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CORPORATE PROFITABILITY AND WORKING CAPITAL MANAGEMENT: A CASE STUDY OF STEEL AUTHORITY OF INDIA LIMITED (SAIL)

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ABSTRACT

Profitability is the financial measure of corporate ability to earn profit. It can be measured through profitability ratio such as gross profit ratio, net profit ratio, return on capital employed, return on total assets, return on equity etc. Working capital management refers to the management of current assets and current liabilities. It reflects the corporate ability to continue its operation. It can be assessed through current ratio, liquid ratio, debtor turnover ratio, working turnover ratio and inventory turnover ratio. The Steel Authority of India Limited (SAIL), a leading steel company in India, shows a tremendous growth over the year. It contributed to approx. 66.23% of total India steel production in 2013-14. It has a turnover of Rs. 51,866 crore in 2013-14 which is 5% higher from previous year. The present study analyzes the profitability and working capital management of SAIL. It also studies the relationship between these variable using correlation and regression analysis.

Key Words: Profitability, Working Capital Management, SAIL, Steel Sector, Economic Growth

INTRODUCTION

The economic reform initiated in 1991, paved the path of economic growth in the country. The concept of LPG and other policies initiative give the impetus for the entry of new players in steel industry. The Indian steel sector plays a vibrant and dynamic role in economy development. The Indian steel industry is poised for a robust growth over the year and become a backbone of economic growth which indicates that the economic growth can be measured in term of steel sector growth i.e., per capita steel consumption. From the research it has been found that there exists a strong relationship between the level of economic growth and quantum of steel consumption in India.

The present study deals with the corporate profitability and working capital management of Steel Authority of India Limited (SAIL). A finance manager is required to take a decision regarding working capital management in such a way that there is a trade-off between liquidity and profitability. Various research finding validates that working capital management has a significant impact on firm liquidity and profitability.

The term corporate profitability refers to the ability of corporate to earn profit. It reflects the optimum utilization of available resources by the company. It acts as a gauge to compute the operational efficiency and performance of the company. Higher the value of profitability indicates the higher performance or vice-versa. There is difference between profit and profitability. Profit is the excess of revenue over the cost (absolute measure) while profitability is the ability to make profit (relative measure). The corporate profitability can be measured through profitability ratio. In this study gross profit ratio, net profit ratio, operating profit ratio, return on capital employed, return on total assets, return on equity and earnings per share has been used. Many analysts prefer return on capital employed and return on total assets to measure the overall profitability of the company (Bhalla, 2000).

Working capital management is one of the financial decision through which a financial manager manages the working capital. Working capital management involves the decision regarding the composition and amount of current assets and current liabilities. Basically it is the management of short term (current) assets and liabilities. A working capital is the life blood of any corporate. It is the amount which is required for meeting the day-to-day expenses. There are two concept of working capital i.e., gross working capital and net working capital. The gross working capital is the sum total of current assets while the net working capital is the excess of current assets over current liability. There are different approaches to working capital policies i.e., aggressive, conservative, matching and zero working capital policy (Khan and Jain, 2010). An efficient working capital management reflects the corporate ability to continue its operations and shows its ability to meet short-term obligations. This leads to the value creation for the shareholders (Neab abd Noriza, 2010). A working capital management also affects the liquidity and profitability of the company. An efficient working capital increases the profitability of the company and ensures sound liquidity (Sen and Eda, 2009). Excess or shortage of working capital is dangerous for the company. Working capital management can be measured with the help of current ratio, liquid ratio, debtor turnover ratio, working turnover ratio, inventory turnover ratio etc. To analyze the efficiency of working capital of SAIL, the above discussed ratio has been used.

STEEL INDUSTRY OF INDIA

Developing country like India, the steel industry plays a significant role in economy development. The socio-economic development of the country can be measured through per capita steel consumption. The per capita steel consumption in India has risen from 45

kg in 2008-09 to about 60 kg in 2013-14. If we talk about the steel production, India has 4th position in crude steel production (First: China) and is expected to become 2nd largest steel producer in the world by 2016. The production has risen from 65.84 million tonnes per annum (MTPA) in 2009-10 to 81.54 MTPA in 2013-14 at a Compound Annual Growth Rate (CAGR) of 7% (Chatterjee, 2000) The domestic demand of steel is expected to grow at an annual average growth rate of 10%. The contribution of steel sector in country GDP is approx. 2% and provides an employment to more than 6 lakh people. Being a key contributor, the Government of India allow 100% FDI in this sector. In 2005, the Government announced a National Steel Policy to provide proper guidelines and framework for the development of steel industry. With the passage of time and global changes, the National Steel Policy, 2005 required changes. To make the National Steel Policy more effective, the Ministry of Steel, GOI proposed a draft of New National Steel Policy to replace the existing National Steel Policy, 2005 to cater the current requirement and targeted the production of crude steel to 300 MPTA.

