordinarily high during the period under review. Upon careful examination of these ratios, it has been found that those companies had experienced a sudden steep drop in earnings or were having very low earnings. As these exceptional figures may distort the findings, they have been removed from the analysis.

Certain firms, which were incurring losses at the beginning of sample period, had witnessed turn around in profitability during the latter periods of the analysis. Although Debt/ equity ratio was available throughout the period for these companies, years in which losses incurred were eliminated due to non-availability of a PE ratio. Every effort was made to ensure that the set of data taken for the analysis were accurate and did not contain any non-representative information that would mislead the research to arrive at wrong conclusions.

Data for the research were collected from various published sources such as; Hand book of listed companies, Annual Reports of Companies, Stock Market Daily Reports, Monthly Market Reports, Fact Book, Quarterly Reports of Companies, C.T Smith Stock Brokers (Pvt) Ltd., DP Global Securities (Pvt) Ltd. In addition, structural questionnaires are used to gather some practical information in this area.

Measuring Variables

The variables, indicators and measures to be used for the analysis are given in Table 1.

Table 1: Measurement of Variables

Concept	Variable	Indicators	Measures
Capital Structure	Relationship between Long-term debt and equity capital at the end of financial year.	$\frac{\text{Debt capitalization} \times 100}{\text{Total capitalization}}$	Percentage
Shareholders' wealth	Relationship between market price and Earnings per share at the end of financial year.	Market Price of a Share Earning Per Share	Ratio
	Share Value	Latest transaction price of the share	Rupees

Method of Analysis

A regression analysis is carried out between these variables during the period under review in order to establish whether a correlation exists. The data are analyzed using different criteria to determine the relationship between these sets of variables. The coefficient of correlation is evaluated to determine whether the relationship is positive, negative or no correlation exists among the variables. The coefficient of determination is evaluated to measure the level of effect of the independent variable of D/E ratio on the dependent variables of P/ E ratio and Market Value of a share at the end of financial year. Further, same analysis was done for the adjusted D/E ratio of independent variable, while other measurement variables are constant. Adjusted D/E ratio is calculated incorporating short-term debts with long-term debts.

Regression and correlation analysis measure the relationship or association between two or more variables. The known variable or the independent variable for this study is the D/E ratio. The dependent variable that is being examined is the PE ratio and market value of a share. Correlation analyses are the statistical tool that we can use to describe the degree to which one variable is linearly related to another (Levin1992:505)

The coefficient of determination measures the extent or strength of the linear relationship between the two variables. It could also be interpreted as showing the percentage variation in the dependent variable explained by the independent variable. On the other hand, coefficient of correlation tells us how

one variable is explained by another and indicates the direction of the relationship whether it is positive or negative.

Initially, companies with sets of data for ten years were regressed individually to determine the degree of correlation for P/ E ratio and Market Value. Then it was regressed for all year to determine degree of correlation of debt / equity ratio, the P/E ratio for the sample companies. The coefficient of determination (r^2) and coefficient of correlation (r) are worked out for the entire sample period. Also, the above measures are worked out sector wise for the eight different sectors to measure degree of correlation of each sector. In addition to the above tests, the relationships between shareholder's wealth and capital structure are measured using the adjusted D/ E ratio instead of D/ E ratio.

Coefficient of Correlation is measured by the following the Pearson's correlation coefficient

$$r = \frac{n \sum xy - \sum x \sum y}{\sqrt{\{ n \sum x^2 - (\sum x)^2 \} [n \sum Y^2 - (\sum Y)^2]}}$$

Where:

r = Coefficient of correlation

n = Number of data

X = Independent Variable (D/ E ratio or Adjusted D/ E ratio)

Y = Dependent variable (Price Earning ratio or Market Value of a share)

Coefficient of determination is measured by R squared (r^2)

In order to assess whether the computed correlation value is statistically significant, test of significant is done.

Degree of freedom (df) = n - 2

n = denotes the pairs of data under consideration

Level of significance 5%

So, if the computed correlation value for each company exceeds this critical value the correlation is statistically significant at 5% level.

The results of these tests will clarify what mix of debt and equity is ideal for the Sri Lankan companies and whether this would vary from one industry to another.

The following null-hypotheses have been developed to empirically verify the relationship between capital structure and shareholders' wealth among the selected sixty listed companies of the Colombo stock exchange.

1. H_0 There is no positive relationship between debt/ equity ratio and price earning ratio of the Colombo Stock Exchange in Sri Lanka.
2. H_0 There is no positive relationship between debt/ equity ratio and Market value of a share of the Colombo Stock Exchange in Sri Lanka.

Sub hypotheses to justify the above hypotheses

1. H_0 Low debt / equity ratio would not lead to high Price Earning ratio in the Colombo Stock Exchange in Sri Lanka.
2. H_0 Low debt / equity ratio would not lead to high market value of share in the stock market in Sri Lanka.
3. H_0 Medium and high debt / equity ratio would not result in low Price Earning ratio in the Colombo Stock Exchange in Sri Lanka.
4. H_0 Medium and high Debt / Equity ratio would not result in low market value of share in the Colombo Stock Exchange in Sri Lanka.

