

Analysis of Solvency Position of Indian Steel Industry

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Abstract - Solvency refers to company's ability to meet the long-term liabilities and measure the enterprise's ability to pay the interest regularly and to repay the principal (i.e., capital amount) on maturity or in pre-determined instalments at due date (Arab, 2014). It is required to continue business operations up to the predictable future. The present paper aims to analyse the solvency position of the selected steel companies by using major solvency ratios. For this study, secondary data has been collected for top 10 steel companies from 2009-10 to 2018-19. The study revealed that the solvency position of most of the companies is adequate as these are mainly dependent on owned funds.

Index Terms - Solvency Position, Debt Equity Ratio, Funded Debt to Total Capitalisation Ratio, Proprietary Ratio, Fixed Assets to Net worth Ratio, Interest Coverage Ratio.

INTRODUCTION

Solvency ratios are utilised for measuring the ability of a company to meet its long-term obligations. It also helps in determining the long-term survival of the company. Solvency ratios are sometimes mixed up with liquidity ratios but actually both are different from each other. Both are equally important and used for performance appraisal of the companies. Solvency ratios assess the company's ability to meet long term obligations whereas liquidity ratios show current ability of a companies to pay its short-term liabilities and turn assets into cash quickly (www.thebalance.com).

Stakeholder are also interested in solvency ratios of companies. The long-term creditors are interested to know the capability of a company to pay interest on long term borrowings on regular basis, repayment of principal amount as and when it became mature and the security of their loans. Khidmat & Rehman (2014) inferred in their study that suppliers examine the solvency position of the companies before delivering the goods. The investors are also concerned in solvency position to know that how much the company is risky.

A solvent company is one that owns more than it owes; in other words, it has a positive net worth and a manageable debt load (www.investopedia.com). In other word, A company is considered as solvent if its existing assets are more than or equal to the total liabilities. A company can improve its solvency position by selling some assets to repay its debt, by increasing the owner's equity and avoidance of new debt and with proper care of existing assets (Kyule, 2015).

OBJECTIVE

- To analyse the solvency position of selected steel companies
- To make suggestions for improving the long-term performance of steel industry

RESEARCH METHODOLOGY

Top 10 Companies from BT 500 index listed on stock exchanges and displaying data of last 10 years i.e. from 2009-10 to 2018-19 have been selected as sample units. For this study, secondary data has been collected mainly from Prowess database of CMIE, annual reports of the selected companies and moneycontrol.com. Statistical tools such as mean, standard deviation, co-efficient of variance and One-Way ANOVA has been implied in this study. All the hypothesis are tested with 95% of significance level

HYPOTHESIS: the subsequent hypothesis are outlined and tested in the study:

H0.1: There is no significant difference in solvency ratios of selected steel companies among the years.

H0.2: There is no significant difference in solvency ratios among the selected steel companies over the years.

DATA ANALYSIS AND INTERPRETATION

Following ratios have been calculated for liquidity analysis:

1. Debt Equity Ratio:

Table 1 represents the Debt Equity Ratio (DER) of Indian Steel Industry. Mean value of Indian steel industry showed a highly fluctuating trend during the study period. It varied between the higher of 1.77 times in the year 2016-17 and the lower of 1.07 times in 2009-10. The overall aggregate average of the industry was 1.44 times which was below the standard limit of 2:1 but was higher than the satisfactory limit of 1:1, so it can be said that on an average the solvency

position of the Indian steel industry was satisfactory. The maximum mean value of DER was shown by JDSL i.e. 4.61 times and it was minimum in case of MHSL i.e. 0.04 times. The table demonstrates that the aggregate SD of DER of Indian Steel Industry's was 0.25. During the study period the aggregate C.V. of DER of Indian steel industry was 17.38 per cent. Moreover, highest degree of variability was witnessed by SESA (89.19 per cent) with highest C.V. On the other hand, highest degree of consistency was recorded by WSCL (22.70 per cent) with lowest C.V. among all the companies during the study period.