Steel Authority of India Limited (SAIL)

The Steel Authority of India Limited (SAIL), a Central Public Sector Enterprise (CPSE) having a status of Maharatna Company registered under the Companies Act, 1956. It headquarter is located at New Delhi. Over the year, it shows a tremendous growth and become a leading steel producing company in the country. It produces a wide variety of iron and steel products for domestic and industrial purpose at its five integrated steel plants located at Bhilai, Rourkela, Durgapur, Bokaro and Burnpur and three special and alloy steels plants located at Durgapur, Salem and Bhadravati. SAIL has its own Central Marketing Organisation (CMO) which is located at Kolkata to manage the countrywide marketing and distribution network. The authorised capital of SAIL is 5000 crores while the paid-up capital was 4130.52 crore as on 31.03.2014, out of which 80% is held by the Government of India and rest 20% by the Financial Institutions/GDR holders/Banks/ Employees/Individuals etc. SAIL's provides an employment to approx. 97897 people as on April 1, 2014.

REVIEW OF LITERATURE

Practically speaking, working capital management has turn into a standout amongst the most critical issues in the associations where numerous monetary officials are attempting to recognize the essential working capital drivers and the suitable level of working capital (Lamberson 1995). Shin and Soenen (1998), Filbeck and Thomas (2005) in their paper stated that working capital has a significant impact on profitability and liquidity both. The efficient working capital management was mandatory for enhancing the net wealth. They used correlation coefficient and regression analysis to analyze the relationship. Further they stated that there was a strong negative relationship between lengths of firm's net trading cycle and profitability. Deloof (2003) stated that most of Belgian firms had a high proportion of cash in working capital. It can be expected that the way in which working

capital is managed, will have a significant impact on the profitability of those firms. Through various analyses he concluded that there is a negative relationship between corporate profitability and working capital components.

Padachi (2006); Raheman and Nasr (2007) stated the impact of different variables of working capital management on the Net Operating Profitability of Pakistani Firms. They concluded that there was a strong negative relationship between working capital management variables and profitability. He also stated that with the increase of cash conversion cycle, profitability decreases. So firm and managers should try to reduce the cash conversion cycle to create a positive value for shareholders. In the same line Dong (2010) studied the companies listed in Vietnam stock market. The study reveals that the working capital management has a significant impact (strong negative) on firms' profitability and liquidity. He also suggested that decrease in account receivable and inventories period will increases the profitability of the firm. The study carried out by Mathuva (2010) presented a positive relationship between working capital management and profitability.

Bagchi, Chakrabarti et al (2012) studied the impact of working capital management components on profitability of FMCG firms. He suggested that working capital management is very crucial decision in financial management and have a significant effect on liquidity and profitability of the firm. The same relationship was seen in the study of Ghosh and Maji (2003).

Maheshwari (2014) studied the Indian steel industry by selecting the top four Indian steel Companies including Steel Authority of India Limited (SAIL). The study shows that the performance of steel industry is quite satisfactory. The efficient working capital management performs the crucial role in maintaining proper liquidity, solvency and profitability of the concern.

OBJECTIVE OF THE STUDY

1) To study the profitability and working capital management of SAIL.
2) To study the relationship between profitability and working capital management.

RESEARCH METHODOLOGY

The present study is a descriptive and analytical in approach. It is purely based on secondary data which were collected from the published annual reports of SAIL and Ministry of Steel, journals, books, newspaper, other publications, various websites etc. To analyze the SAIL's corporate profitability and working capital management various tools such as ratio analysis, mean, standard deviation, coefficient of variation, skewness, and kurtosis have been used. For studying the relationship between the corporate profitability and working capital management, coefficient of correlation, regression analysis and F-test have been used. The study covers the period from 2006-07 to 2013-14.

HYPOTHESES

H_0: There is no relationship between corporate profitability and working capital management of SAIL.

H_1: There is relationship between corporate profitability and working capital management of SAIL.

ANALYSIS OF PROFITABILITY AND WORKING CAPITAL MANAGEMENT OF SAIL

The corporate profitability and working capital management of SAIL has been analyzed through ratio analysis. Corporate profitability is measured through gross profit ratio, net profit ratio, operating profit ratio, return on capital employed, return on total assets, return on equity and earnings per share while the working capital management is measured through current ratio, liquid ratio, debtor turnover ratio, working capital turnover ratio and inventory turnover ratio. To examine the relationship between profitability and working capital management, correlation and regression analysis has been used.

