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   INTRODUCTION

   REVIEW OF LITERATURE

   NEED/IMPORTANCE OF THE STUDY

   STATEMENT OF THE PROBLEM

   OBJECTIVES

   HYPOTHESES

   RESEARCH METHODOLOGY

   RESULTS & DISCUSSION

   FINDINGS

   RECOMMENDATIONS/SUGGESTIONS

   CONCLUSIONS

   SCOPE FOR FURTHER RESEARCH

   ACKNOWLEDGMENTS

   REFERENCES

   APPENDIX/ANNEXURE

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BOOKS

- Bowersox, Donald J., Closs, David J., (1996), "Logistical Management." Tata McGraw, Hill, New Delhi.
- Hunker, H.L. and A.J. Wright (1963), "Factors of Industrial Location in Ohio" Ohio State University, Nigeria.

CONTRIBUTIONS TO BOOKS

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

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- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

CONFERENCE PAPERS

- Garg, Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19–22 June.

UNPUBLISHED DISSERTATIONS AND THESES

- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, Kurukshetra University, Kurukshetra.

ONLINE RESOURCES

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WEBSITES

- Garg, Bhavet (2011): Towards a New Natural Gas Policy, Political Weekly, Viewed on January 01, 2012 http://epw.in/user/viewabstract.jsp

COST OF CAPITAL, CAPITAL STRUCTURE AND VALUE OF FIRM

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ABSTRACT
The basic objective of the study was to find the relationship between cost of capital, capital structure and value of firm. Bivariate correlation technique, t-test and F-test was applied to test the significance of difference in capital structure. 30 companies listed on BSE Index were selected in the sample. The data for a 10 year period (2001-02 to 2010-11) are used. The main source of secondary data is Capitaline plus database. Primary data was collected through a questionnaire, mailed to the sample companies through post and e-mail. The difference in capital structure of different companies whether they belong to the same industry group or different groups, was found to be statistically significant. Co-efficient of correlation between cost of capital and capital structure was found to be negative. The results support the view that increase in leverage decreases the cost of capital because debt is a cheaper source than equity. But the results are not statistically significant.

KEYWORDS
cost of capital, equity, debt, capital structure, value of firm.

INTRODUCTION
Corporate finance was considered a part of economics till 19th century. The role of financial management has undergone a tremendous change during the last century. The word 'Finance' was used in the same sense as the word 'Capital' by the economists. But in the early part of 19th century, corporate finance emerged as a separate field.

Initially, it dealt with only the instruments, institutions and procedural aspects of the capital markets. Technological innovations and establishment of new industries, resulting in industrial revolution sweeping the world over, created a need for more funds. This prompted the study of finance to focus on liquidity and financing of the firm. During this period, the capital markets were primitive and the investors were reluctant to purchase stocks and bonds. So finance concentrated heavily on legal issues related to the issuance of securities only. This trend continued till 1920s.

The great recession of 1930s, caused a large number of business failures in the USA. So, the focus of finance shifted to bankruptcy or reorganization of capital market. Emphasis shifted from expansion to a descriptive, institutional subject viewed from the outside rather than the inside.These developments led to significant contributions from financial researchers and academicians. Harry Markowitz(1952) developed the portfolio theory which is widely applied even today. This theory deals with the risk and return characteristics of a security and advocates that an investor can reduce his /her overall risk by having securities of different risk and return characteristics in his / her portfolio. Thus given one's risk aversion level, one can choose a portfolio that gives maximum possible return.

In another significant work, David Durand(1959) developed two theories of capital structure viz., Net operating income (NOI) and Net Income (NI) theories. These theories were based on the assumptions of (i) Perfect capital markets, (ii) No growth in operating income, (iii) 100% dividend payout ratio, (iv) Debt and stock can be sold to repurchase the other security, (v) Constant Business risk (vi) Homogeneous expectations of investors, and (vii) Cost of debt, K_d, remains constant. In NOI theory, he suggested, cost of equity capital increased with leverage, but keep the Weighted Average cost of Capital (WACC) remained constant. Thus, both the value of a firm and it's cost of capital were independent of its capital structure.

