

Determinants of Capital Structure across Selected Manufacturing Sectors of Pakistan

Talat Afza

Professor

COMSATS Institute of Information Technology

Lahore, Pakistan

Amer Hussain

Faculty Member

IAA –University of Management and Technology

Lahore, Pakistan

FCMA, Ph.D (Scholar)

COMSATS Institute of Information Technology

Lahore, Pakistan.

Abstract

The present study examines the industry specific attributes of firms in Automobile, Engineering, and Cable and Electrical Goods Sectors affecting the determinants of capital structure and validates the results with Booth et. al. (2001) and Rajan and Zingales (1995). The study uses pooled data regression model on the sample of 22 Automobile, 7 Cable and Electrical Goods and 8 Engineering Firms to identify the determinants of capital structure. The debt to total assets ratio is used as a proxy for leverage and the impact of size, profitability, tangibility of assets, cost of debt, taxes, liquidity and non debt tax shield is analyzed on leverage. It is pertinent to report that the study uses liquidity, tax and cost of debt variables which were not used in the earlier studies conducted in Pakistan on industry specific attribute of capital structure and have significant influence on debt financing decisions. The empirical results reflects that firms of these three sectors with good liquidity position and large depreciation allowances use retained earnings, followed by debt financing for growth and smooth operations and equity financing is considered as a last resort. The results supported the Static Tradeoff Theory and Pecking Order Theory.

Keywords: Capital Structure, Debt Financing, Cost of Debt, Pakistan

INTRODUCTION

There has been a growing interest worldwide in identifying the factors influencing Capital Structure decisions of financial and non financial sectors. The primary objective of the firm is to maximize the shareholders wealth by selecting an appropriate mix of the sources of finance for a firm including retained earnings, proceeds from the issue of ordinary shares, preference shares and debt. Debt capital is provided by banks, Individuals and financial institutions including investment, leasing and insurance firms. The borrowing firms may avail the tax shield by using debt financing if they have operating profits but it increases the risk of bankruptcy. Bankruptcy costs include direct and indirect costs; the former consists of liquidation cost which is higher for a small firm and lesser for a large size firm. Indirect costs are the result of changes in policies of firm regarding long term investments i.e. reduction in the staff of research and development department, reducing training and development budgets of employees, and advertisement expenses which further increases the losses due to poor quality of goods and services resulting in low sales revenue of the firms. Therefore, the potential benefits of leverage diminish due to bankruptcy cost and highly levered firms are considered to be highly risky by lenders and investors. If the borrowing firm has low credit rating, the borrowing will not be cost effective for the firm. Equity financing includes issuance of common stock and cost of equity is higher than the cost of debt financing due to floatation cost and shareholders demand for higher dividend for the risk of volatility of earnings. Asymmetric information causes underinvestment issues for small firms. Large firms have less asymmetric information as compare to small firms which encourage the large firms to issue equity for fund raising.

1.2 Theoretical Framework

A number of existing theories in finance literature explain the behavior of the firm in making Capital Structure decisions and each theory focuses on a different aspect of financing choices of firms.

Miller and Modigliani (1958) claims that the value of the firm is independent of its capital structure. However, it provides a starting point that helps understand the capital structure and its determinants. The trade off theory of capital structure refers to mix of debt and equity by balancing the costs of bankruptcy and benefits of tax saving. Stewart C. Myers (1984) presented Pecking Order Theory which states that the firms prefer to use their internal sources of financing to equity financing. If internal financing do not meet the needs of the firm, they use external financing, first they apply for bank loan, then for public debts and as a last resort, equity financing is used. Thus, the profitable firms are less likely to opt for debt for new projects because they have the available funds in the form of retained earnings.

The present study examines the industry specific attributes of capital structure of firms of selected manufacturing sectors of Pakistan and compares the results with those of Booth et. al. (2001) and Rajan and Zingales (1995). The financial data of the selected sectors is collected from the balance sheets and income statements of 22 out of 26 firms of Automobile, 7 out of 9 Cable and Electrical Goods and 8 out of 13 firms of Engineering Sector for the period of 2003 to 2007 from Karachi and Lahore Stock Exchanges of Pakistan, making 185 firm years for panel data analysis. The annual reports of the remaining firms were not available on either of the stock exchanges. The paper is organized as follows: first section gives a brief view of the background of the study. Second section summarizes the relevant literature and third section gives description of the data and the explanation of the variables. Fourth Section explains the research methodology and fifth section summarizes the results.

