Abstract

Financing decision is one of the important areas in financial management to increase shareholders’ wealth. Firms can use either debt or equity capital to finance their assets. The purpose of the study is to find out the determinants of capital structure and its impact on financial performance. We have used secondary data and taken 50 top manufacturing companies for our study. Regression model has been used to study the relationship and impact of capital structure on profitability. The study concludes that there is a significant relationship between capital structure and profitability and capital structure has significant impact on financial performance of sample companies.

I. INTRODUCTION

The basic aim of starting a business is earning profit for which the proprietor has to sacrifice or invest some amount of money in the business. Money invested helps in acquiring resources i.e. assets. The assets of the business are used in process of production, distribution and in the operation of the business. The funds to be invested are procured from various sources. The source can be promoter himself or outsiders to the business. Those funds are the input to business which will provide the expected output. This input is termed as capital/financial capital. The source of financial capital can be of two types- owned capital and borrowed capital. Owned capital is raised from owners (promoters/shareholders) also known as owner’s equity and borrowed capital is raised from lenders or investors known as debt fund or outsider’s equity. The capital can be of...
various types on the basis of time such as long term capital, medium term capital & short term capital. Long term capital is basically obtained by issuing share capital, debenture capital, venture capital mortgage, retained earnings etc. The term loan, leasing, Bank overdraft, trade credit, factoring etc. are the sources of Medium and short term capital. All these mix of sources of funds is known as financial structure. The portion of finance structure consisting of long term capital can be said as capital structure.

The capital structure is the combination of equity capital and debt capital. The proportion of debt and equity in capital structure varies from firm to firm and time to time. A firm can adopt a capital mix of either 100% equity and zero debt or 100% debt with zero equity or any combination of both. Equity financing is less risky in the sense of cash flow commitments, but results in a dilution of ownership and earnings where as debt capital creates an obligation or liability with low-cost and high risk. It is a very important component of corporate finance. Long before 50 years financial management has not got that much importance and deals with only procurement of funds but at present it has taken the basics of any business including procurement, utilization and control of finance. So it directly affects the performance of business organization. That’s why finance manager should take a decision of optimal capital mix which will increase the financial performance.

II. REVIEW OF LITERATURE

- **Goyal, (2013)** made a study entitled “Impact of Capital Structure on Performance of listed Public Sector Banks in India” with the purpose to measure the impact of capital structure on banking performance. He has taken 19 PSU banks listed on NSE as the sample for the study. It is concluded that the profitability measured by return on equity (ROE) reveals an average of 17.98 percent with median of 18.19 percent. This picture may suggest a good performance during the period under the study. The average value of TDC variable is 18.66 with median of 17. This position reveals that the banks are financially leveraged with a large percentage of total debt being short-term. The average growth is 21.29 and the average firm size is measured by logarithm of assets.

- **Mohamed & InunJariya, (2015)** studied the “Effect of Capital structure on profitability of Food and Beverage sectors in Sri Lanka” by taking 14 companies of the Beverage, Food & Tobacco industry and 24 companies from the Manufacturing industry. They conducted the study to find out the relationship between capital structure and profitability of the listed Beverage, Food and Tobacco industry in Sri Lanka and to recognize the extent of the impact of capital Structure on profitability of the listed Beverage, Food and Tobacco industry in Sri Lanka. The study revealed that leverage, measured in terms of total debt to asset (TDA) has a negative impact on profitability measured by return on equity (ROE) and return on capital employed (ROCE) and is significant at 0.05 significance level whereas leverage, measured by total debt to equity (TDE) shows a negative
relationship but not significant. TDA is also found to have a negative impact on profitability measured by ROCE after controlling for LNS at 0.01 significant levels. It is clear that both the measures of leverage (TDA & TDE) have a negative impact on both the measures of profitability (ROE & ROCE). The value is less than 0.01 for all the cases. Therefore, it could be concluded that at 1% significance level, leverage/debt capital has a negative impact on the profitability of beverage, food and tobacco sector firms listed on Sri Lanka.