The NI theory suggested that costs of debt and equity remained constant irrespective of change in degree of leverage. Since cost of debt is less than cost of equity, increase in leverage will gradually decrease the WACC. As a result, the value of a firm increases with increase in leverage.

Late 1950's witnessed significant developments in the field of corporate finance. Financial analysis techniques were designed to help the firms in maximizing their profits. Growth of stock markets, development of computers, valuation models and models for managing inventories, cash, accounts receivable and fixed assets, played an important role in shifting the focus from outside to inside point of view. Financial decisions within the firm were recognized critical issues in corporate finance.

These developments completely changed the role of a financial manager. Instead of playing a secondary role in the organization, he was required to play a more important, positive and responsible role. He was confronted with the problem of how to maximize the value of the firm. So the scope of his activities increased significantly. At the time of these rapid changes in corporate finance, came the most stunning, controversial and path breaking works of Franco Modigliani and

Merton Miller (M-M). They can rightly be called the fathers of modern finance. Their path breaking articles transformed the study of finance from an institutional orientation to an economic orientation.

RESEARCH METHODOLOGY

OBJECTIVES OF THE STUDY

The basic objective of the study was to find the relationship between cost of capital, capital structure and value of firm.

HYPOTHESES

Based on the objectives, following hypothesis have been framed and tested.

HYPOTHESIS-1

H_{o1} = There is no significant relation between cost of overall capital and capital structure.

HYPOTHESIS-2

H_{o2} = There is no significant relation between cost of overall capital and value of firm.

HYPOTHESIS-3

H_{o3} = There is no significant relation between capital structure and value of firm.

STATISTICAL ANALYSIS

In their works, M-M asserted that when the capital market is perfect, value of a firm is independent of its capital structure. When corporate taxes exist and interest payments are tax exempted, their exists on optimal capital structure which is determined by the trade off between tax advantages of debt and the disadvantages associated with.

Some empirical studies have been done to find out the effect of capital structure on cost of capital. However not much systematic work has been done on the proposed topic so far. The present study is a humble attempt to determine an optimal capital structure in an imperfect market.

It should, however, be noted at the outset that there are many statistical problem that make the determination of optimal capital structure a formidable task. The first and major problem is to identify those explanatory variable which, in one way or other, influence the market value of the firm. The second problem relates to the measurement of variables.

The market value of a firm is influenced by a number of factors many of which are not measurable as they are qualitative in nature. It is not possible to measure the magnitude and effects of factors like reputation of promoters, management of the company, economic and political conditions, roles of bulls and bears in the stock market and government policies etc.

The third problem is the statistical problem. Since the value of a firm is dependent upon a number of factors whose effects cannot be segregated, so a model showing the exact relationship between capital structure and value of a firm can't be developed.

So, in the absence of a well defined model on optimal capital structure, bivariate correlation technique was used to find the nature of relationship between (i) capital structure and cost of capital, (ii) cost of capital and value of the firm and (iii) capital structure and value of the firm. Then, t-test was applied to test the significance of coefficient of correlation.

MEASURE OF VARIABLES

The variables used in this study are as follows:

1. MARKET VALUE OF EQUITY (E):

E=No. of shares outstanding at the end of an accounting year x Average market price per share

Where No. of share= total equity capital/face value per share

Average price= mean value of monthly high and low price/share during the accounting year.

2. TOTAL MARKET VALUE (V): IT IS GIVEN BY

V=Market value of equity + Book values of preference share capital and debt. Preference shares and debt are taken at book value because there is no significant yearly fluctuations in the prices of these sources of capital.

3. COST OF CAPITAL (Ka)

As we know that Ka represents the weighted average of all the component costs, so it is determined as

$$\mathrm{Ka} = \frac{Kp.P + Kd.D + Ke.E}{P + D + E}$$

Where

Kp, kd and ke are costs of preference capital, debt and common stock (equity) respectively,

P, D and E are the market values of preference capital, debt and common stock respectively.

