

CAPITAL STRUCTURE AND ITS IMPACT ON PROFITABILITY: A STUDY BASED ON TATA STEEL LIMITED

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[The capital structure is the mixture of debt capital and equity capital that the firm uses. The choice of appropriate source of fund for capital structure is one of the major policy decisions taken by a firm. In this paper an attempt has been made to study the capital structure and its impact on profitability by the help of analysing the last five years balance sheet and financial position through various ratios and components of capital. To achieve the objective of analysing the capital structure of the steel industry component wise dominance and a relationship between the capital structure and profitability of steel industry by taking last five years annual reports of TATA STEEL LTD. It has been observed from the study that shareholders fund has a positive correlation with the element of non-current liabilities but contains a mixed impact with current liability. On the other side, from the profitability point of view, debt equity ratio has a positive impact on price earnings ratio and dividend payout ratio which implies debt capital will improve on profitability measurement ratios.]

Keyword: Capital Employed, Capital Structure, Current Liability, Dividend, Long-term Loan, Non-current Liability, Profitability, Short-term Loan, Shareholders Fund.]

The capital structure of a firm is a mixture of different securities, debt and equity. When a firm expands, it needs capital which is raised from debt or equity. Debt capital has two important advantages. First the providers of debt will get a fixed rate of return and from companies aspect, interest paid is tax deductible. On the other hand shareholders do not get their share of profits unless and until business is running successfully.

Firms can use either debt or equity capital to finance their assets. In practice it is difficult to specify an optimal capital

structure. Overall, financial decision means primarily the capital structure decisions which are more important compare to operating and the strategic decisions of the firm.

Capital structure decision is one of the most critical areas of financial decision because of its inter connection with other financial decision parameters .Poor capital structure decision leads to high cost of capital , thereby lowering the NPV of the project decreasing the acceptability and the value of the firm.

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In the words of Gerestenberg, “capital structure of the company refers to the composition or make up of its capitalisation and it includes all long term capital resources viz loans, advances, reserve share and bonds”. Schwarty (1959) “says capital structure of a business can be measured by the ratio of various kind of permanent loan and equity capital to the total capital”. The capital structure policy involves a trade-off between risk and return. Using mere debt raises the risk of the firms earning stream, but higher proportion of debt generally leads to higher expected rate of return on equity if the firm efficiently and successfully operated which is otherwise called trading on equity. Therefore, the optimal capital structure is striking a balance between risk and return to achieve the ultimate goal of maximising the price of the stock as well as maximisation the wealth of the firm.

Iron and steel industry is considered as the backbone of an emerging economy. One of the measures of developments is counted by the per capita consumption of steel. The holistic effect of steel industry is positively felt on the other industries like coal, infrastructure, railway etc. India is always ahead of time in production and innovation of steel. The first modern steel industry was established in Kulti by Bengal Iron Works which later on stands as Indian Iron And Steel Company. The large scale steel production started when Tata Steel Plant was established in 1907 in Jamshedpur. In 1918 IISCO was set up and in 1973 SAIL is created as a holding company to oversee the public sector steel

production. After liberalisation in 1991, large scale steel production was privatised and huge investment of foreign capital was witnessed.

Though the growth in the steel sector is not discouraging but govt. has taken steps to make it more sustainable. The engineering sector has de-licensed and 100% FDI is allowed in the sector. From April 2000 to Feb 2012 USD 14.0 bn. has been invested and estimated to be invested up to USD 208.3 bn. by 2020 for which various MOUs are signed. Large infrastructure project in PPP (public private partnership) mode has been framed. A total of R&D projects have been approved amounting Rs. 677 crores where central govt's steel development fund's (SDF) assistance is Rs. 370 Cr. Technological innovation has helped to increase the productivity. With the environmental and pollution compliance and improved raw material consumptions and energy consumptions techniques like, coal gasification and gas-ceased-direct-reduced iron (DRI) have been introduced with other alternative technologies like Hlomet, Fiver and IT mk3 & produced hot metal. Meanwhile, the National Steel Policy of 2005 has been replaced by 2012 the growth rate of market value of steel production 17.7% from 2007-11 which still fails to reduce import dependency of a growth rate of 6.8% in the same period. Export duty on iron ore has been increased to 30% ad velorem on all varieties to preserve the resources for domestic use and the Joint Parliamentary Committee (JPC) of steel industry gas felt

the rural demand of steel through and exploratory research and proved there is enough scope of aggravating the growth of consumer durable of steel which is 12.2% recently.