Results Of Empirical Tests And Analysis

The analysis is carried out to measure weather there is a correlation between the Debt / Equity ratio and the Price Earning ratio and also to measure the correlation between Debt /Equity ratio and Market Value of a share. Coefficient of correlation and coefficient of determination are calculated relevant to four pairs of independent and dependent variables, which are given in Table 2

Table 2: Four Pairs of Independent and Dependent Variables

	<i>Independent Variable</i>	<i>Dependent Variable</i>
01	Debt / Equity ratio	Price Earning ratio
02	Debt / Equity ratio	Market Value of a share
03	Adjusted Debt / Equity ratio	Price Earning ratio
04	Adjusted Debt / Equity ratio	Market Value of a share

The test results are discussed below.

The results do not show any clear relationship between the financial leverage and shareholders' wealth among the selected sample companies in the Colombo Stock Exchange. Also, there is no evidence to prove that the relationship between the financial

leverage and the shareholders' wealth exist. Because some of the sample companies are positively correlated and some are negatively correlated. Within these positively or negatively correlated companies, only a few companies, most probably less than 32% of the sample companies, are significant at 5% level.

The results of the analysis for the companies i.e., Carson Cumberbatch, Tokyo cement and Aitken Spence, and Royal Ceramics showed a strong positive coefficient of correlation 0.97, 0.89, 0.72, and 0.80 respectively between D/E ratio and P/E ratio during the period under review and the companies i.e., Cargills, Keells Food Products, Ceylon Tea Services showed a positive correlation 0.87, 0.79, 0.83 between D/E ratio and Market Value of a share. Upon examination of the movements of D/E ratio during this period it has been found that it fluctuates between low and high leverage levels. This shows that the D/E ratio was low throughout the period that had influenced the outcome of the benefits. According to the hypothesis one the low D/E ratio leads to high P/E does not seem to be applicable in this situation. But, the alternative hypothesis would automatically be applicable. Alternatively, it could be stated that an upward movement within the low debt category has caused a corresponding increase in P/E.

The benefits accruing due to utilization of cheaper source of debt financing with interest tax shield is not valid in the Sri Lanka situation. Higher interest rates along with financial distress and agency costs seem to have offset this advantage.

Correlations between the variable of the sectors differ from sector to sector. Here, diversified sector is positively correlated based on the D/E ratio and market value of a share and is significant at 5% level. This proves that there is a positive relationship between the Financial leverage and shareholders wealth. So, the hypothesis which states that there is no relationship between D/E ratio and P/E ratio is not applicable in the case of this sector but alternative hypothesis is applicable in this sector.

But, alternatively, for Chemical and Service sectors are negatively correlated and also significant at 5% level. So, since there exist positive relationships, the same hypothesis is applicable for these sectors.

If the short term debt is incorporated with the long term debt, the relationship between the Adjusted D/E ratio and P/E ratio is strongly negatively correlated. Hence, the hypothesis one is applicable for this sector.

Based on the analysis of the Adjusted D/E ratio and Market value of a share, the hypothesis is acceptable in the case of land and Property sector. Because, the relationships between the variables adapted are negative.

It has been observed that 72% of the sample companies are falling within the category of low level leveraged companies. This shows that companies did not show much interest in getting long term debt for their capital requirements.

If the short-term debt is incorporated with the long-term debt, it has been observed that 58% of the sample companies are falling within the category of low level leveraged companies. This shows that some companies show the interest in getting short term debts specially overdraft instead of long term debt.

It has the evidence from the analysis that an upwards movement within a low debt category had contributed towards positive results leading to a higher PE and Market value of a share in a few companies and sectors.

The relationship between the Low level leveraged companies and High market value of a share is found negative. So, the hypothesis which states that low level D/E ratio would not lead to High Market value of a share, is not applicable in the case of continuously profit making companies in Sri Lanka. But, the alternative hypothesis would be applicable in Sri Lanka.

The relationship between the Low level leveraged companies and medium market value of a share is found negative. So, the hypothesis which states that low level D/E ratio would not lead to Medium Market value of a share, is not applicable for continuously profit making companies in Sri Lanka. But, the alternative hypothesis would be applicable in Sri Lanka.

The relationship between the Low level leveraged companies and low market value of a share is observed negative. So, the hypothesis which states that low level D/E ratio would not lead to high Market value of a share, is not applicable in case of continuously profit making companies in Sri Lanka. But,

the alternative hypothesis would be applicable in Sri Lanka mostly.

Other hypotheses could not be proved because the results are not significant at 5% level. The results of these types of companies could not be determined to have final conclusions.