- **Babalola, (2012)** in their research on “The Effects of Optimal Capital Structure on Firm’s Performances in Nigeria” examined an optimal capital structure to maximize the performance of selected firms under the same systematic risk. They found a strong curvilinear relation between ROE and the debt-to-assets ratio. According to the dominant corporate finance paradigm, capital structure choice is a trade-off between the costs and benefits of debt. The theory predicts that the value of firms will first increase, then decrease, as debt ratio increases. Most existing papers on capital structure require firm’s performance or firm’s value to bear the linear relation with debt ratio, but the empirical evidence does not support this. In contrast, there is an evidence that the quadratic relations are significant, yet these have not received much attention in the finance literature.

- **Kumar, (2015)** made a study entitled “Capital Structure and its Impact on Profitability”. The study has made with the objectives of identifying the relationship between capital structure and profitability of SME, finding an optimal capital structure that would be associated with the best performance, finding an optimal capital structure that would be associated with the best performance and finding out the impact of capital structure on profitability. Data collected from some secondary sources studied from 2008 to 2013 and it is concluded that the debt/equity composition varies substantially among the SME and there is significant relationship between Debt to total funds and ROE. There is no relation or there is insignificance between debt to total funds and ROCE.

- **Boadi & Li, (2015)** have done an empirical analysis of “leverage and financial performance of listed non-financial firms in Ghana” by selecting 15 companies and collecting data from the Ghana stock exchange fact book about the performance of those companies. The study examined the nexus between leverage and profitability by taking return as dependent and debt-equity ratio as independent variable. The study revealed that ROE was insignificantly related to short term debt and long term debt. Sales growth was significantly and positively related to ROA, ROE and NPM for all measures of debts, Firm size indicated insignificant and negative association to ROA, ROE and NPM for all measures of debts.

- **Ullah et al. (2015)** in their study entitled impact of debt on profitability of firms; evidence from non-financial sector of Pakistan” conducted on the manufacturing industry and non manufacturing industry of Pakistan. The objectives of the study
was to analyze and understand the association between capital structure and profitability and the fastidious to measure their significance in manufacturing and non-manufacturing industries of Pakistan, to create optimal capital structure, to find out how debt affects on the capital structure and to obtain optimistic value and growth of equity of the firms. By the help of different techniques of statistics and got conclusion that most of the manufacturing industries have been found that negative impact between profitability and total debt while service sectors have positive impact with profitability and debt.

- **Habib et al.,** (2016) made a study entitled “Impact of debt on profitability of firms; evidence from non-financial sector of Pakistan”. This study focuses on expanding the existing empirical knowledge on the impact of debt on profitability of companies by taking 340 firms listed on the KSE. The study analyzed the financial statements of all the sample companies to find out the influence of debt on the profitability of concerned firms. It is concluded that there is a significant but negative relationship between debt and profitability, thus, the higher the debt, the lower the profitability.

- **Movalia,** (2015) conducted a study on “Capital structure analysis and profitability of Indian Tyres Industry” with the objective to know the Debt-Equity ratio of listed Tyre Companies, to measure profitability of Tyre industry, to measure the impact of debt-equity ratio on profitability of listed companies in the Tyre industry. The study was based on descriptive and analytical research design which found out that debt-equity ratio of the company is having significant impact on profitability of Tyre companies in India. MRF, Apollo Tyres, Dunlop India and Modi Rubber having Ideal capital structure, so respectively they are having good profitability.

### III. RESEARCH GAP

Many studies have been conducted on the impact of management & control, Costing technique, marketing strategy, employee performance on profitability but very few researches have been made on impact of capital structure on profitability in India. Those studies made on this topic are basically on different industries like SME, Food & beverages industry, IT industries, Tyre industries etc but a few studies have been taken on manufacturing sector or service sector in common.

