



## AN ANALYSIS OF WORKING CAPITAL MANAGEMENT OF SELECTED STEEL COMPANIES IN INDIA

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### ABSTRACT :

Steel industry is the base for infrastructure and manufacturing industries. India is the 3<sup>rd</sup> toppest country in steel production and contributes 5.5% of total steel production. Growth of steel companies is essential for economic development of India. The study analyzed working capital management of five steel companies in India. The period of the study was ten years from 2007-08 to 2016-17. The researcher used secondary data for analysis; they were collected from annual reports of the selected companies extracted from official websites of the companies. The researcher applied Y-score model for analysis of working capital management. The study found that the performance of working capital management was good for Tata Steels Limited, since calculated Y-score of the company was above the standard norm during all the years of the study period. Performance of working capital management in terms of Y-score of JSW was good during eight years out of ten years of the study period. JINDAL performed better in terms of working capital performance during first seven years of the study period. Whereas, SAIL performed better during first half of the study period in terms of working capital management. But the performance of working capital management in terms of Y-score model of JSL was not good, since the calculated values of Y-scores were less than the standard norm during all the years of the study period.

**KEYWORDS :** Working Capital, Y-Score, Current Ratio, Cash Flow, Tangible Assets, Defensive Assets.

### INTRODUCTION

Steel is crucial for the development of any modern economy and steel is considered to be the backbone of human civilization. The level of per capita consumption of steel is one of the important indices to measure the socio-economic development and living standards of the people in any country. Steel is a product of a large and technologically complex industry having strong forward and backward linkages in terms of material flows and income generation. All major industrial economies are featured by the existence of a strong steel industry and the growth of many of these economies has been largely shaped by the



strength of their steel industries in their initial stages of development. Steel is basic material for any industry in a country. This industry provides raw material for majority of industries. Infrastructure is backbone for economic development of a country in all aspects, especially in terms of industrial development. Steel industry provides primary raw material to infrastructural development. Steel industry is growing at a rapid rate in recent decades.

The industry is considered as one of the largest industries in the world. Global steel production was 1690 million tones during 2017 and global steel production met 4 percent growth over the year 2016. India was the top 3<sup>rd</sup> country in steel production next to China and Japan in the year 2017. China contributed 832 million tones, Japan contributed 105 million tones and India contributed 101.4 million tones to total global steel production.

In India, many steel companies were established and this industry helps for economic development through providing raw material to various industries, providing employment opportunities, bringing foreign exchange through export of steel etc. Growth of these companies will develop the economy further. Growth of a company depends on efficient management of the organization. Among various aspects in management, finance is playing important role and it is base for other activities of a business. In financial management, working capital is playing pivotal role. Study of working capital management is crucial one. Hence the researcher studied working capital management of selected steel companies in the country.

## REVIEW OF LITERATURE

Amalendu Bhunia and Sri Bidhan Brahma (2011) found that liquidity position was more satisfactory in the case of TSL and unsatisfactory in the case of JSWSL. Cash management performance was weak in case of JSWSL which means liquidity crunch exists. There existed a relationship between liquidity and profitability indicators. Amalendu Bhunia and Amit Das (2012) found a small relationship between WCM including working capital cycle and profitability. Multiple regression tests confirmed a lower degree of association between the working capital management and profitability. Rajavathana and Ganesamoorthy (2013) in their study the selected companies did not perform well in terms of working capital management. The study also found that on the basis of the results of Y-score model, the working capital management of both the companies was good during the first half of the study period but during the second half of the study period it was not good. Venkatesan and Nagarajan (2013) evidenced that the overall return on assets of selected steel company was sound except kalyani steel company. The operating expenses ratios of selected steel companies in India were good. Shrabanti Pal (2016) evidenced that all the ratios except quick ratio, debt equity ratio and earnings per share showed that the ratios during pre and post crisis period were independent of global financial turmoil. The results of correlation analysis showed that most of the variables share a statistical significant relation with the profitability factor. Priyanka Singh (2017) found in the study that liquidity position of SAIL was found to be satisfactory during the period of study.

## OBJECTIVE

- To study the working capital performance of selected steel companies in India.

## METHODOLOGY

The study analysed working capital management of five steel companies in India. For this purpose the researcher selected Steel Authority of India Limited, Tata Steels Ltd., Jindal Stainless Limited, Jindal Steel and Power Limited and JSW Steel Limited as sample of the study. The study was undertaken for the period of ten years spanning from 2007-08 to 2016-17. The researcher used secondary data for analysis. For this purpose the researcher required accounting data, which were extracted from annual reports of the concerned companies and they were collected from concerned websites of the companies. The researcher applied ratio analysis as financial tool.