Profitability of SAIL

The gross profit ratio (GPR) reflects the production efficiency of the corporate. It expresses the relationship between gross profit and net sales. Table 1 portray that the GPR of SAIL's has been decrease from 32.17% in 2006-07 to 14.38% in 2013-14. The net profit ratio (NPR) reflects the management efficiency in managing the corporate activities. Table 1 depict that the NPR has been decreases from 18.28% in 2006-07 to 5.66% in 2013-14. The return on capital employed (ROCE) reflect the profitability or overall efficiency of capital employed. It is also known as return on investment (ROI). If the value of ROCE is less than cost of capital employed, it is very difficult to the company to operate and sustained its business. The ROCE of SAIL shows a declining trend. It was 38.29% in 2006-07 which goes down to 10.90% in 2013-14. The return on total assets (ROTA) reflects the productivity of total assets. It can be calculated by dividing the net profit after depreciation & tax but before interest to total assets. Table 1 show that ROTA has been declined from 19.32% in 2006-07 to 3.90% in 2013-14. The return on equity (ROE) reflects the corporation's profitability which has been shared by the shareholders. It shows the relationship between net profit after interest, tax and preference dividend to net worth or equity shareholders' fund. Table 1 revels that ROE has been declined from 36.09 % in 2006-07 to 6.13% in 2013-14. The earnings per share (EPS) reflect the profitability of the concern. It can be calculated by dividing the net profit available to equity shareholder to number of equity shares. The table 1 shows that the SAIL's EPS has been decreases from Rs. 15.02 in 2006-07 to Rs. 6.30 in 2013-14. The above discussed ratio has been used in determining the corporate profitability. There are no standard criteria's for the above ratio but higher the value of these ratios indicates higher profitability (favorable). In the case of SAIL, all the above ratios show a declining trend from 2006-07 to 2012-13 which indicates the poor performance and profitability. In 2013-14, the value of these ratios increase which signifies the improvement in the performance.

Table 1 : Profitability Ratios of SAIL

ROTA	3.9	3.46	5.53	7.07	10.46	11.87	19.05	19.32	10.08	6.34	62.84	0.65
ROE	6.13	5.29	8.9	13.23	20.27	21.92	32.76	36.09	18.07	11.79	65.25	0.51
EPS	6.3	5.3	8.6	11.87	16.35	14.94	18.25	15.02	12.09	4.86	40.17	-0.31
CR	1.77	2.12	2.33	3	3.54	2.82	2.79	3.14	2.68	0.59	22.07	-0.22
LR	0.77	0.89	1.2	2.07	2.72	2	2.06	2.11	1.72	0.7	40.92	-0.27
DTR	8.43	9.94	9.61	10.34	11.61	14.27	12.96	14.66	11.48	2.29	19.92	0.28
WCTR	3.95	3.01	2.82	1.75	1.44	1.93	2.34	2.44	2.49	0.82	32.99	0.6
ITR	3.04	2.75	3.32	3.78	4.49	4.25	5.76	5.1	4.06	1.04	25.61	0.4

Sources: Compiled 3 from the various Annual Reports of SAIL

Working Capital Management of SAIL

The current ratio (CR) reflects the corporate ability to meet its current obligation. It gives the idea about the short term solvency. The standard norm for CR is 2:1. Table 1 reveals that the CR has been decrease from 3.14:1 in 2006-07 to 1.77:1 in 2013-14. Up to the 2012-13, the CR was above the standard norms. In 2013-14, the CR becomes 1.77 which indicates that there may be a little bit problems in meeting the short term obligation if the quality of current assets is not so good. The liquid ratio (LR) reflects the corporate ability to meet short term obligations from liquid assets. It is the ratio between liquid assets (current assets – inventory) and current liabilities. The standard norm for LR is 1:1. Table 1 reveals the decreasing trends in LR. It decrease from 2.11:1 in 2006-07 to 0.77:1 in 2013-14 which indicates that SAIL has some problems in meeting its short term obligations. The debtor turnover ratio (DTR) reflects the efficiency with which the debtors are managed. A higher value of DTR represents more efficient management of receivables or sales. But a very high DTR restricted the credit sale which leads to the loss revenue. In case of SAIL, it decreases from 14.66 in 2006-07 to 8.43 in 2013-14. The working capital turnover ratio (WCTR) reflects the working capital efficiency of the corporate. It can be calculated by dividing the net sales to working capital. Higher value of WCTR indicates the efficient utilization of working capital. Table 1 reveals that WCTR decrease from 2.44 in 2006-07 to 1.44 in 2009-10 but from onwards it shows an increasing trends and risen up to 3.95 in 2013-14. The inventory turnover ratio (ITR) reflects the efficiency with which the inventory is utilized which means how effectively inventory is converted into sales. A very high or very low ITR is unfavourable for the company because it indicates low or high investment in inventory respectively. The ITR of SAIL decreases from 5.10 in 2006-07 to 3.04 in 2013-14 with the average of 4.06.