### IV. STATEMENT OF THE PROBLEM

In India, a few studies have been undertaken to establish the relationship between optimum capital structure and performance variables like ROE, ROA, and ROCE etc. So, the study is an attempt to analyze the relationship between capital structure and performance variables to understand and evaluate the impact of capital structure on various performance variables.
V. IMPORTANCE OF THE STUDY

The present study mainly analyses how far the capital structure affects the profitability of corporate firms in India. Asset size and business revenue would appear to be the important factors in determining the profitability of corporate firms. This is a benchmark of performance by seeing which investors and lenders invest in business. In India, a few studies have analyzed the relationship between asset size and business revenues on the impact of capital structure and Profitability. Though many research studies have been undertaken in the field of capital structure, only a very few studies have been undertaken to analyze the association between capital structure and Profitability. Therefore, this study is a maiden attempt to analyze the

- Profitability of the firms.
- Significant relationship among different sized firms in terms of capital structure and Profitability.

The study constitutes an attempt to provide an empirical support to the hypothesized relationship between capital structure and Profitability. Is there any significant difference in the impact of capital structure on Profitability of manufacturing firms in India? How far does the capital structure affect the business revenue of firms, and what is the inter-relationship between capital structure and Profitability.

VI. OBJECTIVES OF THE STUDY

The objectives of the study are:
1. To identify the determinants of capital structure.
2. To measure the impact of capital structure on financial performance.

VII. RESEARCH METHODOLOGY AND HYPOTHESIS

Sources of Data
Secondary data have been used for the study. The required data have been collected from money control website. The data have been taken from the financial reports of the sample companies.

Sample Design
Considering the availability of data, a study period of 10 years has been taken. 20 firms selected out of 100 listed firms on the basis of market capitalization, 20 firms out of top 100 firms on the basis of total assets employed and 10 firms from list of top 100 firms on the basis of revenue & growth have been selected. So, in total we have taken 50 manufacturing companies for our study.

Variables
1. **Dependent variables** (Financial Performance variables)
   - ROA- Return on Asset
   - ROE- Return on equity
   - ROCE – Return on Capital employed
   - EPS- Earning per Share
2. **Independent variables** (Capital Structure)
   - CR - Current ratio
   - LD _ TA - Long term debt to Total assets
   - TD _ TA - Total debt to Total assets
   - DER - Debt equity ratio

**Econometric Model**

\[ Y_e = \beta_0 + \beta_1 \text{DER} + \beta_2 \text{CR} + \beta_3 \text{LD_TA} + \beta_4 \text{TD_TA} + \varepsilon \]

Where,

- \( Y_e \) = Profitability Variables (ROA, ROE, ROCE, EPS)
- \( \beta_0 \) = constant or the value of Y when all values of X are zero
- \( \beta_1, \beta_2, \ldots, \beta_4 \) = Slope of the independent variables
- \( \text{DER} \) = Debt – Equity Ratio
- \( \text{CR} \) = Current ratio
- \( \text{LD_TA} \) = Long Term Debt to Total Asset
- \( \text{TD_TA} \) = Total Debt to Total Asset
- \( \varepsilon \) = The error term

**Statistical Measures**
- Multicollinearity test- to study the inter-dependence among independent variables
- Multiple regression technique- for analysis of degree of impact of capital structure on profitability

**VIII. HYPOTHESIS**

- \( H_0^1 \) There is no relationship between ROA and capital structure variables.
- \( H_0^2 \) There is no relationship between ROE and capital structure variables.
- \( H_0^3 \) There is no relationship between ROCE and capital structure variables.
- \( H_0^4 \) There is no relationship between EPS and capital structure variables.

**IX. DETERMINANTS OF CAPITAL STRUCTURE**

- **Financial Leverage or Trading on Equity**
  The use of long term fixed interest bearing debt and preference share capital along with equity share capital is called financial leverage or trading on equity. If the assets financed by debt yield a return greater than the cost of the debt, the earnings per share will increase without an increase in the owners’ investment. Similarly, the earnings per share will also increase if preference share capital is used to acquire assets.