Table 1: Debt Equity Ratio of Selected Steel Companies of India (Ratio in proportion)

Sr. No.	Company Name	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	MEAN	S.D	C.V.	MAX	MIN
1	TAST	0.87	1.08	0.68	0.58	0.48	0.48	0.44	0.41	0.67	0.59	0.63	0.20	31.54	1.08	0.41
2	JSPL	1.03	0.92	1.24	1.39	1.45	1.66	1.87	2.26	1.12	1.16	1.41	0.40	28.02	2.26	0.92
3	SAIL	0.13	0.27	0.50	0.52	0.41	0.53	0.59	0.69	0.90	1.15	0.57	0.28	48.98	1.15	0.13
4	SESA	0.00	0.00	0.27	0.08	0.28	0.38	1.17	1.11	0.54	0.67	0.45	0.40	89.19	1.17	0.00
5	JSWS	1.02	1.45	1.22	0.71	0.88	0.91	1.15	1.14	1.76	1.59	1.18	0.32	26.68	1.76	0.71
6	BSHN	3.52	3.48	2.86	2.83	2.83	3.16	3.86	5.03	3.54	6.99	3.81	1.23	32.28	6.99	2.83
7	JNDS	0.64	0.74	0.23	0.40	0.71	0.88	0.89	0.89	0.99	0.75	0.71	0.22	31.50	0.99	0.23
8	MHSL	0.09	0.06	0.05	0.04	0.05	0.03	0.03	0.02	0.02	0.02	0.04	0.02	53.64	0.09	0.02
9	WSCL	1.08	1.38	0.72	0.87	1.06	0.68	1.35	1.14	1.15	0.82	1.02	0.23	22.70	1.38	0.68
10	JDSL	2.35	4.47	3.99	3.90	4.58	7.48	4.88	4.97	6.20	3.26	4.61	1.37	29.73	7.48	2.35
	MEAN	1.07	1.38	1.18	1.13	1.27	1.62	1.62	1.77	1.69	1.70	1.44	0.25	17.38	1.77	1.07
	S. D.	1.04	1.40	1.21	1.20	1.33	2.13	1.47	1.71	1.75	1.95					
	C. V.	97.01	100.96	102.94	105.65	104.79	131.38	90.84	96.72	103.73	114.45					
	MAX	3.52	4.47	3.99	3.90	4.58	7.48	4.88	5.03	6.20	6.99					
	MIN	0.00	0.00	0.05	0.04	0.05	0.03	0.03	0.02	0.02	0.02					

Source: Calculated from Prowess, the database software package of CMIE

2. Funded Debt to Total Capitalisation:

Funded Debt to Total Capitalisation Ratio (FDTC) of Indian Steel Industry is presented in table 2. Mean value of FDTC of Indian steel industry also showed a fluctuating trend ranged from 0.41 (2009-10 & 2012-13) to 0.54 (2016-17). The overall mean value of FDTC ratio of Indian steel industry was 0.53. The highest mean value of FDTC ratio was of by JDSL i.e. 0.85 and it was minimum in case of MHSL is 0.03. This indicated that in JDSL there was most usage of

loan funds. This low ratio inferred less dependence on debt funds and showed better solvency position of the companies. The table depicts that the aggregate SD of FDTC ratio of Indian Steel Industry's was 0.05. Overall CV of FDTC ratio of Indian steel industry was recorded as 9.93 per cent. Highest degree of consistency was found in BHSN with CV of FDTC ratio as 8.88 per cent. Whereas highest degree of variability was disclosed by SESA (71.96 per cent) as reflected by their CV.

Table 2: Funded Debt to Total Capitalisation of Selected Steel Companies of India (ratio in proportion)

Sr. No.	Company Name	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	MEAN	S. D.	C.V.	MAX	MIN
1	TAST	0.46	0.52	0.41	0.38	0.32	0.32	0.31	0.29	0.30	0.35	0.37	0.07	19.68	0.52	0.29
2	JSPL	0.51	0.48	0.55	0.58	0.59	0.62	0.65	0.69	0.69	0.54	0.59	0.07	11.90	0.69	0.48
3	SAIL	0.12	0.21	0.33	0.34	0.29	0.34	0.37	0.41	0.47	0.53	0.34	0.11	33.26	0.53	0.12
4	SESA	0.00	0.00	0.21	0.08	0.22	0.27	0.54	0.53	0.35	0.40	0.26	0.19	71.96	0.54	0.00
5	JSWS	0.51	0.59	0.55	0.42	0.47	0.48	0.54	0.53	0.62	0.61	0.53	0.06	11.87	0.62	0.42