The various costs were calculated as follows:

(i) Cost of preference capital (Kp)

$$\mathrm{Ka} = \frac{Preference\ dividend}{Price\ of\ preference\ share}$$

(ii) Cost of debt (Kd)

$$\mathrm{Kd} = \frac{Interest\ paid}{Total\ debt} + (1 - t)$$

$$= \frac{I}{D}\ (1 - T)$$

Where T is the corporate tax rate.

(iii) Cost of equity (Ke)

Ke was calculated, using capital asset pricing model, as follows:

Ke= Rf+β (RM-Rf)

Where β = Beta Co-efficient

Rf=risk free rate

β represents the systematic risk associated with security. It's value is calculated as

$$\beta = \frac{Cov.(Rj, Rm)}{Var\ (Rm)}$$

Rm= Return on the market portfolio

4. LEVERAGE

The most commonly used measures of leverage are:

(i) ratio of debt to equity (L1)

(ii) ratio of debt to total capital (L2)

Thus L1 = D/E and L2 = D/(D+E)

Their relationship can be shown as:

$$\mathrm{L1} = \frac{\mathrm{L2}}{1-\mathrm{L2}} \mathrm{and} \mathrm{L2} = \frac{\mathrm{L1}}{1+\mathrm{L1}}$$

Out of the two measures, shown above, L2 will be used for empirical analysis, because when all debt situation reaches, L1 will not have any meaningful value but L2 will have as shown below:
When D=0 (E100%) L1 = 0 and L2 = 0
When D=100% (E=0) L1 = ∞ and L2 = 1

SAMPLE SELECTION

In order to test the hypotheses, 30 companies listed on BSE Index were selected in the sample. The study is not limited to a particular industry group. So they have different characteristics. The data for a 10 year period (2001-02 to 2010-11) are used. The main source of secondary data is Capitaline plus database. The criteria for selecting the sample firms were;

(1) Availability of data on the market price of share and other financial data for all the 10 years;
(2) The company must be listed on BSE.

So, on this basis, seven companies have been excluded. Four of them are banks and three are excluded due to non-availability of data for the last 10 years.
Primary data was collected through a questionnaire, mailed to the sample companies through post and e-mail. The questionnaires were sent to all 30 companies but since their response was poor, so the officials were contacted personally. In this manner, the data could be collected for a total 12 companies. Thus the response rate works out to be 40%.
The industry wise breakup of the companies is as follows:

Sr. No.	Type of Industry	No. of Sample companies	Nos. of Companies
1	Telecom	1 each	1
2	Capital Goods, FMCG, Healthcare, Power	2 each	8
3	Information Technology, Oil & Gas	3 each	6
4	Metal, Metal (Products & Mining), Transport Equipment	4 each	8
	Total Companies		23

The market value equity, total market value, cost of capital, debt to total capital ratio, debt equity ratio, cost of debt, cost of equity capital have been computed for each year from 2001-02. The hypotheses have been tested using the information obtained from this analysis.

DISCUSSION

OVERALL COST OF CAPITAL AND CAPITAL STRUCTURE

The bivariate correlation between cost of capital and capital structure is shown in table 1. Cost of capital, in general, has been found to be negatively related with capital structure thus supporting the theory that cost of capital decreases with increase in debt to total capital ratio because cost of debt is less than that of equity and interest payments are tax exempted.
63% of the companies have shown a negative relationship between cost of capital and capital structure. Out of 63%, 73% show that relationship is not statistically significant whereas 27% of the companies show a positive relationship, though the relationships are not statistically significant in case of 89%. It means that changes in cost of capital are not of high degree when a company changes its capital structure. The results are shown in table no 1. Figure no 1 depicts their relationship. The statistically insignificant value of ‘r’ can be explained by the following reasons:

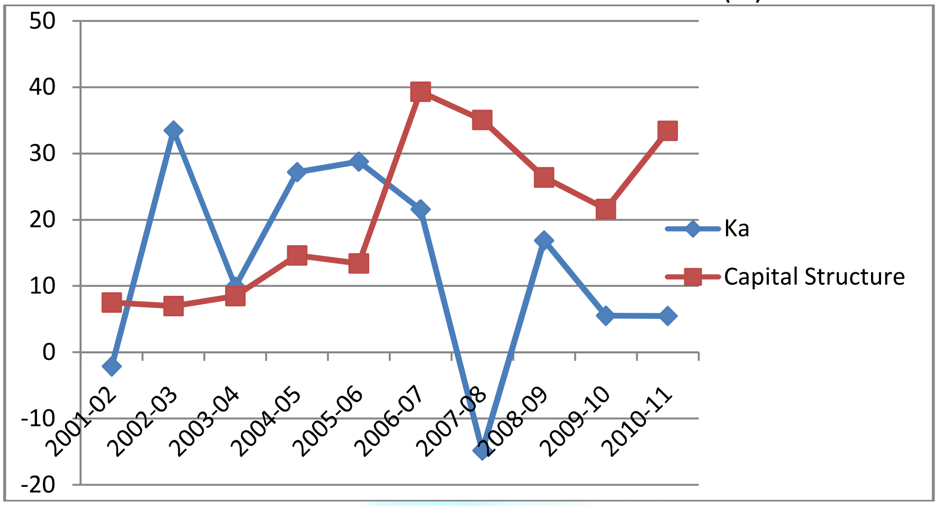
(i) Indian companies have no specific mechanism or model to compute the specific costs of capital, particularly the cost of equity capital and the average cost of capital. This became apparent when in responses to a question, “How do you compute the costs of capital”? none of the companies suggested a definite/specific mechanism to compute these costs.
(ii) Cost of capital is not the only determinant of capital structure, though it is one of the most important factors affecting the capital structure decisions. Since the effects of other factors cannot be segregated, so an exact relationship between cost of capital and capital structure could not be established.
(iii) Cost of debt in India is quite high in comparison to developed countries.

TABLE 1: BIVARIATE CORRELATION BETWEEN COST OF CAPITAL AND CAPITAL STRUCTURE

Company number	R
1	0.142599
2	0.096455
3	-0.01507
4	0.030811
5	-0.67732*
6	0.309329
7	-0.0306
8	0
9	0.535481
10	0.554209*
11	-0.20073
12	-0.60712*
13	-0.45839
14	-0.34489
15	0.356532
16	-0.2713
17	-0.12421
18	0.110034
19	-0.45784
20	-0.65812*
21	-0.27674
22	-0.36459
23	-0.58717*

** and * indicates significance at 1% and 5% level of significance respectively.

FIGURE: 1 – GRAPH SHOWING THE RELATIONSHIP BETWEEN OVERALL COST OF CAPITAL (KA) AND CAPITAL STRUCTURE



These results are supported by the response in the questionnaire. The question asked was, "Are cost of capital and capital structure related?" All replied that they are related. When asked "How are they related?" 83% replied that they are negatively related up to some level, while 8% replied that they are positively related. This difference of opinion was on account of different interpretation of cost of capital. The later respondents opined that cost of capital represents investor's expected rate of return. So as D/C ratio increases, this value increases. The former respondents accepted traditional view that initially increase in D/C ratio will decrease cost of capital. And since except Jindal steel and power ltd, none of the sample companies was found to be highly leveraged, so cost of capital and capital structure show a negative relationship. Jindal steel and power ltd. has a high D/C ratio (mean value 0.56).

The other main findings on cost of capital, based on the responses to questionnaire, are as follows:

(i) Cost of capital plays an important role in deciding the source of finance (Q 12). The selection of source is done on the following order:

	Sources	**Responses**
1.	Selecting a cheaper source	10
2.	Which has a longer maturity period	10
3.	Source ensuring higher ROI	7
4.	Which provides the required capital	4
5.	Which changes the leverage	4
6.	Source giving greater premium on security	3

The table clearly shows that for selecting a source of finance, cost of capital is the most important factor.

(ii) All the companies have unsecured debt in their capital structure, whose cost of capital is more than that of secured debt. This is because of the fact that unsecured debt is borrowed for short term and raised from money markets. The rate prevailing in these markets is higher than that in the capital markets.

To conclude it should be said that if the interest rates are lowered in the Indian debt market, the companies employ a scientific model to determine the cost of capital and the stock markets are made more efficient, a significant relationship between cost of capital and capital structure could be established.