Correlation Analysis

The relationship between corporate profitability and working capital management component was analyzed through Pearson Correlation Coefficient (r) Analysis. The value of Correlation Coefficient varies between -1 to +1 and has a different interpretation for different values. **Table 2** portray the relationship amongst the studying parameters. The corporate profitability has been measured through GPR, NPR, ROCE, OPR, ROTA, ROE and EPS while the efficiency of working capital management has been measured through CR,

LR, DTR, WCTR and ITR. The analysis reveals that GPR, NPR and OPR have a high degree of positive relationship with CR, LR, DTR and ITR and this relationship are statistically significant. But it has a negatively related with WCTR and is not statistically significant. The ROCE and ROTA are positively related with CR, LR, DTR, ITR and negatively related with WCTR but only the relationship with DTR and ITR is statistically significant. The ROE is positively related with CR, LR, DTR, ITR and negatively related with WCTR but the relationship with CR and WCTR are not statistically significant. EPS has positive relationship with CR, LR, DTR, and ITR and negative relationship with WCTR but all these relationship are statistically significant. From the analysis it can be conclude that there is a significant relationship between corporate profitability and working capital management.

Table 2 : Pearson Correlation Coefficient between Profitability and Working Capital Management Parameters

Parameters	GPR	NPR	ROCE	OPR	ROTA	ROE	EPS	CR	LR	DTR	WCTR	ITR
GPR	1	.998**	.936**	.995**	.940**	.956**	.968**	.820*	.866**	.833*	-0.66	.972**
NPR		1	.935**	.998**	.933**	.949**	.978**	.837**	.883**	.841**	-0.7	.971**
ROCE			1	.947**	.989**	.980**	.885**	0.637	0.68	.871**	-0.5	.971**
OPR				1	.940**	.955**	.971**	.833*	.871**	.854**	-0.69	.970**
ROTA					1	.996**	.865**	0.623	0.67	.875**	-0.45	.966**
ROE						1	.879**	0.679	.712*	.895**	-0.5	.960**
EPS							1	.839**	.908**	.795*	-.765*	.943**
CR								1	.981**	0.659	-.928**	0.695
LR									1	0.673	-.923**	.762*
DTR										1	-0.57	.795*
WCTR											1	-0.553
ITR												1

Sources: Based on Calculation (Using SPSS)

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

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

HYPOTHESIS TESTING

H_0 (Null Hypothesis): There is no relationship between corporate profitability and working capital management of SAIL

H_1 (Alternate Hypothesis): There is relationship between corporate profitability and working capital management of SAIL.

To test the hypothesis regression analysis has been used. In regression analysis we make a prediction about the variable. The variable whose value is predicted called dependent variable while the variable whose value is used for prediction called independent variable. The corporate profitability can be effectively measured with the help of ROCE/ROI and ROTA. For establishing and determining the contribution of working capital management component in corporate profitability we required to develop a functional model. From

the analysis of those models we can easily explain the relationship among the variables. The models are as follows:

Model 1 $ROCE = \beta0 + \beta1\ (CRt) + \beta2\ (LRt) + \beta3\ (DTRt) + \beta4\ (WCTRt) + \beta5\ (ITRt) + \varepsilon_t$

Model 2 $ROTA = \beta0 + \beta1\ (CRt) + \beta2\ (LRt) + \beta3\ (DTRt) + \beta4\ (WCTRt) + \beta5\ (ITRt) + \varepsilon_t$

The result of regression analysis of first model is showed is **table 3**. The value of R (multiple correlation coefficients) is 0.999 which indicate a very high degree of association between models variable. The value of R square indicates that 99.9% variability in ROCE is caused by CR, LR, DTR, WCTR and ITR. It means there is a strong relationship between ROCE and working capital management component. **Table 4** indicates that the formulated model is statistically significant and can be used for the prediction of ROCE. This favors the rejection of null hypothesis.