Conclusion

The results do not show any clear relationship between the financial leverage and shareholders' wealth among the selected sample companies in the Colombo Stock Exchange.

A study conducted in the US market by Bhandari in 1988, which is somewhat similar to this research, revealed that highly leveraged firms had higher average returns and vice versa. This shows that western theories and market conditions are not identical to the Sri Lanka situation.

The finding of this study confirms the theory of Modigliani and Miller original proposition, that there is no relationship between financial leverage and shareholders wealth among the selected sample listed companies. Hence, the original proposition of MM is applicable to the Sri Lanka context.

If the shareholders funds constitute a small proportion of total financing the risks of the enterprise mainly is borne by the lenders. However, by raising funds through debt, equity shareholders gain more benefits out of maintaining control of the firm with a relatively low investment. Therefore, the firm should attempt to balance the benefits of interest tax accruing from debt financing against various costs of bankruptcy and financial embarrassment.

It is unable to recommend any financial mix which would maximize the shareholder' wealth, as there is no clear relationship between the financial leverage and shareholders wealth, in Sri Lanka. So, managers of the continuously profit making companies could be taken any decision on the financial leverage.

Further studies could be done in this area by incorporating continuously loss-making companies in future by any researcher in this field.

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References

- Bennett A.H.M, ((1987) Management Accountancy in Sri Lanka, 2nd ed. Lake House Investment Ltd.
- Bradley.M , Jarrell.G, and Kim.EH.(1984), "On the Existence of an Optimal Capital Structure: Theory and Evidence, *Journal of Finance* 39, pp.857-878
- Bhandari Laximi Chand. (1988) "Debt and Equity ratio and Expected Common Stock Returns Empirical Evidence", *Journal of Finance* Vol.43, No.2.
- Edward W. Davis and Joh Pointon, (1994) *Finance and the Firm*, p 108
- Glen Arnold, *Corporate Financial Management*, Financial Times Pitman publishing 1998
- Jensen,M.(1986). "Agency costs of free cash flow: corporate finance and takeovers", *American Economic Review Papers and Proceedings*, Vol. 76.
- Lalith, P. Samarakoon (1999), "The Capital Structure of Sri Lankan Companies", *Sri Lanka Journal of management* Vol.14 pp18-30.No.1&2.
- Levy, H, Sarnat, M, "Capital Investment and Financial Decisions", 5th Ed. Prentice Hall of India Private Limited, 1995
- Long, M S., and Malitz,EB.(1985), " Investment patterns and Financial Leverage". In B. Friedman (ed.) *Corporated Capital Structures in the United States*, Chicago: Inventory of Chicago press.
- McConnel,J.J.,and Servaes,H.(1995). "Equity Ownership and the two faces of debt", *Journal of Financial Economics* 39, 131-157.
- Modigliani, F., and Miller, M. H. (1958). "The cost of capital, corporate finance, and the theory of investment", *Amer. Econ. Rev.* 48, 261-297.
- Modigliani, F., and Miller, M. H. (1963). "corporate income taxes and the cost of capital: A correlation", *Amer. Econ. Rev.* 53, 433-443.

Myers, Stewart C. and Nicholas S. Myer (1984). "Corporate financing and investment decisions when firms have information that investors do not have", *Journal of Financial Economics* Vol.13, pp. 187-221.

Myers, Stewart C. (1984). "The Capital Structure Puzzle" *Journal of Finance* Vol. xxxix, No.03.

Paul Marsh (1982) "The choice between equities and debt: An empirical study" *Journal of Finance*, Vol.32 No:1.

Richard I Levin, David s.Robin. (1992). *Statistics for Management*, 5th edition (Prentice hall of India Private Ltd..

Rolo Charles.J.(1982). "Gaining on the market". Canada. Little brown & Co.

Stulz,R..(1990).Managerial discretion and optimal financing policies. *Journal of Financial Economics* 26, 3-27.

Titman, Sheridan, and Roberto Wessels. (1988). "The determination of capital structure choice" *Journal of Finance*, Vol.43, pp. 1-19.

Definitions

Earning Per Share (EPS) means net profit after tax, preference share dividend and minority interest and before extraordinary items divided by the number of ordinary shares at the end of the year.

Price earning (PE) ratio is the market price of a share at the end of the year divided by earning per share.

Weighted average cost of capital (WACC) refers to the weighted average costs of the various components of the firm's capital structure.

Debt / Equity (D/E) ratio is the value of long term debt of a company divided by its equity value and long term debt.

Adjusted Debt / Equity ratio is the total value of long term debt and short term debt of a company divided by its equity value and long term and short term debt.

Low Debt/ Equity ratio refers to value of debt/ equity ranging from 0 to less than 0.25 levels.

Medium debt / equity ratio refers to value of debt/ equity ranging between 0.25 and more than 0.25 and less than 0.50 levels.

High debt/ equity ratio refers to value of debt / equity being 0.50 and above.