Undoubtedly, the development of steel industry in our country has suffered due to the lack of capital investment to modernize in time the motivation of selecting the steel industry in the nature of its huge investment in its assets, technologies and R&D activities it requires a huge capital base of different nature which changes from time to time. Steel, as a basic metal industry, is always considered a capital intensive one which got the priority over jute textile, rubber, wood products etc. which is understood as a less capital intensive industry. Capital intensive means the industries that require heavy investment in purchasing maintaining and amortizing capital in course of its operations. Capital intensive industry requires high return on investment to carry for long. There is no specific definition of capital intensive but the ratio between labour cost and capital expenditure is one of the major indicators. The high the ratio, the more capital intensive is the industry. But the effectiveness of capital investment is also measured by capital employment per unit of output (K/Y). In India, capital employed per worker (K/W) has increased from 7.29 to 14.25 from 1970-2002 whereas (k/y) has decreased marginally in the same period. It needs proper investigation of capital structure, employed in the industry and the output gained at the cost of reduced number of

labour in three decades is from 1970-2002.

Thus, the character of the capital draws attention for analyzing its effectiveness. The component of capital leads to a separate kind of organization policy. The role of debt, either inland or foreign, over equity participation has reduced the period of paying returns which affects a heavy capital intensive industry like iron and steel. Basically private investors are too sensitive to invest in an industry which provides input to infrastructure development of an emerging economy for its huge lock period. Another point of consideration is always on for a resource based industry where return on capital invites more risk than to produce a consumer based goods and services. Today 100% FDI investment is possible in iron and steel industry still government control is justified in management as it addresses lots of social environmental issues.

Thus, the return on capital employed signifies the profitability of the organization. The investment in heavy industry always dependent on the profitability of the companies which ensures the turnover and the performance of the corporation. The expected return as a measure of long term investment is always a tool to regulate the choice of capital(debt or equity)as a trade off with the cost of acquiring it.

Literature Review

Some basic books are consulted at the outset to understand the condition of steel industry in India. A very useful and

comprehensive book is written by Jayanta Bagchi (2005) which covers the refractory industry, cold rolling industry and sponge iron industry. Special attention was given on export, global competitiveness and R&D of steel industry. It also discusses the antidumping measures as it was discussed in Uruguay Rome agreement. Lastly it highlighted the role of government to shape the future of steel industry in India. Bala Subramania (2008) enumerated the Indian knowledge in ancient and mediavel India. The importance of science and technology in making the advance steel production was the main point of discussion in this book. Rajesh Chadha (1989) focused on the long range planning of steel industry which have its impact on Indian economy and imposed the system view in the industrial planning. He used econometrics simulation model for using the input in a better way to achieve the desired output. Kannan (2007) analysed how the industry get a facelift on the wake of globalization after narrating the historical path of industry's development. The change of license era, the government policy for capacity expansions and to face the global competitiveness is the prime areas where another successfully draws the attention of the readers. M. K. Singh (1989) discussed the labour productivity in the steel industry, Bokaro Steel Ltd as a case statistically. He tried to consider the factors like technical and human in the way to measure the productivity. He also tried to find the profit, wage and productivity relationship. But the most interesting and important book for the

purpose have written by S. Boobalan and S. Aravanan (2012) which covers the financial strength and weakness of steel industry. He collected the sample from CMIE Prowess Data bank and statistically tested the effectiveness and conditions of finance in steel sector.

With the backdrop of these books some papers are consulted for specific enlightenment on the capital structure and profitability. Poddar and Mittal (2014) examined the capital structure and steel industry to find out the determinants and concluded that the size of companies does impact the leverage of the firm and they can attract the debt easily from the market at the same time the profitability is bears the impact from leverage. Singh and Luthra (2013) revisited the capital structure puzzle and concluded that the optimal capital structure which maximize the shareholders return. An important study done by Velnampy and Niresh (2012) which, shows the relationship between capital structure and profitability. It also stated that firms are keen to have more debt than equity in their capital structure. Azhagaiah and Gavaurg (2011) inspected that the capital structure of IT industry has a wider influence in profitability and surprisingly they concluded the reality that the increased use of debt in capital structure has reduced the net profit of the IT firms. Not only the national scenario, the relationship has been treated between the capital structure and profitability in international domain too. With Japanese companies Kuezynski (2005) has found profitability as one of