2. LITERATURE REVIEW

Many empirical researchers have explored the determinants of capital structure from different point of views and in different environments related to developed and developing economies. Titman and Wessels (1988) analyzed the explanatory power of some of the recent theories of optimal debt equity ratio. They found that financing with debt was negatively related to firm's uniqueness regarding its type of business. Transactions costs might be an influencing determinant of capital structure decision and the results were consistent with existing theories. Another study on testing the static trade off theory and pecking order theory was done by Cassar and Holmes, (2003) and the results of regression analysis showed that the asset structure, profitability and growth were important factors which affected the debt equity ratio of the firms. Size and risk showed weaker influences on the debt financing of the firms. Their results were consistent with the static trade off, pecking order and agency cost theories. They proved that the theories applicable on capital structure of large firms are valid for small and medium enterprises of Australia. Rajan and Zingales (1995) pointed out that factors examined by previous researchers as correlated with the firm leverage in the United States, having similar relationship in other countries also.

Booth et. al. (2001) analyzed data from ten underdeveloped countries including Pakistan and empirically proved that some of the characteristics of modern finance theory were transferable across countries. In a subsequent study, Mitton T (2007) explained the tendency of firms in the emerging market for debt financing. In a recent study, Cespedes et.al. (2009) explained the behavior of firms in Latin America covering seven countries. They experienced that ownership oriented firms preferred equity financing due to lower tax shields and higher bankruptcy costs. Jong et. al. (2008) analyzed that the debt equity ratio was related to a number of country specific factors such as bond market development, protection of creditors' right and growth rate of gross domestic product. Although many foreign researchers have studied the attributes affecting the choice of debt and equity of firms in developed countries, few of them researched on firms in developing countries. In the perspective of Pakistan, Rahman (1990) studied the Industry and Size as determinants of Capital Structure decisions and the results showed that Engineering and Tobacco industries were heavily geared.

Focusing on the factors affecting capital structure decisions of firms of Japan, Malaysia and Pakistan, Mahmood, (2003) found that firms in Japan and Pakistan showed very high leverage ratios because of Japanese developed market status and underdeveloped capital market of Pakistan which forces firms to opt for bank loan rather than raising equity. Qureshi and Azid (2006) identified that the public sector preferred financing through debts due to low corporate governance, favorable terms and conditions of commercial banks and lesser accountability than private sector. Shah and Khan (2007) examined that there was highest leverage ratio for textile industry and the average profitability of textile industry was negative due to understatement of profit by family controlled firms. Hijazi (2006) examined the cement sector of Pakistan and the results, except for firm size, were found to be highly significant and rejected the static trade off theory.

Kanwar (2007) explained the attributes of Capital Structure in Sugar industry of Pakistan and the results depicted that return on assets, asset tangibility, market to book ratio and size were found to be significant except tax rate. The developed provinces of Pakistan showed highest debt ratios. Rafiq et. al. (2008) examined the chemical industry of Pakistan regarding capital structure choice and suggested that chemical sector preferred more equity financing than the debt financing. Size and growth variables showed static trade off behavior of the firms. On the basis of theoretical frame work of Ranjan and Zingales (1995) and previous empirical results, we have developed the following hypotheses to analyze the impact of tangibility, size of firm, tax, profitability, liquidity, non-debt tax shield and cost of debt on leverage.

- H01** = A firm with higher percentage of fixed assets will not prefer leverage.
Ha1 = A firm with higher percentage of fixed assets will prefer leverage.
H02 = The size of a firm does not have negative relationship with leverage.
Ha2 = The size of a firm has negative relationship with leverage.
H03 = The profitability of a firm does not have negative relationship with leverage.
Ha3 = The profitability of a firm has negative relationship with leverage.
H04 = The higher rate of taxes does not have positive relationship with leverage.
Ha4 = The higher rate of taxes has positive relationship with leverage.
H05 = The higher cost of debt does not have negative relationship with leverage
Ha5 = The higher cost of debt has negative relationship with leverage
H06 = The firm with more current assets does not have less leverage
Ha6 = The firm with more current assets has less leverage
H07 = The firm with higher rate of depreciation does not have less leverage
Ha7 = The firm with higher rate of depreciation has less leverage

