

# FINANCIAL LIQUIDITY AND HEALTH ANALYSIS OF SELECTED IRON AND STEEL FIRMS IN INDIA

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## Abstract

The success of the business depends on how efficiently the resources of the business are being managed of all the resources of the business, finance plays a major role. So, it is paramount importance to manage the funds of the business in an effective manner. Here, financial management, both short term as well as long term, comes into play. Among the core industries which determines the economic development of a nation, the iron and steel industry's contribution is so significant. The industry wheels the Indian economy towards growth trajectory by way of providing mass employment to the people, building sound infrastructure and contributing substantially to the reveals of the government. Hence, it is obvious to track the growth of the industry through the lens of financial management. The financial management can be tracked through the sound analysis of the liquidity, solvency and financial health. Towards this purpose, the researcher has undertaken this study to analyze the liquidity, solvency and financial health of selected Iron and Steel firms in India. Ratio's, significant statistical tools and Z score model have been employed by the researcher to analyze the ten years financial data of the chosen five NSE and BSE listed steel producing firms. Core findings of the study include poor liquidity management of all the firms, better solvency management in TSL and sad financial health of all the firms.

***Key Words: Financial Health, Infrastructure, Ratio's, Solvency, Trajectory.***

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## 1.1. Introduction

The Iron and Steel industry in India enjoys the competitive edge over its peers in the world. The primary reasons for this advantage is being seen, as the industry sources all its required resources domestically at cheap cost. The industry elevates the country to the 3<sup>rd</sup> place in the production and consumption of steel, after China and Japan. The share of the industry to the growth of the economy is so significant, as it contributes 7 to 7.5% annually.

Liquidity refers to the firm's ability to meet its short term financial commitments to keep its operation cycle going all the times uninterrupted. Through liquidity analysis, a firm self analyze itself to know whether it's short term financial creditors are satisfied and their financial interest are being protected.

Long term solvency refers to the decision of the firm relating to judicious mixture of capital structure. The capital structure decision must be taken by a firm in the context of maximizing share holders' wealth. Through the analysis of long term solvency, a firm can insure whether its capital structure decisions contribute to the shareholders' wealth maximization.

The financial health of a firm can be taken as another parameter to know the survival of the business, both in long term and short term. To put it differently, the financial health analysis reveals how a firm manages its short term and long term financial commitments to satisfy the financial and commercial interest of all the stake holders.

## 1.2. Statement of the Problem

Though the Iron and Steel industry contribute significantly to the nation's economy over the years, its financial picture is not that much rosy in some of the firms in the industry. Particularly so, even some of the major firms are bleeding in their financial bottom-line. Hence, the researcher is quite interested to know the reasons for such dismal financial performance of the firms in the industry. So, this study is born out.

## 1.3. Review of Literature

Review helps the researcher to frame a few concepts used in the study and to formulate an analytical frame work. It has been carried out with the help of articles, reports published in different, journals and magazines by different financial institutions and from books also.

**Chandra. H. et. al. (2013)**, have studied financial health of steel firms in India by applying Altman's Z score and found out that the financial health is satisfactory but not good enough in major steel firms in India. They suggest that proper maintenance among liquidity, solvency and profitability is the only way to have good financial health for these firms.

**Sanjeeb Kumar Dey (2014)**, has compared various firms in paper industry on the criteria of liquidity, solvency and efficiency management. He is of the view that liquidity, solvency and efficiency management are closely related and mutually inclusive. So, he suggests that, a special care should be taken to include liquidity, solvency and efficiency concern, while framing the financial policies of the company.

**Ata Takeh et. al. (2015)**, have analyzed the impact of capital structure of financial performance of steel industry. They have related the capital structure of the industry with return on capital employed, return on equity and return on assets and studied how these variables affect the financial performance of Indian steel industry. They have found out that capital structure and ROCE, ROE and ROA are inter - related. They have advocated that any small change in capital structure affects these variables in a big way and significantly, affects the financial performance of the company.

**Chetana R Marvadi (2016)**, has evaluated the financial health of steel firms in India and came out with the conclusion that financial health of Jindal steel limited is satisfactory, whereas the financial health of SAIL is too healthy over a period of time. Further, he suggested that financial health of Jindal steel limited can be improved by paying attention to working capital management.

**Shrabanti Pal (2018)**, has analyzed the behaviour of financial ratios of India steel industry post –recession era and reveals that there was a positive relationship between liquidity and profitability among most of the firms in steel industry in India. Further, any behavioural change in market conditions also significantly affects the liquidity and profitability of these firms.