the determinants of the capital structure. He also found the correlation between the variables and concluded that uniqueness, growth opportunity and debt tax shield has no impact on the capital structure of Japanese manufacturing industry. In Malaysia, Mansor, Mahamood and Jakariya(2007) have compared the profitability of 2 group of companies, the developers and the contractor. Their finding shows that developers are more profitable than contractors as their capital gearing and debt equity ratio are less than those of contractors. Pratheepkanth (2011) examined some companies in Colombo stock exchange. His hypothesis stands there is a negative relations between the financial performance and capital structure of the companies. In the republic of Macedonia, Ferati and Ejupi (2012) has concluded by examining the small and medium enterprises that larger the debt, the lower the profitability , participations of equity in capital structure has the positive relationship with profitability. In case of some Jordon based companies, Shubita and Alsawalhah (2012) again established that increase in debt in capital structure has

decreased the profitability; where as in Iran Mohammadzadeh and others (2013) concluded that inside financing shows a greater positive impact on profitability.

Primary Objective of the study is to analyse the capital structure of the steel industry- component wise dominance.

Secondary Objective is to establish a relationship between the capital structure and profitability of the steel industry.

Methodology- With the help of SPSS package data were analysed by applying multivariate analysis.

With data arranged in above way a multivariate analysis is done through applying SPSS package which gives us the following findings.

Data source in secondary: the private sector TATA STEEL is considered as case. Analysing the capital structure components and comparing the various profitability ratios of TATASTEEL as a case for a period of 5 years starting from 2010-11 to 2014-15

Extracts of Balance Sheets

Amount in Crore (Rs.)

Liabilities	2010-11	2011-12	2012-13	2013-14	2014-15
a)share capital	959.41	971.41	971.41	971.41	971.41
b)reserve and surplus	45807.02	51649.95	54238.27	60176.58	65692.48
c) share warrants	178.2				
d)preference share					
2) Hybrid Perpetual Securities	1500	2275	2275	2275	2275
3) Non-current Liabilities					
a) long term loan	24499.05	21353.2	23565.57	23808.09	23900.37
b) deferred tax liability	936.8	970.51	1843.74	2038.98	2250.41
c) other long term liability	373.88	216.05	380.87	983.52	1087.74
d) long term provision	2201.47	1851.3	2113.42	1905.05	2875.92
4) Current Liabilities					
a) short term borrowings	149.13	65.62	70.94	43.69	34.88
b) trade payables	4464.81	5973.23	6369.91	8263.61	5801.98
c) other current liability	6262.1	8798.55	8503.54	8671.67	9111.52
d) short term provision	2219.85	2066.24	1544.26	1902.81	1675.41

Source: Annual Reports of Tata Steel Limited

Financial Ratios

	2010-11	2011-12	2012-13	2013-14	2014-15
Return on Average Capital Employed	14.87%	13.07%	11.94%	12.58%	8.41%
Net Debt to equity	0.49	0.41	0.44	0.41	0.4
Dividend Payout	19%	20%	18%	16%	14%
P/E Ratio	8.2	6.93	6.21	6.13	4.91

Source: Annual reports of Tata steel limited

From the above extract of balance sheets of TATA STEEL Ltd. And various profitability ratio and debt equity ratio it has been applied on SPSS package and

produce the following result by which analysis prepared.

Output I: Correlation of shareholders fund (SF) and components of non-current liabilities(NCL).

Correlations

		SF	LTL	DTL	OLTL	LTPR
SF	Pearson Correlation	1	.108	.912*	.877	.551
	Sig. (2-tailed)		.863	.031	.051	.336
	N	5	5	5	5	5
LTL	Pearson Correlation	.108	1	.372	.469	.464
	Sig. (2-tailed)		.863	.538	.425	.431
	N	5	5	5	5	5
DTL	Pearson Correlation	.912*	.372	1	.843	.504
	Sig. (2-tailed)	.031	.538		.073	.387
	N	5	5	5	5	5
OLTL	Pearson Correlation	.877	.469	.843	1	.567
	Sig. (2-tailed)	.051	.425	.073		.319
	N	5	5	5	5	5
LTPR	Pearson Correlation	.551	.464	.504	.567	1
	Sig. (2-tailed)	.336	.431	.387	.319	
	N	5	5	5	5	5

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

- (a) Co-relation between long term loan (LTL) and shareholders fund (SF) of the concern.
 The result as per co-relation matrix depicts that SF is positively correlated (0.108) with LTL. It means that if LTL increases, SF will also increase but not significantly.
- (b) Co-relation between deferred tax liabilities (DTL) and shareholders fund (SF) of the concern.
 The result as per co-relation matrix shows that SF is positively co-related with (0.912) DTL. It means if SF increases , DTL also increases considerably which means companies earnings will go up that's why tax burden also increases.
- (c) Co-relation between deferred tax liability (DTL) and long term liability (LTL) of the concern.
 The result as per co-relation matrix shows that LTL is positively co-related with (0.372) DTL. It means if LTL increases, DTL also increases to some extent, which implies LTL will

increase the earning of the firm that's why DTL goes up.

