



## RELATIONSHIP BETWEEN CAPITAL STRUCTURE AND PROFITABILITY: WITH SPECIAL REFERENCE TO SELECTED STEEL MANUFACTURING COMPANIES IN INDIA

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### ABSTRACT

*Capital structure decision is one of the most vital decisions since the profitability of any enterprise is directly affected by such decision. An attempt has been made in this paper to explore the relationship between capital structure (measured by Debt-Equity ratio and Debt-Capital ratio) and profitability (measured by Net Profit ratio, Return on Capital Employed and Return on Investment). A sample of five steel manufacturing companies have been taken and secondary data from the financial report of the selected companies for the period of five years from 2010-11 to 2014-15 was considered. The data has been analysed by using ANOVA (to know significant difference in capital structure pattern and profitability), correlation (find out an association between capital structure and profitability). The result revealed that there is a significant difference in capital structure and profitability and significant negative relationship between capital structure and profitability of selected companies.*

**Key words:** Capital structure, Profitability, Debt-Equity Ratio, Debt-Capital Ratio, Net Profit Ratio, Return on Capital Employed, Return on Investment, ANOVA, Correlation analysis.

### INTRODUCTION

Every business enterprise whether it is newly started or ongoing; small, medium or large, requires fund to carry out its activities. The fund is required for long time as well as for short time. Collection of long term and short term fund by using various sources of fund known as financial structure decision but when we deals with only long term fund it is known as capital structure decision.

Two major options are available to collect the long term fund and that is ownership

securities (equity shares, retained earnings and preference shares) and creditorship securities (debentures/bonds, long term loans). When firm using creditorship securities it increases the risk of becoming insolvent as whether business earns profit or incurred loss it is compulsory to pay interest on it but at the same time it is cheaper source as interest rate is lower than dividend rate and tax deduction also available on it as it is considered as an expense. Ownership securities bear higher dividend rate and tax deduction is not available on it as it is considered as appropriation of profit but it is not compulsory to pay it when firm incurred loss. Thus, use debt decreases cost of capital and increases risk while equity increases cost of capital and decreases risk. Here proper balance between debt and equity is need to be maintained so that risk and cost can be kept minimum and thereby increasing the profitability of the firms which is known as optimum capital structure decision.

The rationale behind selection of manufacturing industry is that unlike service industry, it requires huge fund both at the initial stage as well as at the times of growth. The reason behind selecting steel industry is that it is more capital intensive than labour intensive so require huge long term fund than other manufacturing industry. So it is very difficult for the top management of the steel manufacturing companies to frame a capital structure for collecting huge funds.

This type of study is not available in literature review so this research paper focus on what is the existing situation of capital structure and profitability of selected companies and how they differ from each other as well as how profitability of selected companies is affected by capital structure decisions over a period of five years.

## REVIEW OF LITERATURE

The current study has reviewed lot of recent studies that covers different industry sectors undertaken by various researchers all over the world in order to find out the relationship between capital structure and profitability. The review of such major studies is as follows:

**T. Velnampy and j. Aloy Niresh (2012)** investigated the relationship between capital structure and profitability of ten listed srilankan banks over the past 8 year's period from 2002 to 2009. They found that there is a negative association between capital structure and profitability except the association between debt to equity and return on investment. Further the results suggest that 89% of total assets in the banking sectors of Sri Lanka are presented by debt, confirming the fact that banks are highly geared institutions. **Idode, Patrick Esiemogie; Adeleke, Toyin Mary; Ogunlowore, Akindele John and Ahogbon, Oyekan Samuel (2012)** have examined the influence of capital structure on profitability of listed Nigerian banks and data was obtained of listed banks on the Nigerian Stock Exchange (NSE) from 2008 to 2012 covering a period of five years. The findings of this study show that capital structure has significant positive influence on the profitability of Nigerian banks during the period

of study **Dr. Khalid Ashraf CHISTI, Dr. Khursheed ALI and Prof. Mouh-i-Din SANGHAVI (2013)** have made an attempt in order to ascertain the impact of capital structure on the profitability of a firm. This study is focus on automobile industry and ten companies are taken as sample. The reference period of the study is five years and is completely based on secondary data which has been collected through various sources. The findings of the study have put forth that capital structure do have statistically impact on the profitability of the firms. **Ahmed AL Ajlouni and Munir Shawer (2013)** have explored the relationship between the capital structure and the profitability (measured by ROI, ROE and NPR) of the petrochemical industry firms in the Kingdom of Saudi Arabia and the direction of this relation for the targeted firms during the period 2008 to 2011. The result revealed that there is no significant relationship between capital structure and ROI and ROE, while it showed very weak relationship with NPM. This means that profitability performance of the petrochemical industry firms in KSA is not relevant to capital structure and there are other factors that affect the profitability of these firms. **Ashim Paul and Tanupa Chakraborty (2014)** have modestly tried to investigate the impact of capital structure on a firm's profitability through a study of some listed jute companies in India. The study is driven by the unsteady over the last few years resulting in closure of several jute companies in India. They have found that selected companies are somehow suffering from low profitability due to not having good proportion of debt-equity mix in capital structure .they also found that the relationship between the selected capital structure and profitability variable is negative, but not significant in any of the cases.