#### **1.4. Objectives of the Study**

The study has been conducted with the following objectives:

- To evaluate the short term and long term solvency position of selected iron and steel firms in India
- To assess the financial health of the selected iron and steel firms in India.

#### **1.5. Hypothesis of the Study:**

To fulfill the above objectives, the researcher has formulated the following Hypotheses:

- There is no significant difference exist in short term solvency ratios between the firms in the selected iron and steel firms in India.

- There is no significant difference exist in long term solvency ratios between the firms in the selected iron and steel firms in India.

**1.6. Research Methodology**

**Source of Data:** This study is based on secondary data collected from the published Annual Reports of respective iron and steel firms in India.

**Sample Size:** The study has been based on NSE and BSE listed steel companies. It is related with major five steel producing firms in India. Which are as follows: Tata Steel Limited (TSL), Steel Authority of India Limited (SAIL), JSW Steel Limited (JSWSL), Jindal Steel and Power Limited (JSWL) and Steel Exchange of India Limited SEIL).

**Period of Study:** The period of study covers ten years (2010-09 to 2017-18).

**Statistical Tools for Analysis:** Data analysis is based on some selected short term and long term financial ratios. It is fundamentally analytical in nature. Various tools like mean, standard deviation, Co-efficient of Variations and ANOVA single factor test has been applied to analyze the trends, consistency and stability along with different ratios used in Altman’s Z- Score model.

**1.7. Analysis and Interpretation**

**Table 1 Short Term Solvency Analysis of Selected Iron and Steel Firms in India**

<b>CURRENT RATIO</b>					
<b>FIRMS</b>	<b>TSL</b>	<b>SAIL</b>	<b>JSWSL</b>	<b>JSPL</b>	<b>SEIL</b>
MEAN	0.93	1.16	0.74	0.77	1.02
SD	0.29	0.51	0.12	0.19	0.16
C.V. (%)	31.59	43.46	16.73	24.05	16.06
CAGR (%)	3.86	-10.47	4.09	-7.25	-4.35
<b>QUICK RATIO</b>					
<b>FIRMS</b>	<b>TSL</b>	<b>SAIL</b>	<b>JSWSL</b>	<b>JSPL</b>	<b>SEIL</b>
MEAN	0.57	0.66	0.41	0.55	0.51
SD	0.30	0.46	0.10	0.15	0.21
C.V. (%)	52.85	70.25	24.93	26.39	40.36
CAGR (%)	4.30	-15.35	2.43	-8.45	-12.77
<b>ABSOLUTE LIQUID RATIO</b>					
<b>FIRMS</b>	<b>TSL</b>	<b>SAIL</b>	<b>JSWSL</b>	<b>JSPL</b>	<b>SEIL</b>
MEAN	0.15	0.35	0.07	0.02	0.05
SD	0.11	0.42	0.05	0.02	0.02
C.V. (%)	74.37	120.40	76.78	122.28	47.11
CAGR (%)	2.05	-39.85	-9.68	-19.44	-18.05
<b>ANALYSIS OF VARIANCE (ONE WAY ANOVA)</b>					
<b>RATIOS</b>	<b>F</b>	<b>P-value</b>	<b>F crit</b>	<b>S/NS</b>	

CURRENT RATIO	3.35	0.01*	2.58	S
QUICK RATIO	1.06	0.39	2.58	NS
ABSOLUTE LIQUID RATIO	4.56	0.00*	2.58	S

Source: Computed, S- significant, NS- not significant, \*S- significant at 5 percent Level

The current assets management of all the selected firms was not satisfactory because all the firms maintained their current ratio below the standard norm 2:1. Comparatively, SAIL fared better and JSWSL fared poor in maintaining current assets to current liabilities.

The quick ratio of all selected firms under study was not commendable. Comparatively, the quick ratio position of SAIL was good, followed by TSL, JSPL, SEIL and JSWSL respectively. The compound annual growth rate of quick ratio reveals a negative trend in all the firms except TSL and JSWSL. The absolute liquid ratios of all the selected firms were not found to be satisfactory. But, comparatively SAIL stood first, followed by TSL, JSWSL, SEIL and JSPL on the yard stick of average ratio. All firms reported a negative growth rate in respect absolute liquid assets over the years except TSL. From the above reveals that a difference in the current ratio is significant between the firms as the calculated value of F (24.37) is greater than the table value of F (2.50) at five percent level of significance.