- (d) Co-relation between other long term liabilities (OLTL) and shareholders fund (SF) of the concern.

The result as per co-relation matrix shows that SF is positively co-related (0.877) with OLTL. It means if SF increases, OLTL also increases for high geared up capital and if it has been used properly then company earnings will go up significantly.

- (e) Co-relation between other long term liabilities (OLTL) and long term loan (LTL) of the concern.

The result as per correlation matrix shows that LTL is positively correlated (0.469) with OLTL. It shows if LTL: increases, OLTL also increase moderately , which means company not only use or raise LTL but at the same time OLTL also increases for expansion and diversification of the concern.

- (f) Co-relation between other long term liabilities (OLTL) and deferred tax liability (DTL) of the concern.

The result as per co-relation matrix shows that DTL is positively co-related (0.843) with OLTL. It means increase in OLTL will show increase in DTL and to get the benefit of tax leverage.

- (g) Co-relation between long term provisions (LTPR) and shareholders fund (SF) of the concern.

The result as per co-relation matrix shows that SF is positively co-related

(0.551) with LTPR . it means if SF increases , employees benefit costs and other provisions will increase that means there will be a positive impact on employees motivation and hygiene factor.

- (h) Co-relation between long term provision (LTPR) and long term loan (LTL) of the concern.

The result as per co-relation matrix shows that LTL is positively co-related (0.464) with LTPR. It implies that if LTL (more than 12 months) increases, LTPR also increases to some extent.

- (i) Correlation between long term provisions (LTPR) and deferred tax liabilities (DTL) of the concern.

The result as per co-relation matrix shows that DTL is positively co-related (0.504) with LTPR. It implies that DTL will increase if employees benefit expenses and other provisions increase.

- (j) Co-relation between long term provisions (LTPR) and other long term loan (OLTL) of the concern

The result as per co-relation matrix shows that OLTL is positively co-related (0.567) with LTPR. It means that LTPR will increase when OLTL will increase. That implies that if employees benefit expenses and other provision will increase when other long term loan increases.

Output II: Correlation between shareholders fund (SF) and components of current liabilities.

Correlations

		STB	TP	OCL	STP	SF
STB	Pearson Correlation	1	-.711	-.973**	.647	-.888*
	Sig. (2-tailed)		.178	.005	.238	.044
	N	5	5	5	5	5
TP	Pearson Correlation	-.711	1	.622	-.370	.548
	Sig. (2-tailed)	.178		.263	.540	.339
	N	5	5	5	5	5
OCL	Pearson Correlation	-.973**	.622	1	-.653	.785
	Sig. (2-tailed)	.005	.263		.232	.116
	N	5	5	5	5	5
STP	Pearson Correlation	.647	-.370	-.653	1	-.656
	Sig. (2-tailed)	.238	.540	.232		.230
	N	5	5	5	5	5
SF	Pearson Correlation	-.888*	.548	.785	-.656	1
	Sig. (2-tailed)	.044	.339	.116	.230	
	N	5	5	5	5	5

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

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

- (a) Correlation between shareholders fund (SF) and short term payables (STP)

The relation between shareholders fund and short term provision is -.656 which implies that short term provision (STP) is negatively correlated with shareholders fund (SF). It means increase in SF increases will increase liquidity and it will reduce the STP.

- (b) Correlation between shareholders fund (SF) and components other current liability (OCL).

The relation between shareholders fund and other current liability is 0.785 which implies that OCL is positively correlated with SF which means if SF increases OCL will also increase. It shows that SF are used for production which increases the short term obligations coming out of it.

- (c) Correlation between shareholders fund (SF) components of trade payables (TP).

The relation between SF and TP is 0.548. It shows that TP is positively

correlated with SF. It means if SF increases, then TP will also increased it will help to reduce borrowings from outside market and so it will reduce the payment of interest.

- (d) Correlation between shareholders fund (SF) and components of short term borrowings (STB) .

The relation between SF and STB is -0.888 which shows that STB is negatively correlated with shareholders fund. It implies that if SF increases then STB will decrease which implies long term fund increases which help to growth and diversification.

- (e) Correlation between short term payables (STP) and elements of other current liabilities (OCL).