OVERALL COST OF CAPITAL AND VALUE OF THE FIRM

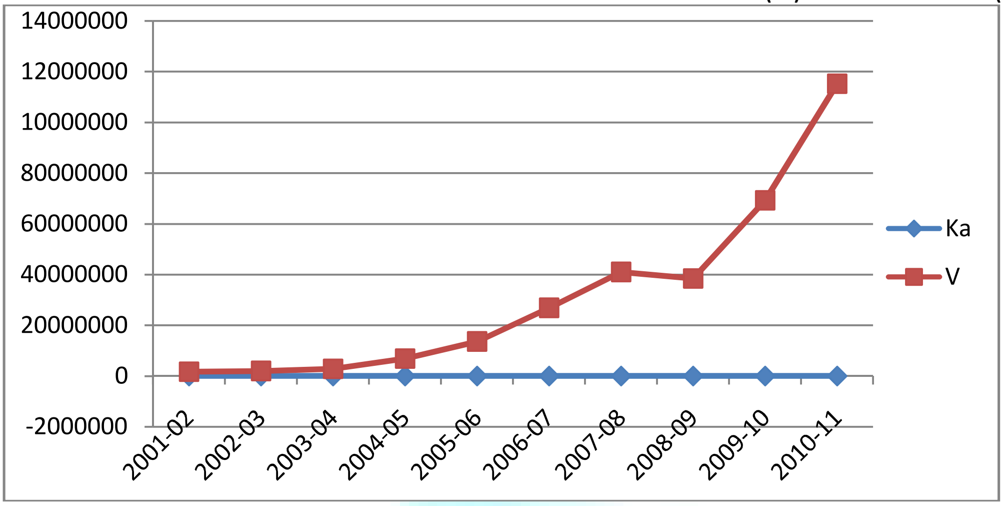
The correlation coefficient between cost of capital and value of the firm is positive in case of 17% companies and negative in case of 83%. All are statistically insignificant as shown in table no. 2. Thus, our null hypothesis is accepted that there is no significant relationship between the two. Figure no. 2 shows the relationship between overall cost of capital and value of the firm. In response to a question about the relation between cost of capital and value of firm, 92% respondents are in favour of the response that there exists a relationship between them while 8% said vice-versa. The former respondents are of the opinion that value of firm increases when cost of capital decreases and 9% said that value of firm increases when cost of capital increases. It can be said that cost of capital and value of firm are negatively related upto some extent yet it is not the only determinant affecting value of firm. There are other external factors also as shown in Table no. 4 which affects value of firm besides cost of capital.

TABLE 2: BIVARIATE CORRELATION BETWEEN COST OF CAPITAL AND VALUE OF THE FIRM

Company number	R
1	-0.20408
2	-0.11133
3	0.491211
4	-0.11174
5	-0.44403
6	-0.09713
7	-0.26435
8	-0.13808
9	-0.0974
10	-0.14653
11	-0.17077
12	0.002276
13	-0.04718
14	-0.26681
15	-0.35985
16	-0.17647
17	-0.01185
18	0.01145
19	-0.20593
20	-0.10227
21	-0.23473
22	-0.04583
23	-0.17513

** and * indicates significance at 1% and 5% level of significance respectively.

FIGURE: 2 – GRAPH SHOWING THE RELATIONSHIP BETWEEN OVERALL COST OF CAPITAL (Ka) AND VALUE OF FIRM (V)



CAPITAL STRUCTURE AND VALUE OF FIRM

In the absence of a well defined and universally accepted model on capital structure for an imperfect capital market, co-efficient of correlation was calculated between capital structure and market value of a firm. The results, obtained, are shown in table no 3 and their relationship is also depicted in Fig. 3.

From the results, it is clear that no definite relationship exist between capital structure and market value of equity. 18 companies show a negative relationship and 6 show a positive relationship. The results are statistically significant in case of 10 companies only (2 positive and 8 negative).

From the above discussion, one result could be safely inferred "though Capital structure significantly affects the market value of both equity and of firm, yet it is not the only determinant". There are other factors also which affect this value. The same is confirmed by the views of the respondent companies shown in tables 4 and 5.