In order to analyse overall working capital performance of the selected steel companies, the researcher applied Y-score model for analysis. This model was propounded by Dr. S.S. Srivastava and Dr. R.A. Yadav. The researchers took 78 sample companies to make a research to measure the performance of working capital. The researchers primarily used accounting ratios; the researchers found four major accounting ratios which were relevant and could explain the performance of working capital of the sample companies. These ratios are (a) Cash flow to total tangible assets; (b) Current ratio; (c) Net sales to total

tangible assets; and (d) Defensive assets to total operating expenses. The researcher has applied the above methodology to analyse working capital management of the selected steel companies in India.

Assessment of working capital position as per the model is:

$$Y = 14.5166 V2 + 0.0015 V25 + 0.8715 V31 + 0.7914 V35$$

Where

V2 = Cash flow to total tangible assets

$$\frac{\text{Cash Flow}}{\text{Total Tangible Assets}}$$

V25= Current assets to current liabilities

$$\frac{\text{Current Assets}}{\text{Current Liabilities}}$$

V31= Net sales to total tangible assets

$$\frac{\text{Net Sales}}{\text{Total Tangible Assets}}$$

V35= Defensive assets to total operating expenses

$$\frac{\text{Defensive Assets}}{\text{Total Operating Expenses}}$$

The model prescribed cut-off for measuring working capital performance of manufacturing companies. The cut-off fixed by the mode is 1.7068. If the calculated Y-Score of a company is higher than the cut off, the working capital efficiency is good otherwise it is not good.

## RESULTS AND DISCUSSION

This part of the paper presents the results and discussion of working capital analysis in terms of Y-score model of the selected steel companies in India for the study period of ten years from 2007-08 to 2016-17.

**Table 1: Y-Score Model of SAIL**

Year	V2	V25	V31	V35	Y-Score
2007-08	0.22	1.96	0.99	0.68	<b>4.55</b>
2008-09	0.14	1.84	0.82	0.69	<b>3.29</b>
2009-10	0.12	1.90	0.61	0.96	<b>3.05</b>
2010-11	0.09	1.51	0.59	0.70	<b>2.34</b>
2011-12	0.07	1.52	0.63	0.36	<b>1.88</b>
2012-13	0.04	1.23	0.55	0.29	1.35
2013-14	0.05	0.95	0.52	0.27	1.38
2014-15	0.04	0.83	0.47	0.26	1.20
2015-16	-0.02	0.63	0.41	0.23	0.29
2016-17	0.00	0.55	0.43	0.22	0.53

Source: Computed from Secondary Data Collected from Annual Reports

Table-1 shows that the calculated Y-score of SAIL was more than the standard norm (1.7068) during the period of first years from 2007-08 to 2011-12. Hence during first half of the study period working capital

performance of SAIL was good. But the calculated Y-score was less than the standard norm during second half of the study period; hence the working capital performance of the company was not good during the second half of the study period. It was also observed that the calculated Y-score was too low during last two years and it was at alarming position. Table-2 gives the results of Y-score model for Tata Steels.

**Table 2: Y-Score Model of TATA**

Year	V2	V25	V31	V35	Y-Score
2007-08	0.11	4.64	0.39	2.95	<b>4.25</b>
2008-09	0.24	0.96	0.93	0.45	<b>4.60</b>
2009-10	0.21	1.23	0.85	0.57	<b>4.23</b>
2010-11	0.19	1.38	0.69	0.79	<b>3.95</b>
2011-12	0.17	0.76	0.74	0.36	<b>3.43</b>
2012-13	0.13	0.70	0.75	0.23	<b>2.73</b>
2013-14	0.15	0.61	0.74	0.19	<b>2.96</b>
2014-15	0.14	0.71	0.67	0.12	<b>2.64</b>
2015-16	0.10	0.68	0.58	0.24	<b>2.20</b>
2016-17	0.07	0.87	0.49	0.27	1.69

Source: Computed from Secondary Data Collected from Annual Reports

Table-2 depicts that the calculated Y-score of Tata Steels was more than the standard norm (1.7068) during nine years of the study period. It was about the standard norm during last year of the study period (2016-17). Hence the performance of working capital management of Tata Steel was good during the study period. It was also observed that the calculated Y-score of the company during the first nine years was very high compared with standard norm. Hence the company had healthy working capital position during such period. The results of Y-score model for JSW are presented in Table-3.