The relation between STP and OCL is -0.653 which shows that OCL is negatively correlated. If STP increases OCL will decrease significantly. It implies if STP increases then there will be lesser amount required for OCL which ultimately increase the liquidity position of the company and to meet the current obligation.

- (f) Correlation between short term payables (STP) and trade payables (TP).

The relation between STP and TP is -0.370 which means that STP is negatively correlated with TP. If STP increases then TP will reduce marginally which ultimately reduce the payment of current obligations

partially and by which firm liquidity position will improved to some extent.

- (g) Correlation between short term payables (STP) and short term borrowings (STB) of the firm.

The relation between STP and STB is 0.647 which shows that STP is positively correlated with STB. If STP increases then STB also increases which will ultimately reduce the payment of current obligations partially by which firm liquidity position will be improved.

- (h) Co-relation between other current liabilities (OCL) and trade payables (TP) of the firm.

The relation between OCL and TP is 0.622 which shows that TP is positively co-related with OCL. It implies that if OCL increases then TP also increases which will help to reduce the long term borrowings. This will reduce the interest burden of the firm in long run perspective.

- (i) Co-relation between other current liabilities (OCL) and short term borrowings (STB) of the concern.

The result as per co-relation matrix shows that STB is negatively co-related (-0.973) with OCL. If OCL increases then STB will significantly reduce. It will increase the liquidity position. It will increase the liquidity position of the business.

- (j) Correlation between trade payables (TP) and short term borrowings (STB) of the concern.

The result as per co-relation matrix shows that TB is negatively co-related (-0.711) with TP. It implied that if TP increases then STB will reduce

significantly which will reduce interest burden of the firm.
Output III: Correlation between Capital Structure and Profitability Ratios.

Correlations

		DE	PER	DPR	ROCE
DE	Pearson Correlation	1	.821	.509	-.434
	Sig. (2-tailed)	.088	.382	.466	
	N	5	5	5	5
PER	Pearson Correlation	.821	1	.825	-.702
	Sig. (2-tailed)	.088		.085	.186
	N	5	5	5	5
DPR	Pearson Correlation	.509	.825	1	-.780
	Sig. (2-tailed)	.382	.085		.120
	N	5	5	5	5
ROCE	Pearson Correlation	-.434	-.702	-.780	1
	Sig. (2-tailed)	.466	.186	.120	
	N	5	5	5	5

- (a) Co-relation between ROCE and DPR of the concern.

The result as per co-relation matrix shows that DPR is negatively co-related (-0.780) with ROCE .It means if ROCE increases , DPR will reduce significantly which will ultimately help to increase reserve and surplus of the concern.

- (b) Co-relation between ROCE and PER of the concern.

The result as per co-relation matrix shows that PER is negatively co-related (-0.702) with ROCE, which shows that if ROCE increases, PER will decrease significantly which

means market price per share will fall considerably.

- (c) Co-relation between ROCE and DE of the firm.

The result as per co-relation matrix shows that DE is negatively co-related (-0.434) with ROCE .It means that if ROCE increases then DE will decrease to some extent which implies reduction of interest burden of the firm.

- (d) Co-relation between DPR and PER of the concern.

The result as per co-relation matrix shows that PER is positively co-related (0.825) with DPR, which

shows that when DPR increases than PER also increases significantly which is very much positive from companies view point

- (e) Co-relation between DPR and DE of the concern.

The result as per co-relation matrix shows that DE is positively co-related (0.509) with DPR which shows that if DPR increases then DE also increases to some extent. It means DPR will increase when the company is taking the advantage of debt capital.

- (f) Co-relation between PER and DE of the concern.

The result as per co-relation matrix shows that DE is positively co-related (0.821) with PER which means PER increases when DE ratio increases.

Conclusions

In this study, co-relation analysis has been used to indentify the measure, how shareholders fund has an impact on noncurrent liabilities and current liabilities and also various profitability ratios on other profitability measurement elements. From the above analysis it has been clearly shown that shareholders fund has a positive co-relation with the elements of noncurrent liabilities but there will be a mixed impact of shareholders fund and current liability. On the other side from profitability point of view debt equity ratio has a positive impact on price earning ratio and dividend payout ratio which implies debt capital will improve on profitability measurement ratios.

Limitations and Scope of Future Research:

The present study had certain limitations which provide scope for further studies. The sample size is not large enough to make generalised conclusions. The data collected for the study was limited to 5 years which again posses question mark to the authenticity of results. Apart from this panel of data which is considered-better for predicting the capital structure and its impact of profitability. There is a clearly scope for more research that can inform and understanding of how that capital is structure, how it connects with the profitability and what elements of ca

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