3. RESEARCH METHODOLOGY

The present study uses Spearman's correlation and Regression techniques to analyze the sample data and the variables used in investigating and distinguishing the determinants of Capital Structure of Automobile, Cable and Electrical Goods, and Engineering Sectors of Pakistan. The existing literature provides empirical evidence for defining leverage as a function of industry specific variables e.g. Hijazi (2006), Kanwar (2007) and Rafiq et.al. (2008). The present study uses panel data Constant Coefficient Model.

$$LG = \beta_0 + \beta_1 (TG) + \beta_2 (SZ) + \beta_3 (PF) + \beta_4 (TX) + \beta_5 (LQ) + \beta_6 (CD) + \beta_7 (NDTS) + \varepsilon \quad \text{Equation \# 3.1}$$

Where

LG = Leverage

TG = Tangibility of assets

SZ = Firm Size

PF = Profitability

TX = Taxes

LQ = Liquidity

CD= Cost of Debt

NDTS=Non Debt Tax shield

ε = error term

Our model includes the tax provision, liquidity and cost of debt which are not used in the original model of Ranjan and Zingales (1995) and followed by Hijazi & Tahir (2006) and Mahmood (2003). Tax is very important variable in capital structure decisions and is considered as a basic element for Static Trade off Theory. The interest payment of the debt is tax deductible which provides a tax saving to the firms and the trade-off between costs and benefits of debt is not possible without tax factor. The firm is considered liquid if it can pay off its current liabilities over a period of time. Liquidity is significant feature of pecking order theory and is usually having negative relationship with leverage. The availability of liquid assets ensures the smooth day to day operational activities of the firm. The cost of debt is the interest cost of using long term debts and is significant part of the static trade off theory that influences the debt financing decisions of the firm.

4. ANALYSIS

The descriptive analysis of selected manufacturing sectors of Pakistan is presented in the tables 4.1 to 4.3. Table

4.4 reports the degree of association between the attributes of capital structure choice, the spearman's correlation has been estimated for the overall sample of three sectors. The liquidity and profitability are negatively correlated with leverage and are statistically significant at 1% level having values of -0.652 and -0.358 respectively. Size and liquidity, cost of debt and tax are positively correlated at 5% significant level.

4.5 Regression Analysis

The Equation 3.1 has been estimated for Automobile, Cable and Electrical Goods, and Engineering Sectors of Pakistan separately and the results are reported in Tables 4.5.1, 4.5.2 and 4.5.3 respectively. Table 4.5.1 presents the results of automobile sector which reflects that tangibility is positively influencing the leverage and is consistent with Static Trade off Theory with coefficient value of 0.083 which is not statistically significant. The firms of Automobile sectors with large asset structure prefer debt financing to avail the benefits of tax shield. Profitability is negatively related with leverage with coefficient value of -0.609 which is significant at 1% level. The profitable firms of Automobile Sector prefer to use retained earnings for financing the projects first and then debt financing if further funds are required and consider equity financing as a last resort. The behavior of firms in Automobile Sector is following the Pecking Order Theory.

Taxes are having positive relationship with leverage with coefficient value of 0.025 which is statistically significant, showing that the increase in tax provision encourages the firm to go for debt financing to avail the tax shield which is following the Static Trade off Theory. The non debt tax shield is negatively related with leverage and is insignificant which is consistent with literature, showing the firms having high depreciation expenses do not prefer debt financing as depreciation itself provides tax shield to firms. The liquidity variable has negative relationship with leverage which is statistically significant, showing that liquid firms prefer internal resources for financial needs and is consistent with theoretical model of Pecking Order Theory. Cost of Debt is negatively related with leverage and is statistically insignificant, indicating that the firms having high cost of debt avoid debt financing which is consistent with Static Trade off Theory. The size is positively related with leverage and is insignificant, reflecting the behavior of large firms in Automobile sector for debt financing as the bankruptcy costs form a small portion of the total value of the firm and there are less chances of bankruptcy for larger firm.

Table 4.5.2 reports the influences of independent variables on debt equity ratio with an R square of 86.9 %. Tangibility is negatively related to the leverage with coefficient value of -0.268 and is significant at 5% level. This means that the firms with large amount of fixed assets tend to obtain financing through equity as there are less asymmetrical information between the investors and manager and shares are not underpriced. Profitability is positively related to leverage with coefficient value of 0.213 which is statistically insignificant and is consistent with Signaling Theory of Capital Structure (Ross, 1977, Harris and Raviv, 1991) and the firms in Cable and Electrical Sector are not following the Pecking Order Theory. Taxes are having positive relationship with leverage with coefficient value of 0.005 which is not significant showing that the increase in tax rate encourages the firm to go for debt financing. Non debt tax shield of firm are negatively related with leverage and is statistically insignificant which refer the firms with heavy depreciation allowances prefer equity financing. Depreciation variable is having substitution effect for debt financing to provide tax shield.