#### **OBJECTIVES OF THE STUDY**

1. To examine the capital structure of selected companies.
2. To examine the profitability of selected companies.
3. To explore the relationship between capital structure and profitability of selected companies.

#### **RESEARCH METHODOLOGY**

The present study is analytical in nature. To measure the impact of capital structure, data of debt-equity ratio and debt to capital ratio used as independent variable and profitability ratio like net profit ratio, return on capital employed and return on investment taken as dependent variable. The secondary data have been collected from various web sites and annual financial statements of the selected companies. The reference period of the study is of five years which is from the financial year 2010-11 to 2014-15. Population of the study is all steel manufacturing companies of India which are registered at NSE/BSE. In this study five companies of steel industry has been taken as a sample by using convenient sampling technique. The sample companies are Steel Authority of India Limited, JSW Steel Limited, Tata Steel Limited, Jindal Steel and Power Limited and Bhushan Steel Limited.

#### **HYPOTHESIS OF THE STUDY**

H<sub>01</sub>: There is no significant difference in capital structure pattern between selected companies.

H<sub>02</sub>: There is no significant difference in profitability between selected companies.

H<sub>03</sub>: There is no significant relationship between capital structure and profitability of selected companies.

**RESULTS AND DISCUSSION:-**

Table 1.1 Hypothesis testing through ANOVA

H<sub>01</sub>: There is no significant difference in capital structure pattern between selected companies.

H<sub>02</sub>: There is no significant difference in profitability between selected companies.

		Sum of Squares	df	Mean Square	F	Sig.
<b>DE</b>	Between Groups	26.983	4	6.746	31.670	.000
	Within Groups	4.260	20	.213		
	Total	31.243	24			
<b>DC</b>	Between Groups	.699	4	.175	90.678	.000
	Within Groups	.039	20	.002		
	Total	.737	24			
<b>NPR</b>	Between Groups	571.258	4	142.814	3.328	.030
	Within Groups	858.317	20	42.916		
	Total	1429.575	24			
<b>ROCE</b>	Between Groups	155.525	4	38.881	4.580	.009
	Within Groups	169.778	20	8.489		
	Total	325.303	24			
<b>ROI</b>	Between Groups	177.989	4	44.497	.739	.576
	Within Groups	1203.633	20	60.182		
	Total	1381.622	24			

**Interpretation:** Value of p for both independent variables (Debt-equity ratio & Debt-Capital ratio) of capital structure is 0.000 which is less than 0.05. It means that capital structure patterns of selected companies are differ from one company to another company

As far as the profitability is taken into consideration, the value of P for Net profit ratio (0.003) and Return on capital employed (0.009 is less than 0.05 reveals that NPR and ROCE are significantly different between selected companies. While there is no significant difference in ROI between selected companies as the p value for this is 0.576 which is greater than 0.05.

Table 1.2 Hypothesis testing through Correlation

H<sub>03</sub>: There is no significant relationship between capital structure and profitability of selected companies.

Variables		DE	DC	NPR	ROCE	ROI
DE	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	25				
DC	Pearson Correlation	.922**	1			
	Sig. (2-tailed)	.000				
	N	25	25			
NPR	Pearson Correlation	-.561**	-.471*	1		
	Sig. (2-tailed)	.004	.018			
	N	25	25	25		
ROCE	Pearson Correlation	-.586**	-.462*	.732**	1	
	Sig. (2-tailed)	.002	.020	.000		
	N	25	25	25	25	
ROI	Pearson Correlation	-.498*	-.273	.871**	.721**	1
	Sig. (2-tailed)	.011	.186	.000	.000	
	N	25	25	25	25	25
**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).						

**Interpretation:** The above table shows the correlation matrix between independent variables (debt-equity ratio and debt-capital ratio) related to capital structure and dependent variables (net profit ratio, return on capital employed, return on investment) related to profitability.

Debt-equity ratio is negatively correlated with the all dependent profitability ratio of NPR, ROCE and ROI as the value r is -0.561, -0.586 and -0.498 respectively. Debt-capital ratio too negatively associated with profitability. In short, above table shows

significant negative relationship between capital structure and profitability of selected companies.

## CONCLUSION

This research study primarily attempted to examine the relationship between capital structure and profitability of steel manufacturing companies in India during the period of 2010-11 to 2014-15. For this, the capital structure is analysed by debt-equity ratio and debt-capital ratio while profitability is measured by net profit ratio, return on capital employed and return on investment ratio. One common thing for all companies found is that every year proportion of debt has been increase while the profitability reduced every year. The capital structure pattern and profitability is differs from company to company found by using ANOVA. Significant negative association is found between capital structure and profitability for selected companies by using Pearson correlation test. This is may be due to excess use of debt as well as some other reason may be responsible for this.

## RECOMMENDATIONS

Existing pattern of capital structure is required to be changed as it is negatively correlated with profitability. The company should not use excess debt. The management should try to place greater emphasis on equity capital through retained earnings and issue of shares for maintaining debt-equity and debt-capital ratio. There may be other reasons for reducing profitability, the management should find those reasons and make it correct so that the profitability can be improved.

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