- **Growth and Stability of Sales**
  The capital structure of a firm is highly influenced by the growth and stability of its sales. If the sales of a firm are expected to remain fairly stable, it can raise a higher level of debt. Stability of sales ensures that the firm will not face any difficulty in meeting its fixed commitments of interest payment and repayments of debt. Similarly, the rate of growth in sales also affects the capital structure decision.
Cost of Capital
Cost of capital refers to the minimum return expected by its suppliers. The expected return depends on the degree of risk assumed by investors. A high degree of risk is assumed by shareholders than debt-holders. The capital structure should provide for the minimum cost of capital. The main sources of finance for a firm are equity share capital, preference share capital and debt capital. The return expected by the supplier of capital depends upon the risk they have to undertake.

Risk
It means the possibility of variation in future return. There are two types of risk that are to be considered while planning the capital structure of a firm (i) business risk and (ii) financial risk. Business risk refers to the variability to earnings before interest and taxes. Financial risk associated with financing, financial transactions.

Cash Flow
A firm which shall be able to generate larger and stable cash inflows can employ more debt in its capital structure as compared to the one which has unstable and lesser ability to generate cash inflow. Debt financial implies burden of fixed charge due to the fixed payment of interest and the principal. Whenever a firm wants to raise additional funds, it should estimate, project its future cash inflows to ensure the coverage of fixed charges.

Nature and Size of a Firm
Nature and size of a firm also influence its capital structure. All public utility concern has different capital structure as compared to other manufacturing concern. Public utility concerns may employ more of debt because of stability and regularity of their earnings. On the other hand, a concern which cannot provide stable earnings due to the nature of its business will have to rely mainly on equity capital.

Control
Whenever additional funds are required by a firm, the management of the firm wants to raise the funds without any loss of control over the firm. In case the funds are raised though the issue of equity shares, the control of the existing shareholder is diluted. Hence they might raise the additional funds by way of fixed interest bearing debt and preference share capital.

Flexibility
Flexibility means the firm’s ability to adopt its capital structure to the needs of the changing conditions. The capital structure of a firm is flexible if it has no difficulty in changing its capitalization or sources of funds. Whenever needed the company should be able to raise funds without undue delay and cost to finance the profitable investments.

Requirement of Investors:
The requirements of investors are another factor that influences the capital structure of a firm. It is necessary to meet the requirements of both institutional as well as private investors when debt financing is used. Investors are generally classified under three kinds, i.e. bold investors, cautions investors and less cautions investor.

Capital Market Conditions
Capital Market Conditions do not remain the same forever, sometimes there may be depression while at other times there may be boom in the market and there are pessimistic business conditions, the company should not issue equity shares as investors would prefer safety.

- **Marketability**
  Marketability here means the ability of the company to sell or market particular type of security in a particular period of time which in turn depends upon the readiness of the investors to buy that security. Marketability may not influence the initial capital structure very much but it is an important consideration in deciding the appropriate timing of security issues.

- **Inflation**
  Another factor to consider in the financing decision is inflation. By using debt financing during periods of high inflation, we will repay the debt with rupees that are worth less. As expectations of inflation increase, the rate of borrowing will increase since creditors must be compensated for a loss in value. Since inflation is a major driving force behind interest rates, the financing decision should be cognizant of inflationary trends.

### X. DATA ANALYSIS

**Multicollinearity Report**

In the study four independent variables have been taken. We first run regression equation to find out if there is any Multicollinearity among the independent variables.

**Table 1: Multicollinearity Test**

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Variance Inflation Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debt Equity Ratio</td>
<td>1.0557</td>
</tr>
<tr>
<td>Current Ratio</td>
<td>1.0023</td>
</tr>
<tr>
<td>Longterm Debt _ Total Asset</td>
<td>1.4398</td>
</tr>
<tr>
<td>Total Debt _ Total Asset</td>
<td>1.4510</td>
</tr>
</tbody>
</table>

*Source: Self compiled*

From this report it is observed that VIF value of independent variables is less than the rule of thumb 10. Hence there is no Multicollinearity between independent variables and all the variables are eligible for running regression equation.

