A STUDY ON THE FACTORS INFLUENCING THE LEVERAGE OF INDIAN COMPANIES

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Abstract: *The amount of leverage in the firm's capital structure – the mix of long term debt and equity maintained by the firm – can significantly affect its value by affecting return and risk. Unlike some causes of risk, management has reasonable control over the risk introduced through the use of leverage. Poor capital structure decisions can result in higher expected cost of capital, thereby lowering the net present values of the projects. Capital structure is determined by several financial and non financial factors of a firm. Previous researchers have listed the factors which will influence the leverage decisions. This study examines the influence of growth, profitability, liquidity and dividend policy of a firm on its leverage. The study was conducted by taking 40 Indian companies from four industrial sectors. It was found that all the four independent variables have impact on the capital structure of firms in different industries. The regression analysis revealed that profitability and liquidity are the two major factors which have significant influence on the debt equity ratio of Indian companies.*

Keyword *Financial Leverage, Growth, Profitability, Liquidity, Dividend Payout and Operating Spread.*

INTRODUCTION

Capital structure is one of the most complex areas of financial decision making because of its interrelationship with other financial decision variables. Effective capital structure decisions can lower the cost of capital, resulting in higher net present values and more acceptable projects, thereby increasing the value of the firm. Because of its effect on value, financial managers should cautiously decide on the proportion of different sources of funds to be used in the total capital of a firm. Capital structure has been a focus of extensive research in corporate finance.

The capital structure is said to be optimum when the cost of capital is minimum and the total value of the firm is maximum. The level of financial leverage that is acceptable for one industry or line of business can be highly risky for another, because different industries and lines of business have different operating characteristics. Every firm should try to design an optimum capital structure, but identifying the precise percentage of debt that will maximize price per share is almost impossible. However, there are a number of financial and non-financial items which will be considered by the finance managers before deciding on the capital structure. Previous researchers have listed a number of financial items which will influence the leverage of a firm. But there are very few studies which have analyzed the extent to which these factors influence the leverage. This study was conducted to measure the influence of growth, profitability, liquidity and dividend growth on the capital structure of Indian companies belonging to different industrial sectors.

LITERATURE REVIEW

Modigliani, H and Miller, M H (1958) showed that in a frictionless world, financial leverage is unrelated to firm value, but in a world with tax-deductible interest payments, firm value and capital structure are positively related. Miller, M (1977) added personal taxes to the analysis and demonstrated that optimal debt usage occurs on a macro level, but it does not exist at the firm level. Interest deductibility at the firm level is offset at the investor level. Further on, Durand, David (1959) argued that capital structure was relevant to the determination of the value of the firm. Studies on capital structure of Indian industries are inconclusive and often conflicting (Ashok Kumar Panigrahi, 2010) and observes that debt due to its tax deductibility is a prominent determinant of the cost of capital and the composition of capital structure. Another study among the the earliest comprehensive studies (S. K. Chakraborty., 1977) on the capital structure of Indian corporate sector showed that the effect of profitability, total assets and capital intensity on debt equity ratio was measured and it was found that profitability has negative impact while total assets and capital intensity have shown positive impact on debt equity ratio. Bhat, Ramesh Kumar, (1980) argues that the leverage ratio is very much influenced by business risks measured in tems of variability in earnings, profitability, debt service capacity and dividend payout ratio.

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GROWTH

The agency cost theory and pecking order theory explain the contradictory relation between the growth rate and capital structure. Agency cost theory suggests that equity-controlled firms have a tendency to invest sub-optimally to expropriate wealth from the enterprises' bondholders and thus the agency cost is more likely to be higher for firms in growing industries which have more flexibility in their choice of future investment. And therefore, growth rate is negatively related with long-term debt level (Jensen, Michael C. and Meckling, William H, 1976. Further, Kim, W and Sorensen, E (1986) backed up the above conclusion by the empirical studies. Pecking order theory, contrary to the agency cost theory, shows the positive relation between the growth rate and debt level of enterprises. Sinha, Siddharth (1992) explained that a higher growth rate implies a higher demand for funds, and, *ceteris paribus*, a greater reliance on external financing through the preferred source of debt. AQ 1: Further, pecking order theory contends that management prefers internal to external financing and debt to equity if it issues securities (Myers, Stewart C., 1984).