The liquidity variable is negatively related with leverage and is significant at 1% level, indicating that the liquid firms prefer internal resources to debt and debt to equity financing which is consistent with Pecking Order Theory. Cost of debt is positively related with leverage and is statistically significant at 1% level which shows the behavior of firms of Cable and Electrical Goods Sector for debt financing even the cost of debt is increasing because the firms have no other option due to financial crunch in Pakistan. Size is negatively related to debt equity ratio with coefficient value -0.012 which is not significant. Table 4.5.3 reports the regression results for the Engineering Sector. Tangibility is positively influencing the leverage and is consistent with Trade off Theory with coefficient value of 0.111 which is insignificant. Profitability is negatively related with leverage with coefficient value of -0.631 which is also insignificant. The firms of Engineering Sector are following the Pecking Order Theory. Taxes are having negative relationship with leverage with coefficient value of 0.044 which is significant at 5 % level, indicating that the firms are not earning enough profits to provide them tax savings due to debt financing. Non debt tax shield is negatively related with leverage and is significant at 5 % level, pointing out that the increase in depreciation allowance decreases the need for debt financing due to non debt tax shield available because of depreciation expense.

Liquidity is also influencing the dependent variable, leverage negatively with coefficient value of -0.166 and is significant. The liquid firms of Engineering Sector do not prefer debt financing, they use internal resources first, if internal resources are not sufficient to meet their needs, they opt for equity financing as a last resort. Cost of Debt is negatively affecting the leverage with coefficient value of -1.129 and is statistically significant at 5% level, indicating that the firms avoid debt financing when cost of debt increases. Size is positively related to debt equity ratio with coefficient value 0.089 which is significant, showing that large firms of Engineering Sector prefer debt financing due to easy access of debt and less chances of bankruptcy.

4.6 Cross Sector Comparison

A cross sectoral comparison of Automobile, Cable and Electrical Goods, and Engineering Sectors is made using the data from Tables 4.5.1, 4.5.2 and 4.5.3. The R square of Automobile sector is 29.3% where as 86.9 % of Cable and Electrical Goods and 57.5 % of Engineering Sector depict the influences of independent variables i.e. tangibility, size of firm, profitability, tax provision, liquidity and cost of debt on the dependent variable i.e. leverage. The tangibility of Automobile and Engineering Sectors is positively related with leverage and is insignificant where as the tangibility of Cable and Electrical Goods Sector is negatively related with leverage and is significant at 5 % level. The firms of Automobile and Engineering Sectors with good asset structure prefer debt financing which is consistent with the Static Trade off Theory where as the behavior of firms in Cable and Electrical Goods Sector is inconsistent with the Static Trade off Theory as the tangible assets are considered poor source of collateral in emerging economies and follow Pecking Order Theory. The profitability of Automobile Sector is significant and Engineering sector is insignificant, both are negatively related with leverage where as the profitability variable of Cable and Electrical Goods Sector is positively related with leverage and is insignificant which indicate that the Automobile and Engineering sectors follow the Pecking Order Theory while Cable and Electrical Goods Sector follow the Static Trade Off Theory. The firms of Cable and Electrical Goods sectors have marginal profits, so they depend on debts to survive in the market.

The size of firms in Automobile and Engineering Sectors is positively related with leverage and the former is insignificant, both sectors follow Static Trade off Theory where as the size of firms in Cable and Electrical Goods Sector is negatively related with leverage which is also insignificant and is consistent with the results of Booth et.al, 2001 and Rajan and Zingales, 1995. The large size firms of Automobile and Engineering Sectors prefer debt financing as the financial distress cost is low for large firms where as the firms of Cable and Electrical Goods Sector have less asymmetrical information and the shares are not underpriced in the market, they prefer equity financing. The Tax variable of firms in Automobile is significant at 5 % and is insignificant in Cable and Electrical Goods Sectors both have positive relationship with leverage which show that the firms with high tax provision prefer debt financing which is consistent with the Static Trade Off Theory where as the tax variable of Engineering Sector is negatively related with leverage and is significant at 5 %. The behavior of firms in Engineering sector indicate that the cost of financial distress is higher with debt financing due to small in size as compare to other sectors. Therefore, increase in tax provision does not induce firms in Engineering Sector for further debt financing.