6	BSHN	0.78	0.81	0.74	0.74	0.75	0.76	0.79	0.83	0.88	0.98	0.81	0.07	8.88	0.98	0.74
7	JNDS	0.39	0.42	0.19	0.29	0.41	0.47	0.47	0.53	0.50	0.43	0.41	0.10	23.84	0.53	0.19
8	MHSL	0.09	0.06	0.03	0.03	0.03	0.02	0.02	0.02	0.01	0.01	0.03	0.02	63.78	0.09	0.01
9	WSCL	0.52	0.58	0.55	0.47	0.52	0.41	0.57	0.53	0.50	0.45	0.51	0.05	10.39	0.58	0.41
10	JDSL	0.70	0.81	0.80	0.79	0.82	0.88	0.98	1.02	0.89	0.77	0.85	0.09	10.93	1.02	0.70
	MEAN	0.41	0.45	0.44	0.41	0.44	0.46	0.52	0.54	0.52	0.51	0.47	0.05	9.93	0.54	0.41
	S. D.	0.25	0.27	0.23	0.24	0.23	0.24	0.25	0.26	0.25	0.24					
	C. V.	60.94	59.60	53.76	57.86	51.45	51.49	47.76	48.84	48.57	47.83					
	MAX	0.78	0.81	0.80	0.79	0.82	0.88	0.98	1.02	0.89	0.98					
	MIN	0.00	0.00	0.03	0.03	0.03	0.02	0.02	0.02	0.01	0.01					

Source: Calculated from Prowess, the database software package of CMIE

3. Proprietary Ratio:

Proprietary Ratio (PR) of Indian Steel Industry is presented in table 3. Mean value of PR of Indian steel industry showed a mixed trend during the study period. The overall average of the industry was 0.46, indicated weak solvency position and provide no security to creditors. The maximum mean value of PR was of JNDS i.e. 1.09 denoted strong solvency position of the company among all the selected companies and Indian steel industry as well. It was minimum in case of JDSL i.e. 0.11 indicated that the company mainly dependent on debt funds. The

maximum range of mean value of Indian steel industry is recorded in 2014-15 (0.56) and minimum in 2018-19 (0.35). Most of the companies witnessed that there was more contribution of the outsiders in financing total assets than the owners of the companies. And the solvency position was not satisfactory for most of the companies and industry. The table depicts that the aggregate SD and CV of PR of Indian Steel Industry's was 0.07 and 15.36 percent respectively. Whereas highest degree of variability was disclosed by JDSL (50.80 per cent).

Table 3: Proprietary Ratio of Selected Steel Companies of India (ratio in proportion)

Sr. No.	Company Name	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	MEAN	S.D	C.V.	MAX	MIN
1	TAST	0.49	0.44	0.50	0.53	0.56	0.55	0.56	0.58	0.37	0.41	0.50	0.07	14.03	0.58	0.37
2	JSPL	0.38	0.37	0.33	0.33	0.32	0.31	0.28	0.26	0.48	0.32	0.34	0.06	17.18	0.48	0.26
3	SAIL	0.54	0.51	0.48	0.48	0.51	0.48	0.46	0.43	0.37	0.31	0.46	0.07	14.27	0.54	0.31
4	SESA	0.58	0.69	0.59	0.82	0.72	0.69	0.39	0.42	0.80	0.48	0.62	0.15	23.51	0.82	0.39
5	JSWS	0.37	0.28	0.31	0.41	0.37	0.36	0.34	0.33	0.27	0.27	0.33	0.05	13.99	0.41	0.27
6	BSHN	0.18	0.20	0.23	0.23	0.23	0.21	0.18	0.15	0.08	0.12	0.18	0.05	26.04	0.23	0.08
7	JNDS	0.73	0.88	1.33	1.42	1.54	1.74	1.80	0.50	0.43	0.49	1.09	0.51	47.04	1.80	0.43
8	MHSL	0.76	0.81	0.60	0.64	0.66	0.71	0.70	0.73	0.69	0.69	0.70	0.06	8.24	0.81	0.60
9	WSCL	0.30	0.20	0.40	0.37	0.32	0.42	0.32	0.24	0.24	0.28	0.31	0.07	22.20	0.42	0.20
10	JDSL	0.19	0.12	0.15	0.16	0.13	0.08	0.01	0.01	0.12	0.15	0.11	0.06	50.80	0.19	0.01
	MEAN	0.45	0.45	0.49	0.54	0.54	0.56	0.50	0.36	0.39	0.35	0.46	0.07	15.36	0.56	0.35
	S. D.	0.19	0.25	0.31	0.34	0.38	0.44	0.47	0.20	0.22	0.16					
	C. V.	42.76	56.55	63.40	64.00	70.42	78.64	93.23	55.12	56.15	45.74					
	MAX	0.76	0.88	1.33	1.42	1.54	1.74	1.80	0.73	0.80	0.69					
	MIN	0.18	0.12	0.15	0.16	0.13	0.08	0.01	0.01	0.08	0.12					