Profitability

The static trade-off hypothesis argues for the low level of debt capital of risky firms (Myers, Stewart C., 1984). The higher profitability of firms implies higher debt capacity and less risk to the debt holders and thus capital structure and profitability are positively associated, but pecking order theory suggests that this relation is negative. since as stated earlier, firm prefers internal financing and follows the sticky dividend policy. If the internal funds are not enough to finance financial requirements of the firm, it prefers debt financing to equity financing (Myers, Stewart C., 1984). Thus, the higher profitability of the firm implies the internal financing of investment and less reliance on debt financing. As observed by Baral, Keshar J (2004), the studies of Titman and Wessels (1988), Kester (1986), Friend and Hasbrouck (1989), Friend and Lang (1988), Gonedes and others (1988) show the negative relation between the level of debt in capital structure and profitability.

Liquidity

According to Modigliani and Miller (1958, 1963) variables that would reduce the net cost of equity, such as increased liquidity, would therefore induce a greater reliance on equity financing. Even Jensen's (1986) free cash flow theory suggested thst there is a positive relation between liquidity and debt ratio as cash rich firms should have a tendency to acquire additional debt. The positive and negative aspects of corporate liquidity have been studied by Myers and Rajan (1998). Asset liquidity bestows a benefit in the sense that it makes it possible for the firm to seize unforeseen opportunities or to survive during periods of poor business conditions. However, liquidity has a disadvantage that it makes it difficult for firm insiders to commit to a given course of actions.

Dividend Payout

According to Al-Najjar, Basil (2011) the correlation between dividend policy and debt equity ratio is significant and dividend is an influential factor for designing capital structure of a firm. The bankruptcy costs theory agrees for adverse relation between the dividend payout ratio and debt level in capital structure. According to the bankruptcy cost theory, the low bankruptcy cost implies the high level of debt in the capital structure. However, the pecking order theory shows the positive relation between debt level and dividend payout ratio Baral, Keshar J 2004).

Operating Spread

Penman, Stephan (2001) suggested that positive operating spread indicates a favourable leverage and a negative operating spread indicates an unfavourable leverage. Thus, if a firm has no borrowing at all, then return on equity is equal to return on operating assets. Increasing leverage by borrowing or repurchasing equity, increases return on equity if the firm's spread is positive and decreases if the spread is negative.

OBJECTIVES

The objectives of this study are as follows

- To study the impact of broad determinants of capital structure in the leverage of Indian companies.
- To study and compare the financial leverage and operating spread of the selected industries.
- To study the leverage between selected industries to find out whether there is any inter industry variation for the same.

Variables

Growth, profitability, liquidity and dividend policy are the independent variables. Growth is defined in term of change of profit after tax over the years. Profitability is measured by return on net worth using the formula profit after tax/net worth. Current ratio calculated using the formula current assets / current liabilities is used to measure the liquidity. The dependent variable, capital structure (leverage) is measured

as the ratio of debt and equity

RESEARCH METHODOLOGY

The study is done on 40 Indian companies selected from four different industrial sectors namely engineering, personal care, pharmaceuticals and constructions. Ten companies are taken from each industry for the study. The companies in each industry are selected on the basis of rank of market capitalization. The top ten companies from each industry are selected. The data is collected from CMIE database for a period of 5 years from 2006 to 2010. Multiple regression is used to analyze the data.

Analysis and Interpretation

Leverage is one way a company can increase its returns. When a company raises debt, it incurs borrowing cost. The difference between this borrowing cost and the returns from its operating assets is the operating spread for the company. When this operating spread is positive, the company has a favourable leverage and it is able to give maximum returns to its shareholders. Table 1 shows the average leverage of the industries selected and the respective operating spread.

Table 1: Comparison of Financial Leverage and Operating Spread of Selected Industries

Industry	DE	Operating Spread
Engineering	0.37	2.69
Personal care	0.35	48.00
Pharmaceuticals	1.02	15.45
Construction	1.5	-7.27

Source: CMIE database

Inference

Table 1 shows that personal care industry has the maximum spread but it has the least Debt Equity ratio. When the industry has a high spread, it can utilize the gap and increase its leverage and thereby maximize the returns of shareholders. Same is the case with pharmaceutical industry. Construction has an unfavourable leverage. When the leverage is increased the firm only finds more negative returns.

Engineering Industry

The result of regression analysis shows that the determinants have influence on capital structure. The analysis shows that liquidity and dividend have a significant influence on capital structure of companies in engineering industry, out of which liquidity has more influence on capital structure. A negative regression coefficient for dividend shows that a firm with more borrowed fund gives fewer dividends.