The non debt tax shield of Automobile, and Cable and Electrical Goods Sectors is negatively related with leverage and is insignificant but the Engineering Sector has same influence on leverage at 5% significant level. The non debt tax shield is a substitute for the tax benefits of debt financing and a firm with large non debt tax shield will use less debt financing. The firms of these sectors with reasonable depreciation allowance do not prefer debt financing when tax shield on depreciation is already available and is consistent with static trade off theory. The liquidity attribute of Automobile Sector, Cable and Electrical Goods, and Engineering Sectors is negatively related with leverage and is significant which shows that the firms of these sectors prefer to use retained earning first, then debt financing, followed by equity financing as a last resort for financing the projects which is consistent with Pecking Order Theory. Cost of debt of Automobile Sector and Engineering Sector is negatively related with leverage and the former is insignificant whereas the cost of debt of Cable and Electrical Goods is positively related with leverage and is significant. The increase in cost of debt of firms in Automobile and Engineering Sectors induce them to avoid debt financing due to bankruptcy cost but the behavior of firms in Cable and Electrical Goods Sector is different, they prefer debt financing even the cost of debt increases because they do not have any other option.

5. CONCLUSION

The results of industry specific determinants of capital structure of the selected sectors of Pakistan are consistent with Booth et.al.(2001) and Rajan and Zingales (1995) and suggest that there are two main theories which affect the attributes of capital structure of firm either positively or negatively.. The first one is the Static Trade off theory and the second one is Pecking order Theory. The financing behavior of firms of Automobile, Cable and Electrical Goods, and Engineering Sectors depend on the tax provision, asset structure, liquidity, non debt tax shield, size and profitability of the firms The study indicates some policy implications for the managers and investors of firms in these sectors. The large firms of Automobile Sector having good asset structure should finance their growth and current operations by debt financing and the firms with increasing cost of debt should use retained earnings and then equity financing if further funds are required. The large firms of Cable and Electrical Goods Sector may use debt financing even the cost of debt increases as they do not have any other option to survive in the market due to worse economic conditions. The estimated results are consistent in terms of Liquidity and Non Debt Tax Shield among the three sectors indicating that the firms with good liquidity position and large depreciation allowances should use retained earnings, followed by debt financing for growth and smooth operations, supporting the Pecking order Theory.

REFERENCES

- Bradley, Jarrell and Kim (1984), “ On the existence of an optimal capital structure: Theory and evidence”, *Journal of Finance*, Vol. 39, PP. 857-878.
- Booth, L., Aivazian, V., Demircuc-Kunt, A.E. and Maksimovic, V. (2001), “Capital Structures in Developing Countries,” *Journal of Finance*, Vol. 56, PP. 87-130.
- Bhaduri S., (2002), “Determinants of Capital Structure Choice: A Study of the Indian Corporate Sector”, *Applied Financial Economics*, PP. 655-665.
- Cassar, G. and Holmes, S. (2003), “Capital structure and financing of SMEs: Australian evidence”, *Accounting and Finance*, Vol. 43, pp. 123-47.
- Cespedes, Gonzalez and Molina (2009) ,“ Ownership and Capital Structure in Latin America”, *Journal of Business Research*, pp.1-7
- DeAngelo and Masulis (1980). “Optimal Capital Structure under Corporate and Personal Taxation”, *Journal of Financial Economics*, PP.3-29.
- Eldomiaty (2007), “Determinants of Corporate Capital Structure: Evidence from an Emerging Economy”, *International Journal of Commerce and Management*, PP.25-42.
- Fisher, Heinkel and Zechner (1989) ,“ Dynamic Capital Structure Choice: Theory and Tests”, . *Journal of Finance*, Vol. 44, PP. 19– 40.
- Fama and French (1998), “ Taxes, Financing Decision and Firm Value”, *Journal of Finance*, PP. 53.3.
- Frank and Goyal (2003), “Testing the Pecking Order Theory of Capital Structure,” *Journal of Financial Economics*, Vol. 67(2), PP. 217-248.
- Voulgaris, Asteriou and Agiomirgianakis (2004), “Size and Determinants of Capital Structure in the Greek Manufacturing Sector”, *International Review of Applied Economics*, Vol. 18, No.2, pp. 247-262.
- Graham, J.R. (2000), “How big are the tax benefits of debt?” *Journal of Finance*, Vol. 55, pp. 1901-41.
- Harris and Raviv (1991), “The Theory of Capital Structure,” *Journal of Finance*, Vol. 46,PP. 297-355.
- Hijazi and Yasir (2006), “ Determinants of Capital Structure: A Case for the Pakistani Cement Industry”, *The Lahore Journal of Economics*, 11:1 , pp. 63-80
- Jensen and Meckling (1976), “ Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure”, *Journal of Financial Economics*, V. 3, No. 4, 305– 360.
- Jong, Nguyen and Kabir (2008), “Capital Structure Around the World: The role of firm and country specific determinants”, *Journal of Banking & Finance*, Vol. 32, PP. 1954-1969
- Kanwar. A.A. (2007), “Booth Revisited: Identifying The Determinants of Capital Structure in The Sugar Sector”, *Market Forces*, PP.101-126.
- Modigliani and Miller (1958), “ The cost of capital, corporation finance and the theory of investment”, *American Economic Review*, Vol. 48,PP. 261-297.
- Myers, and Majluf (1984), “Corporate Financing and Investment Decisions When Firms Have Information Investors Do Not Have”, *Journal of Financial Economics*, Vol. 13, PP. 187-222.