The result of one way ANOVA test shows that, in quick ratio there is no significant difference exist in quick ratio between the firms calculated F (1.06) Value is less than the table value of F (2.58) at five percent level. In respect of current ratio and absolute liquid ratio, the result of one way ANOVA shows that there is a significant difference exist in current ratio and absolute liquid ratio between the firms of selected firms in iron and steel industry in India calculated F (3.35) & (4.56) value is greater than the table value of F (2.58) at five percent level.

**Table 2 Long Term Solvency Analysis of Selected Iron and Steel Firms in India**

<b>DEBT-EQUITY RATIO</b>					
FIRMS	TSL	SAIL	JSWSL	JSPL	SEIL
MEAN	0.92	1.32	2.03	2.03	4.51
SD	0.21	0.44	0.37	0.37	2.33
C.V. (%)	22.61	33.37	18.41	18.27	51.66
CAGR	-2.96	9.53	-2.38	-0.27	13.75
<b>PROPRIETARY RATIO</b>					
FIRMS	TSL	SAIL	JSWSL	JSPL	SEIL
MEAN	0.52	0.44	0.34	0.33	0.20
SD	0.05	0.07	0.04	0.04	0.05
C.V. (%)	9.67	16.42	12.29	11.85	23.83
CAGR	1.46	-5.38	1.84	0.30	-10.63
<b>INTEREST COVERAGE RATIO</b>					

FIRMS	TSL	SAIL	JSWSL	JSPL	SEIL
MEAN	5.19	10.01	2.41	4.23	1.09
SD	1.20	13.39	1.39	4.03	0.76
C.V. (%)	23.20	133.70	57.67	95.17	69.63
CAGR	-6.08	-35.70	5.79	-24.97	-190.11
<b>ANALYSIS OF VARIANCE (ONE WAY ANOVA)</b>					
RATIOS	F	P-value	F crit	S/NS	
DEBT-EAUIY RATIO	16.42	0.00*	2.58	S	
PROPRIETARY RATIO	56.67	0.00*	2.58	S	
INTEREST COVERAGE RATIO	2.94	0.03*	2.58	S	

Source: Computed, S- significant, NS- not significant, \*S- significant at 5 percent Level

The average debt equity ratio over the years was more in SEIL (4.51 times) and less in TSL (0.92 times), indicating that SEIL was heavily debt – loaded and TSL was lightly debt-loaded.

The average proprietary ratio was more in TSL (0.52 times), followed by SAIL (0.44 times) and JSWSL, JSPL (0.33 times) and SEIL (0.20 times). Less deviation of this ratio was reported in JSPL. JSPL was consistent in maintain this ratio over the years. In TSL, the growth of this ratio was more, as compared to others. SEIL and SAIL is registered a negative growth in proprietary ratio.

The interest cover for SAIL was more, on an average, and the firm reported more deviation in the interest cover. Consistency in interest cover was more in JSWSL and the firm has recorded a positive growth (5.79 percent) in interest cover over the years, due to growth in net profits.

The result of one way ANOVA test shows that, in debt – equity ratio, proprietary ratio and interest coverage ratio there is significant difference exist in all the long term solvency ratios between the firms calculated F value more than the table value of F (2.58) at five percent level.

**Financial Health (Altman’s Z Score Model) Analysis**

$$Z=1.2X_1+1.4X_2+3.3X_3+0.6X_4+0.99X_5,$$

Where,

- X<sub>1</sub> =Working Capital/Total Assets,
- X<sub>2</sub> =Retained Earnings/Total Assets,
- X<sub>3</sub> =EBIT/Total Assets,
- X<sub>4</sub> =Market Value of Equity/Total Debts
- X<sub>5</sub> =Sales/Total Assets
- Z = Index

**Table 3 Altman Guidelines for Healthy and Bankruptcy Zone**

	<b>Situation</b>	<b>‘Z’ scores</b>	<b>Zones</b>
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I	3 and above	Too Healthy zone	Not to all
II	1.8 - 3.0	Healthy zone	Uncertain to predict
III	Below 1.8	Bankruptcy zone	Certain to all

Source: Altman (1968)