Source: Calculated from Prowess, the database software package of CMIE

4. Fixed Assets to Net Worth Ratio:

Table 4 represents Fixed Assets to Net Worth Ratio (FANW) of Indian Steel Industry. Mean value of FANW of Indian steel industry showed a highly fluctuating trend during the study period ranged between 0.82 (2011-12) to 2.53 (2017-18). The overall

average of the industry was 1.38, which was quiet high indicated that the industry was not able to finance its fixed assets from net worth and showed weak solvency position of the industry. The maximum mean value of FANW was recorded by JDSL i.e. 3.53 showing that the company had inadequate shareholder fund to fulfil

fixed assets requirement and had to rely on borrowed funds. It was least in case of SESA i.e. 0.22 showing less burden of interest expenses and more security to the creditors. The table depicts that the aggregate SD of FANW of Indian Steel Industry's was 0.54. Overall CV of FANW ratio of Indian steel industry was

recorded as 39.20 per cent. While degree of consistency was observed in JSWS with CV of FANW ratio as 18.95 per cent. Whereas highest degree of variability was disclosed by BSHN (94.42 per cent) as reflected by their values of CV.

Table 4: Fixed Assets to Net Worth Ratio of Selected Steel Companies of India (Ratio in proportion)

Sr. No.	Company Name	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	MEAN	S.D	C.V.	MAX	MIN
1	TAST	0.30	0.37	0.33	0.24	0.21	0.43	0.38	0.37	1.09	1.51	0.52	0.40	77.23	1.51	0.21
2	JSPL	1.26	1.06	0.99	1.15	1.06	1.15	1.40	2.18	1.87	1.91	1.40	0.40	28.61	2.18	0.99
3	SAIL	0.50	0.44	0.41	0.41	0.43	0.41	0.63	0.83	1.17	1.39	0.66	0.34	51.28	1.39	0.41
4	SESA	0.14	0.10	0.07	0.07	0.08	0.12	0.68	0.65	0.43	0.45	0.28	0.24	84.45	0.68	0.07
5	JSWS	1.43	1.64	1.74	1.23	1.46	1.39	1.54	1.52	2.29	2.08	1.63	0.31	18.95	2.29	1.23
6	BSHN	1.08	0.77	0.52	2.13	2.02	2.01	2.39	4.64	11.16	6.73	3.34	3.16	94.42	11.16	0.52
7	JNDS	0.41	0.46	0.51	0.48	0.57	0.69	0.91	0.98	1.11	1.04	0.72	0.25	35.40	1.11	0.41
8	MHSL	0.25	0.22	0.66	0.54	0.63	0.57	0.56	0.51	0.52	0.48	0.49	0.14	28.51	0.66	0.22
9	WSCL	1.26	1.45	0.90	0.82	0.86	0.68	1.53	1.50	1.59	1.31	1.19	0.33	27.34	1.59	0.68
10	JDSL	1.87	3.13	2.07	1.87	4.51	6.73	3.66	3.77	4.06	3.67	3.53	1.39	39.39	6.73	1.87
	MEAN	0.85	0.96	0.82	0.89	1.18	1.42	1.37	1.70	2.53	2.06	1.38	0.54	39.20	2.53	0.82
	S. D.	0.57	0.87	0.60	0.66	1.24	1.85	0.96	1.37	3.04	1.78					
	C. V.	66.93	90.62	73.40	73.42	104.90	130.40	70.27	80.81	120.35	86.80					
	MAX	1.87	3.13	2.07	2.13	4.51	6.73	3.66	4.64	11.16	6.73					
	MIN	0.14	0.10	0.07	0.07	0.08	0.12	0.38	0.37	0.43	0.45					

Source: Calculated from Prowess, the database software package of CMIE

5. Interest Coverage Ratio:

Table 5 depicted interest coverage ratio (ICR) of Indian Steel Industry. Mean value of ICR of Indian steel industry showed a fluctuating trend during the study period and varied from 0.55 to 23.35 during the study period. The overall mean value of ICR of Indian steel industry was 10.54, which showed that the long-term creditors were safe of this industry. MHSL recorded highest mean value of ICR i.e. 42.92 due to high earnings before interest and tax and less burden

of interest on the company due to less usage of debt funds. The minimum mean value ICR was recorded by JDSL i.e. 0.83. The table depicts that the aggregate SD of ICR of Indian Steel Industry's was 6.26. Overall CV of ICR of Indian steel industry was 59.42 per cent. While highest degree of consistency was found in TAST with CV of ICR as 33.37 per cent. Whereas highest degree of variability was disclosed by JDSL (161.57 per cent) as reflected by their values of CV.