- Mahmud, M. (2003), “The Relationship between Economic Growth and Capital Structure of Listed Companies: Evidence of Japan, Malaysia, and Pakistan”, The Pakistan Development Review, PP. 727-750.
- Mitton (2007), “ Why Have Debt Ratio Increased of Firms in Emerging Markets”, European Financial Management, Vol. 14, pp. 127-151.
- Qureshi and Azid (2006), “Did They Do It Differently? Capital Structure Choices of Public and Private Sectors in Pakistan, The Pakistan Development Review, PP. 701-709.
- Rahman, (1990), “Industry and Size As Determinants of Capital Structure Decision In Pakistan”, Pakistan Management Review, PP. 15-26.
- Rajan, R. and Zingales, L (1995), "What Do We Know about Capital Structure? Some Evidence from International Data," Journal of Finance, Vol.50, PP.1421-1460.
- Rafiq, Iqbal and Atiq (2008), “The Determinants of Capital Structure of the Chemical Industry in Pakistan, The Lahore Journal of Economics, PP. 139-158.
- Shah and Hijazi (2004), "The Determinants of Capital Structure in Pakistani Listed Non-Financial Firms," The Pakistan Development Review, 43.
- Titman and Wessels (1988), "The Determinants of Capital Structure Choice", Journal of Finance, Vol.43, PP. 1-19.

Table 2.1 Summary of Expected Results

Where

“+” means that leverage increases with the determinant.

“-” means that leverage decreases with the determinant.

Determinants	Proxy used in this study	Expected relationship	References for results
Tangibility of Assets	Total Gross Fixed Assets/ Total Assets	+	Meckling’s (1976), Myer (1977), Titman and Wessels (1988), Rajan and Zingales(1995), Fama and French (2000), Tariq and Hijazi (2006)
Size of firm	Log of Total Sales	-	Rajan and Zingales (1995)
Profitability	EBT/ Total Assets	-	Rajan and Zingales (1995), Shah and Hijazi (2005)
Taxes	Tax provision/ Net profit before taxes	+	MM (1963), Rajan and Zingales (1995), Mackie-Mason (1996), Walsh and Ryan (1997)
Non-Debt Tax Shield	Depreciation / Total Assets	-	Cordes & Sheffrin (1983), Shenoy & Koch (1996)
Liquidity	Current Assets/ Current Liabilities	-	Myers (1977), Barclay & Smith (1995), Anderson & Makhija (1999)
Cost of Debt	Interest before Tax/ Long term debts	-	Naka mura and Nakamura (1982)

Table 4.1 Automobile Sector

	N	Minimum	Maximum	Mean	Std.Deviation
Leverage	110	.00	1.69	.5894	.32529
Tangibility	107	.00	2.00	.5977	.38459
Profitability	110	-.31	1.00	.1190	.17327
Taxes	110	-1077	24.82	.4388	2.36748
Liquidity	107	.18	31.64	1.8741	3.11880
Cost of Debt	106	.00	3.04	.3463	.52405
Size	110	.00	24.65	20.8123	2.90611
NDTS	104	-.02	.08	.0271	.01845