Table 3 : Model Summary

Model	R	R Square	Adjusted R Square	R Square Change	F Change	Sig. F Change	Durbin-Watson
1	.999a	0.999	0.995	0.999	269.756	0.004	3.228

a. Predictors: (Constant), ITR, WCTR, DTR, CR, LR

b. Dependent Variable: ROCE/ROI

Table 4: ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	851.316	5	170.263	269.756	.004a
	Residual	1.262	2	0.631		
	Total	852.578	7			

a. Predictors: (Constant), ITR, WCTR, DTR, CR, LR

b. Dependent Variable: ROCE/ROI

Table 5 shows the beta coefficient of the independent variable and its significance. The p value of ITR and LR is less than 0.05 which reflects that these variables have a major contribution in deciding the value of ROCE. Now the Model 1 can be written as

$ROCE = -29.414 + 12\ (CRt) + -17.648(LRt) + 1.1019(DTRt) + -2.823(WCTRt) + 11.632(ITRt) + \varepsilon_t$

Table 5: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-29.414	6.423		-4.58	0.045
	CR	12	3.061	0.642	3.921	0.059
	LR	-17.648	3.371	-1.123	-5.235	0.035
	DTR	1.019	0.243	0.211	4.187	0.053
	WCTR	-2.823	1.256	-0.21	-2.247	0.154
	ITR	11.632	0.8	1.096	14.544	0.005

a. Dependent Variable: ROCE

The result of regression analysis of second model is showed is **table 6**. The value of R (multiple correlation coefficients) is 0.999 which shows a tight bound in model variables. The value of R square indicates that 99.8% variability in ROTA is caused by CR, LR, DTR, WCTR and ITR. **Table 7** indicates that the formulated model is statistically significant because the p value of f-test is less than 0.05. It indicates that the value ROTA is influenced by working capital management which means there is a relationship between these two. So the null hypothesis is rejected and alternate is accepted.

Table 6 : Regression Statistics Model Summary[b]

Model	R	R Square	Adjusted R Square	R Square Change	F Change	Sig. F Change	Durbin-Watson
2	.999a	0.998	0.993	0.998	194.352	0.005	2.946

a. Predictors: (Constant), ITR, WCTR, DTR, CR, LR

b. Dependent Variable: ROTA

Table 7 : ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
2	Regression	280.389	5	56.078	194.352	.005a
	Residual	0.577	2	0.289		
	Total	280.966	7			

a. Predictors: (Constant), ITR, WCTR, DTR, CR, LR

b. Dependent Variable: ROTA

Table 8 shows the beta coefficient of the independent variable and its significance. The p value of ITR and DTR is less than 0.05 which reflects that these variables have a major contribution in deciding the value of ROTA. Now the Model 2 can be written as:

$$ROTA = -33.432 + 6.357\,(CRt) + -5.395(LRt) + 0.843(DTRt) + 1.666(WCTRt) + 5.402(ITRt) + \varepsilon_t$$

Table 8: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
2	(Constant)	-33.432	4.343		-7.698	0.016
	CR	6.357	2.07	0.593	3.072	0.092
	LR	-5.395	2.279	-0.598	-2.367	0.142
	DTR	0.843	0.165	0.304	5.124	0.036
	WCTR	1.666	0.849	0.216	1.961	0.189
	ITR	5.402	0.541	0.887	9.99	0.01

a. Dependent Variable: ROTA

CONCLUSION

The corporate profitability reflects the ability to make profit from the business activity. It is an indicator of management efficiency to utilize the available resources. The corporate profitability can be measured with the help of profitability ratio (relative measure) such as gross profit ratio, net profit ratio, operating profit ratio, return on capital employed, return on total assets, return on equity etc. Most of analysts prefer ROCE/ROI and ROTA to measure the corporate profitability. There are several factors which affect the corporate profitability; working capital management (WCM) is one of them. WCM deals with the management of working capital. Working capital is the amount which is required to meet the expenses of day-to-day operation. It is just like the heart of business. The efficiency of working capital is measured through current and liquid ratio, debtor turnover ratio, working capital turnover ratio, inventory turnover ratio. From the study it has been found out that SAIL corporate profitability and working capital management component has strong relationship. Through the regression analysis, we validate the model which can be used to predict the value of ROCE and ROTA. The profitability ratio has been negatively related with working capital turnover ratio while it has positively related with CR, LR, DTR and ITR. The profitability and working capital management variables of SAIL's show a downward trend for studied period except in 2013-14. In 2013-14 SAIL's shows an increasing behaviour in almost all studied variable which reflect the improvement in the performance.

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