**Table 2: Regression Result**

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Multiple R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roa</td>
<td>0.507441323</td>
<td>0.257496696</td>
<td>0.25149667</td>
<td>6.44e-31 &lt; 0.05</td>
</tr>
<tr>
<td>Roe</td>
<td>0.31239629</td>
<td>0.09759144</td>
<td>0.09029925</td>
<td>2.31e-10 &lt; 0.05</td>
</tr>
<tr>
<td>Roce</td>
<td>0.461304</td>
<td>0.212801</td>
<td>0.20644</td>
<td>1.02e-24 &lt; 0.05</td>
</tr>
<tr>
<td>Eps</td>
<td>0.072391</td>
<td>0.00524</td>
<td>-0.0028</td>
<td>0.625743</td>
</tr>
</tbody>
</table>

*Source: self compiled*

From the regression table as given above it is found that there is a positive relationship between ROA and all independent variables (D/E, CR, LD_TA, TD_TA) as evident from $R^2$ i.e. 0.257496696. This indicates around 25% (approx) of ROA is contributed
by independent variables. It can be said that a unit change in capital structure leads to a change of 25% in ROA which is very significant. Here p value is 6.44E-31 i.e. p<0.05. It implies that there is a significant relationship between ROA and all independent variables collectively. Hypothesis 1 predicts that “There is no relationship between ROA and CS variables”. The above results confirm that this hypothesis is rejected and alternative hypothesis is accepted i.e. there is a significant relationship between ROA and CS variables.

The above table propounds that there is a positive relationship between ROE and all independent variables i.e. 0.09759144. It means around 10 % (approx) of ROE is contributed by independent variables. So it can be said that change in a unit of capital structure will lead to 10% change in ROE. Return on equity is the basic indicator of profitability, but only 10% is affected by these variables. The remaining 90% change may be due to other variables like competition from the market, state of economy, promotion of the company which influences volume of sales, cost of raw materials, labour etc., and the impact of which is not considered in this study. Here p value is 2.31E-10 i.e. p<0.05. It concludes that there is a significant relationship between ROE and all independent variables. Hence H$_{0}^{2}$ ‘There is no relationship between ROE and CS variables is rejected and alternative hypothesis is accepted i.e. there is a significant relationship between ROE and independent variables.

We find that there is a positive relationship between ROCE and all independent variables from the regression table i.e. R$^{2}$ 0.212801 i.e. this shows around 21% (approx) of ROCE is contributed by independent variables. It also signifies the level of significance between ROCE and all independent variables is 1.02E-24 i.e. p<0.05. It denotes that there is a significant relationship between ROCE and all independent variables. The above result concludes that the null hypothesis H$_{0}^{3}$ is rejected. So, alternative hypothesis is accepted i.e. there is significant relationship between ROCE and independent variables.

There is a positive relationship between EPS and all independent variables as evident from adjusted R$^{2}$ 0.00524 i.e. this indicates around 1 % (approx) of EPS is contributed by independent variables which is very negligible. Here we can see the effect of these variables on EPS is very insignificant. A change in capital mix does not incur much change in EPS. There may be some other variables like dividend decision, state of economy etc. which we have not considered here in our study. The p value is 0.625743 i.e. p>0.05. It signifies that there is no significant relationship between EPS and all independent variables collectively. Thus, we conclude that the null hypothesis is accepted.

XI. FINDINGS

- The multiple Regression analysis between all variables shows that there is a significant relationship among dependent and independent variables.

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• Capital structure variables have approximately 25% impact on profitability variables on an average.

XII. CONCLUSION
The study results reveal significant relation between capital structure and profitability. These findings imply that change in debt and equity position is associated with the profitability. Every firm should follow optimum capital structure which maximizes their profitability and reduce costs. The debt and equity capital should be selected carefully by organizations. The capital structure decision is crucial for any business organization. The capital structure of a concern depends upon a large number of factors such as leverage or trading on equity, growth of the company, nature and size of business, the idea of retaining control, flexibility of capital structure, requirements of investors, cost of floatation of new securities, timing of issue, corporate tax rate and the legal requirements.

XIII. REFERENCES

TO CITE THIS PAPER