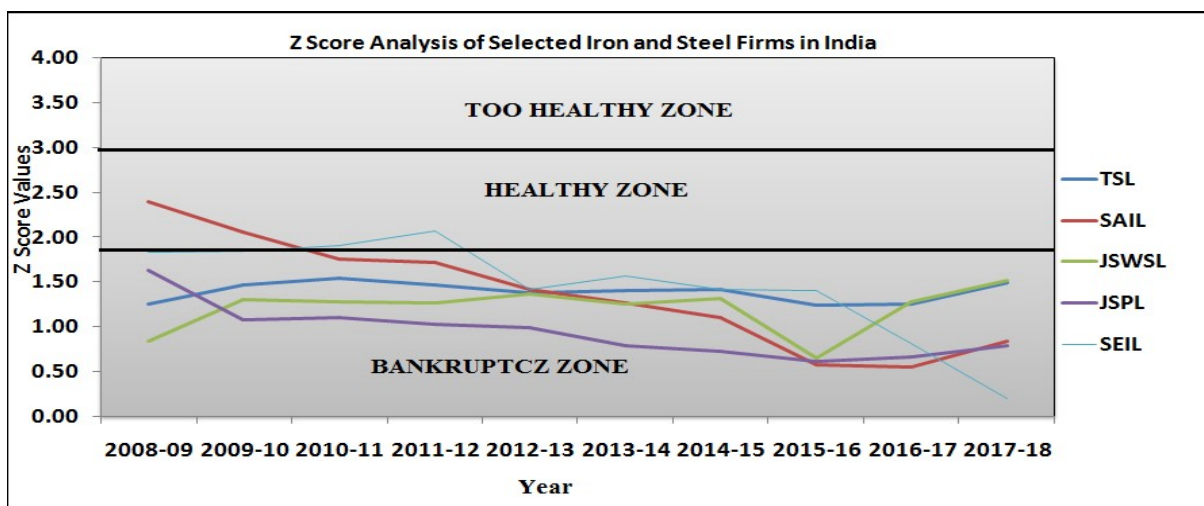
**Table 4 Financial Health (Altman’s Z Score Model) Analysis of Selected Iron and Steel Firms in India**

Year	TSL	SAIL	JSWSL	JSPL	SEIL
2008-09	1.26	2.40	0.84	1.63	1.83
2009-10	1.47	2.05	1.30	1.08	1.84
2010-11	1.54	1.75	1.28	1.10	1.91
2011-12	1.47	1.72	1.27	1.03	2.07
2012-13	1.38	1.42	1.37	0.99	1.41
2013-14	1.40	1.26	1.25	0.79	1.57
2014-15	1.41	1.11	1.31	0.72	1.41
2015-16	1.24	0.58	0.65	0.62	1.41
2016-17	1.25	0.56	1.28	0.66	0.81
2017-18	1.49	0.83	1.52	0.79	0.19

Source: Computed

The Z score of the all selected firms were less than 1.80 benchmark in all the years, except SAIL in the year 2008-09 and 2009-10 and SEIL the year 2011-12. This implies that all the firms were on the track of financial bankruptcy. The reason attributed to this state of financial health may be due to negative working capital, less EBIT and less sales.

**Chart 1 Z Score Analysis of Selected Iron And Steel Firms in India**



## 1.8. Findings

Bases on the above analysis, the researcher has summarized the results of the study in the form of the following findings:

### Financial Liquidity:

- i) Quick ratio of all the selected firms were more or less similar
- ii) Current ratio and absolute liquid ratio of all the selected firms differ
- iii) Liquidity of all the selected firms was not under the mark during the period of study.

### Financial Solvency:

- i) SEIL was more leveraged and TSL was less leveraged financially
- ii) The proprietary ratio of TSL was good and in SAIL, not good
- iii) Solvency position of all the selected firm's differ
- iv) Long term solvency position of all the selected firms were not satisfactory.

### Financial Health:

- i) SAIL shows a good financial health in the year 2008-09 and SEIL in the year 2011-12.
- ii) All the selected firms registered a poor financial health in most of the years due to working capital mismanagement.

## 1.9. Suggestions

Based on the above key findings, the following actions may be suggested by the researcher:

- i) The selected firms must focus their liquidity management in such a manner so that short term solvency position is ensured in the coming years.
- ii) The selected firms must pay attention particularly to the interest covered in such a way that profits are increased and future financial payments in the form of interest cover is sufficiently met.

## 1.10. Conclusion

From the above study, it can be concluded that, almost all the selected firms have been suffering from financial mismanagement over the years. The firms in the industry, being capital intensive in nature, must pay proper attention to their financials, from the stage of procurement of funds to the stage of its effective utilization. Hence, all the firms in the industry must see that



no stone left unturned, as far as, good financial management. This will result in increasing shareholders wealth and ultimately leads to nation – building.

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