TABLE 3: BIVARIATE CORRELATION BETWEEN CAPITAL STRUCTURE AND VALUE OF THE FIRM

Company number	R
1	-0.09355
2	-0.77304**
3	-0.05347
4	-0.72937**
5	-0.17163
6	-0.15918
7	-0.69723*
8	0
9	-0.80454**
10	-0.11557
11	-0.53799
12	-0.55589*
13	-0.44878
14	0.959717**
15	0.206728
16	-0.74331**
17	-0.68702**
18	-0.29236
19	-0.29334
20	0.424856
21	0.152491
22	-0.28938
23	0.678553*

** and * indicates significance at 1% and 5% level of significance respectively.

FIGURE: 3 – GRAPH SHOWING THE RELATIONSHIP BETWEEN CAPITAL STRUCTURE AND VALUE OF FIRM (V)

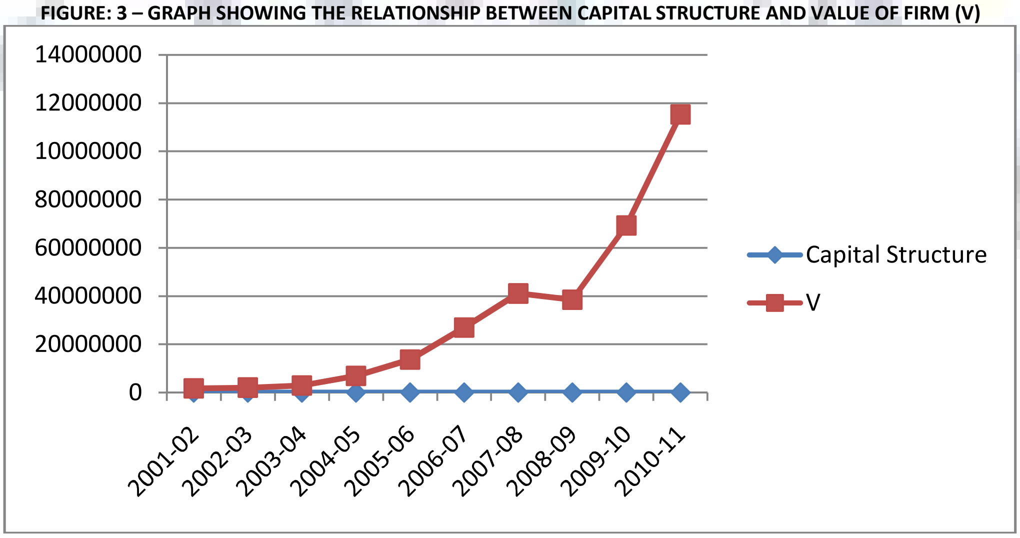


TABLE 4: FACTORS (OTHER THAN COST OF CAPITAL AND CAPITAL STRUCTURE) WHICH AFFECT THE VALUE OF A FIRM

Rank	Factor	Responses
1.	Operating results	11
2.	Business risk	11
3.	Economic conditions	11
4.	Promoters	11
5.	Govt. Policies	11
6.	Tax rates and structure	9
7.	Political conditions	11

TABLE 5: DETERMINANTS OF SHARE PRICE

Rank	Determinant	Responses
1	Dividend yield	11
2	Capital structure	11
3	Dividend policy	11
4	Cost of capital	9
5	Management of the company	8
6	Role of bulls and bear	8
7	Govt. policies	8
8	Take over bid by others	7

These two tables show the major factors which influence the market price of shares and value of a firm. In other words, the value of a firm is affected by a multiplicity of causes, many of which are not measurable as they are qualitative in nature. Since, it is not possible to segregate their effects, an exact relationship between capital structure and value of the firm cannot be established.

This conclusion is further strengthened by the highly volatile behvaiour of the stock markets. In this study, it was found that 22 out of 26 companies showed co-efficient of variation (C.V) of market value greater than 50%. The C.V. of total market values for all companies was found to be 63.3%, which is quite high. The variations in value were not found to be significantly associated with the financial performance of the companies. In other words, market price of stock is not true index of a company's performance.