Table 2: Result of Regression Analysis

Industry	Influencing Variables	p Value	Beta
Engineering	Liquidity	0.014	-0.769
	Dividend	0.042	-0.546
Personal Care	Profitability	0.018	-0.699
Pharmaceuticals	Growth	0.024	-0.673
Construction	Growth	0.001	1.168

Source: CMIE database

Personal care Industry

Regression analysis shows that the determinants have influence on capital structure. Profitability has a significant influence on the capital structure of firms in personal care industry. A negative beta value implies that firms with more return on net worth go for less borrowed funds. Less profitable firms can go for more leverage as the operating spread for this industry is very high.

Pharmaceutical Industry

Growth has negative impact on the capital structure of firms in pharmaceutical industry. Only growth is a significant factor in determining the capital structure and the other factors remain insignificant. The analysis shows that firms with high growth in pharmaceutical industry rely more on debt source of financing. The high growth firms can thus maximize the wealth of shareholders as the industry has a high operating spread.

Construction Industry

Analysis shows that growth has a significant positive impact on the capital structure of firms in construction industry. It means that high growth firms use more of debt in their capital structure. Growing companies in this sector are relying more on external sources of funds.

DETERMINANTS OF CAPITAL STRUCTURE OF INDIAN INDUSTRIES

To identify the influence of each intervening variable relating to the performance of the firm regression line has been fitted considering debt equity ratio as the dependent

Table 3: Determinants of Capital Structure for all Selected Industries

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.547a	.299	.219	1.37902

a. Predictors: (Constant), dividend, Growth, profitability, Liquidity

Table 4: Significance of the model

ANOVAb						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28.350	4	7.087	3.727	.013a
	Residual	66.560	35	1.902		
	Total	94.909	39			

a. Predictors: (Constant), dividend, growth, profitability, Liquidity

b. Dependent Variable: DE

Table 5: Influence of various determinants on capital structure

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.030	.502		4.045	.000
	growth	.000	.000	-.192	-1.288	.206
	profitability	-.028	.010	-.442	-2.797	.008
	liquidity	-.246	.126	-.325	-1.952	.059
	dividend	-.014	.114	-.019	-.122	.904

a. Dependent Variable: DE

variable and growth, profitability, liquidity and dividend policy as independent variables.

INTERPRETATION

The adjusted R square for the equation was found to be 0.219 that explanatory variables explain hardly 22% of variation in dependent variable. This indicated a very weak prediction for the variables. The variables profitability and liquidity have significant impact on capital structure. The relationship shown in the model is inverse in nature. The analysis shows that most of the selected companies' capital structure is influenced by return on net worth and liquidity. Highly profitable and liquid firms use less debt in their capital structure.

FINDINGS

- Though some industries have the capability of raising funds in order to maximize wealth of shareholders, their debt equity ratio projects a low degree of leverage.
- Highly profitable firms use more of equity in their capital structure.
- Highly liquid firms use less debt in their capital structure as they have enough funds to fund their activities.
- The determinants of capital structure are industry specific.
- For companies in engineering industry, liquidity and dividend are major influential factors of their capital structure. Both are inversely related to capital structure.
- Profitability and liquidity affect the capital structure of companies belonging to personal care industry. These two are also inversely proportional to the capital structure of companies in the industry.
- Growth has a little impact on capital structure of pharmaceutical industry and no other variables have any impact.
- In construction industry also, which is one of the highly leveraged industries in India, growth is a significant factor in their capital structure decisions. In this industry, high growth firms use more of debt in

their capital structure.

CONCLUSION

The study shows that the industries selected maintain different levels of debt equity ratio and operating spread. Companies with high operating spread is maintaining low DE ratio. This indicates that companies are missing their opportunity to invest more and earn more returns to their shareholders.

The result of the study indicated that there is significant variation in the determinants of debt ratio in the industrial sectors selected for the purpose of study. The regression model showed that the determinants are industry specific, which implies that the weight of the explanatory variables varies from sector to sector. In three of the four industries selected, the significant determinants were inversely related to leverage. In the regression summary constituting all the 40 companies from 4 industries, liquidity and profitability significantly influence leverage. Most of the findings of the study are consistent with early studies.

It can be concluded that determinants of capital structure vary from industry to industry. It is therefore argued that the financial manager must consider the factors and carefully analyse sector specific attributes before attempting to achieve an optimal capital structure.

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