Table 4.2 Cable and Electrical Goods

	N	Minimum	Maximum	Mean	Std. Deviation
Leverage	29	.00	1.09	.6672	.19759
Tangibility	29	.00	.66	.3871	.21228
Profitability	29	-.08	.16	.0546	.05968
Taxes	29	-1.26	17.66	1.9580	4.86101
NDTS	28	.00	.06	.0207	.01429
Liquidity	28	.48	1.85	1.1033	.28581
Cost of debt	28	.00	20.92	1.0949	3.90739
Size	30	.00	23.81	19.5962	5.58320

Table 4.3 Engineering Sector

	N	Minimum	Maximum	Mean	Std. Deviation
Leverage	45	.01	1.57	.6099	.34799
Tangibility	45	.07	1.13	.5384	.26861
Profitability	45	.00	.30	.0971	.07412
Taxes	45	-1.21	13.28	.5664	2.04624
NDTS	45	.00	.05	.0218	.01219
Liquidity	45	.84	4.16	1.7526	.89940
Cost of debt	45	.00	.42	.1561	.13066
Size	45	16.95	23.00	20.6139	1.13923

Table 4.4 Spearman's Correlation Coefficients

	LG	TG	PF	TX	NDTS	LQ	CD	SZ
Leverage (LG)	1.000	.002	-.358**	-.110	-.127	-.652**	-.075	.049
Tangibility (TG)	.002	1.000	-.322**	-.231**	.554**	-.223**	-.032	-.491**
Profitability (PF)	-.358**	-.322**	1.000	.308**	.025	.497**	.185*	.517**
Taxes (TX)	-.110	-.231**	.308**	1.000	-.016	.214**	.163*	.377**
NDTS	-.127	.554**	.025	-.016	1.000	-.053	.212**	-.094
Liquidity (LQ)	-.652**	-.223**	.497**	.214**	-.053	1.000	-.042	.178*
Cost of Debt (CD)	-.075	-.032	.185*	.163*	.212**	-.042	1.000	.229**
Size (SZ)	.049	-.491**	.517**	.377**	-.094	.178*	.229**	1.000

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

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

Table 4.5.1 Regression Analysis of Automobile Sector

Variable	B	Std. Error	t value	Sig
(Constant)	.426	.364	1.170	.245
Tangibility	.083	.125	.667	.507
Profitability	-.609	.177	-3.448	.001**
Taxes	.025	.011	2.207	.030*
Non-Debt Tax Shield	-.465	1.918	-.243	.809
Liquidity	-.032	.010	-3.264	.002*
Cost of debt	-.073	.055	-1.321	.190
Size	.014	.015	.905	.368

** . Significant at the 0.01 level.

* . Significant at the 0.05 level.

Model Summary

R Square	.293
Adjusted R Square	.242
F-Statistics	5.701

Table 4.5.2 Regression Analysis of Cable and Electrical Goods Sector

Variable	Beta	Std. Error	t value	Sig
(Constant)	1.358	.217	6.258	.000
Tangibility	-.268	.099	-2.718	.013*
Profitability	.213	.424	.502	.621
Taxes	.005	.003	1.598	.126
Non-Debt Tax Shield	-.135	1.268	-.106	.916
Liquidity	-.302	.060	-5.038	.000**
Cost of debt	.016	.004	4.002	.001**
Size	-.012	.011	-1.111	.280

** . Significant at the 0.01 level.

* . Significant at the 0.05 level.

Model Summary

R Square	.869
Adjusted R Square	.823
F-Statistics	18.888

Table 4.5.3 Regression Analysis of Engineering Sector

Variable	Beta	Std. Error	t value	Sig
(Constant)	-.536	.945	-.567	.574
Tangibility	.111	.222	.500	.620
Profitability	-.631	.724	-.872	.389
Taxes	-.044	.019	-2.266	.029*
Non-Debt Tax Shield	-8.829	3.984	-2.216	.033*
Liquidity	-.166	.054	-3.067	.004*
Cost of debt	-1.129	.337	-3.346	.002*
Size	.089	.042	2.096	.043*

** . Significant at the 0.01 level.

* . Significant at the 0.05 level.

Model Summary

R Square	.575
Adjusted R Square	.495
F-Statistics	7.159