Other findings on capital structure are as follows:

1. TARGET CAPITAL STRUCTURE

The companies were asked the question (a) "what is your target capital structure and (b) how you plan to achieve it?" The response was very poor as only 17% answered the first part. The target capital structure (D/E ratio) ranged from 0:1 to 1.4:1 which is well below the mean value of D/E ratio obtained (2:1). It means that the sample companies may not avail full advantage of debt as they will be under leveraged. Response to the second part was still poorer and none of the respondents suggested any systematic mechanism to achieve it. So we can say that Indian companies have, in general, no target capital structure and the companies

In response to the question, "what are the determinants of your existing capital structures?" Reply of question in brief the relative importance of different factors that affect the capital structure decisions are given in table 6.

TABLE 6: DETERMINANTS OF CAPITAL STRUCTURE

Rank	Factor	Responses
1.	Mgt. decisions and policies	12
2.	Cost of Capital	9
3.	Size of the company	7
4.	Dividend Policy	6
5.	Market Conditions	6
6.	Earning Stability	6
7.	Nature of Industry	6
8.	Govt. rules	6
9.	Restrictions by F.I.'s	6
10.	Industry norm	4
11.	Any other (please specify)	Nil

The table 6 shows the factors to be considered while changing the existing capital structure. The most important factor is management decisions and policies. These changes must result in lower cost of capital and higher value of the firm. Prevailing market conditions also affect these decisions. When the stock market is in boom a company may issue equity because the probability of under subscription is very small. In the period of recession, a company may opt for the issuing of debt. When the earnings are fairly stable, a company can have higher D/C ratio with very little probability of default in interest payments. Nature of industry is also a very important determinant of capital structure. The utilities and service organizations usually have a large amount of debt because their fixed assets make good security for mortgage bonds and their sales and earnings are relatively stable. The same is true for capital intensive industries like steel plants, petrochemical etc. Government and Financial institutions also sometimes put ceiling on the maximum value of D/E ratio. Over the years, a D/E ratio of 2:1 was fixed by both as the norm for all types of industries with a few exceptions like big size plants and capital intensive industries. As a company grows in size, it will have higher D/E ratio because the additional capital cannot be raised by internal financing or stock market.

Since the values of these factors differ from one company to another, so we find significant variations in their capital structure even if they belong to the same industry group.

2. CAUSES OF CAPITAL STRUCTURE CHANGES

In response to this question, different choices were marked, which are shown in the table 7.

TABLE 7: FACTORS THAT CAUSE CHANGE IN CAPITAL STRUCTURE

Rank	Factor	Responses
1.	To raise additional capital	11
2.	For controlling the management	10
3.	To increase the firm's value	9
4.	Follow Govt. rules	9
5.	To change leverage	8
6.	To reduce current liabilities	7
7.	To reduce Ka	6
8.	To improve earnings	6
9.	To make use of mkt. conditions	5
10.	To distribute retained earnings	5
11.	Any other	Nil

Table 7 shows various factors that cause a change in the capital structure. Though the factors are interrelated (e.g. reduce Ka and increase the value of firm), yet the ranks show that most important of all is to raise additional capital to be invested for expansion, growth or diversification. This factor affects the other factors also. But the basic objective is only one – to maximize the stock price of the company through these changes.

CONCLUSIONS

The difference in capital structure of different companies whether they belong to the same industry group or different groups, was found to be statistically significant. This is because of the fact that qualitative values of the determinants of capital structure and their effect on value of the firm vary from company to company. The companies, under study, in general have no scientific and systematic mechanism to determine the target capital structure and if a company has set a target capital structure, it has no specific plans to achieve it.Co-efficient of correlation between cost of capital and capital structure was found to be negative. The results support the view that increase in leverage decreases the cost of capital because debt is a cheaper source than equity. But the results are not statistically significant. This is because this relationship is affected by a number of factors, both quantitative and qualitative, whose effect on this relationship could not be isolated. Indian companies have no specific model to compute the cost of specific components of capital, particularly the cost of equity capital and average cost of capital.

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