**Table 3: Y-Score Model of JSW**

Year	V2	V25	V31	V35	Y-Score
2007-08	0.12	0.69	0.58	0.19	<b>2.43</b>
2008-09	0.05	0.53	0.52	0.23	1.32
2009-10	0.11	0.72	0.62	0.21	<b>2.28</b>
2010-11	0.09	0.70	0.62	0.26	<b>2.06</b>
2011-12	0.07	0.81	0.70	0.34	<b>1.92</b>
2012-13	0.08	0.92	0.71	0.33	<b>1.98</b>
2013-14	0.06	0.73	0.71	0.24	<b>1.73</b>
2014-15	0.07	0.93	0.65	0.28	<b>1.81</b>
2015-16	-0.01	0.62	0.53	0.22	0.50
2016-17	0.09	0.68	0.69	0.21	<b>2.03</b>

Source: Computed from Secondary Data Collected from Annual Reports

Table-3 shows that the calculated Y-score of JSW was more than the standard norm (1.7068) during years 2007-08, from 2009-10 to 2014-15 and during 2016-17. Hence during the above years working capital performance of JSW was good as shown by the results of Y-score model. But the calculated Y-score did not attain the standard norm during the years 2008-09 and 2015-16, hence the performance of working capital

management of JSW was not good during these years, in particular the score was very low during 2015-16. The results of Y-score model for JINDAL are presented in Table-4.

**Table 4: Y-Score Model of JINDAL**

Year	V2	V25	V31	V35	Y-Score
2007-08	0.19	1.58	0.62	0.75	<b>3.95</b>
2008-09	0.15	1.22	0.58	0.77	<b>3.27</b>
2009-10	0.10	0.73	0.38	0.78	<b>2.46</b>
2010-11	0.11	0.78	0.38	0.84	<b>2.59</b>
2011-12	0.09	0.70	0.42	0.65	<b>2.22</b>
2012-13	0.07	0.84	0.39	0.73	<b>1.91</b>
2013-14	0.06	0.76	0.33	0.86	<b>1.78</b>
2014-15	0.03	0.88	0.31	0.81	1.40
2015-16	0.01	0.58	0.22	0.68	0.91
2016-17	0.02	0.61	0.24	0.62	0.96

Source: Computed from Secondary Data Collected from Annual Reports

Table-4 reveals that the calculated Y-score of JINDAL was more than the standard norm (1.7068) during the first seven years of the study period (2007-08 to 2013-14), hence during such years the performance of working capital management of JINDAL was good. But the calculated Y-score was less than the standard norm during last two years; hence the working capital performance of the company was not good during the last three years. It was also observed that the calculated Y-score of the company was decreasing over the period of time. Hence the company has to concentrate on working capital management in future. The results of working capital management of JSL in terms of Y-score model are presented in Table-5.

**Table 5: Y-Score Model of JSL**

Year	V2	V25	V31	V35	Y-Score
2007-08	0.05	1.38	0.54	0.55	1.67
2008-09	-0.03	0.89	0.49	0.43	0.38
2009-10	0.06	1.23	0.47	0.55	1.69
2010-11	0.05	1.20	0.49	0.42	1.47
2011-12	0.02	0.95	0.50	0.39	1.02
2012-13	-0.01	1.01	0.63	0.30	0.68
2013-14	-0.05	0.86	0.77	0.22	0.19
2014-15	0.05	1.14	0.45	0.70	1.62
2015-16	-0.01	1.31	0.55	0.87	1.00
2016-17	0.04	0.64	0.85	0.20	1.45

Source: Computed from Secondary Data Collected from Annual Reports

From Table-5, the calculated Y-score of JSL did not attain the standard norm (1.7068) in any of the years during the study period. Hence overall the performance of working capital management of the company was not good during the study period. Even though, the calculated Y-score was near the standard norm during the years 2007-08, 2009-10 and 2014-15, but during other years the calculated Y-score of the company was too lower than the standard norm.

## CONCLUSION

Steel is one of the key industries in India. It brings out considerable amount of foreign currencies into the country through export. The industry also provides considerable employment to people both directly and indirectly. The researcher analysed working capital position of five major steel companies in India. The study found that the performance of working capital management was good for Tata Steels Limited, since calculated Y-score of the company was above the standard norm during all the years of the study period. Performance of working capital management in terms of Y-score of JSW was good during eight years out of ten years of the study period. JINDAL performed better in terms of working capital performance during first seven years of the study period. Whereas, SAIL performed better during first half of the study period in terms of working capital management. But the performance of working capital management in terms of Y-score model of JSL was not good, since the calculated values of Y-scores were less than the standard norm during all the years of the study period.

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