Table 5: Interest Coverage Ratio of Selected Steel Companies of India (Ratio in proportion)

Sr. No.	Company Name	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	MEAN	S.D	C.V.	MAX	MIN
1	TAST	8.61	5.91	4.90	6.80	6.42	5.38	6.60	5.53	1.84	2.99	5.50	1.83	33.37	8.61	1.84
2	JSPL	7.67	9.60	7.71	7.66	5.15	3.31	2.23	0.73	0.15	0.39	4.46	3.37	75.49	9.60	0.15
3	SAIL	49.45	38.67	27.32	16.49	8.86	8.11	4.23	2.62	-2.02	-1.09	15.26	16.74	109.69	49.45	-2.02
4	SESA	51.45	46.46	55.22	25.38	11.22	1.20	1.18	1.67	-5.02	4.42	19.32	22.23	115.08	55.22	-5.02
5	JSWS	6.26	1.90	4.34	4.59	2.89	2.52	1.76	2.18	-0.65	2.43	2.82	1.79	63.27	6.26	-0.65

6	BSHN	10.56	10.61	9.31	9.47	5.60	2.25	1.07	0.46	0.06	0.23	4.96	4.38	88.35	10.61	0.06
7	JNDS	7.54	7.50	13.98	14.55	5.00	3.14	2.05	2.84	1.90	2.52	6.10	4.53	74.19	14.55	1.90
8	MHSL	77.54	49.85	27.03	18.14	47.06	41.61	68.00	52.66	8.95	38.38	42.92	20.08	46.77	77.54	8.95
9	WSCL	11.63	2.77	5.62	4.92	1.43	1.31	0.87	0.83	0.08	2.33	3.18	3.29	103.47	11.63	0.08
10	JDSL	2.78	-1.79	2.37	2.23	0.68	-0.28	-0.21	1.26	0.18	1.09	0.83	1.34	161.57	2.78	-1.79
	MEAN	23.35	17.15	15.78	11.02	9.43	6.86	8.78	7.08	0.55	5.37	10.54	6.26	59.42	23.35	0.55
	S. D.	24.77	18.73	15.68	6.98	12.90	11.80	19.83	15.26	3.37	11.11					
	C. V.	106.10	109.23	99.34	63.29	136.80	172.07	225.87	215.59	616.11	206.81					
	MAX	77.54	49.85	55.22	25.38	47.06	41.61	68.00	52.66	8.95	38.38					
	MIN	2.78	-1.79	2.37	2.23	0.68	-0.28	-0.21	0.46	-5.02	-1.09					

Source: Calculated from Prowess, the database software package of CMIE

Hypotheses Testing

To check the significant difference in the solvency ratios of the selected companies among the years as well as among the selected companies over the years One Way ANOVA has been employed. The comprehensive results of all the hypothesis have been presented in table 6 and table 7.

Table 6: ANOVA Test of Solvency Ratios among the years

Sr. No	Ratio	F	Sig.	H0	Remarks
1	Debt Equity Ratio	0.680	0.772	Accepted	No Significant Difference
2	Funded Debt to Total Capitalisation Ratio	0.834	0.615	Accepted	No Significant Difference
3	Proprietary Ratio	0.475	0.930	Accepted	No Significant Difference
4	Fixed Assets to Net Worth Ratio	1.305	0.212	Accepted	No Significant Difference
5	interest coverage ratio	0.895	0.552	Accepted	No Significant Difference

Table 6 depicted that there was no significant difference in solvency ratios of the selected companies among the years by accepting the null hypothesis showing significance values higher than 0.05.

Table 7: ANOVA Test of solvency ratios among the selected steel companies over the years

Sr.No	Ratio	F	Sig.	H0	Remarks
1	Debt Equity Ratio	6.912	0.000	Rejected	Significant Difference
2	Funded Debt to Total Capitalisation Ratio	27.769	0.000	Rejected	Significant Difference
3	Proprietary Ratio	21.341	0.000	Rejected	Significant Difference

4	Fixed Assets to Net Worth Ratio	3.953	0.000	Rejected	Significant Difference
5	interest coverage ratio	8.669	0.000	Rejected	Significant Difference

In table –7 the significance values of all the solvency ratios were less than 0.05 results to rejection of null hypothesis and acceptance of alternative hypothesis. It inferred that there was a significant difference in solvency ratios among the selected companies over the years.

CONCLUSION AND SUGGESTION

The present study depicts that Solvency ratios are utilized for measuring the ability of a company to pay interest to its creditors on regular basis and repay its principal amount of loan at the of maturity. The study revealed that mean value of DER of ten companies was higher than the satisfactory limit of 2:1, witnessing a strong solvency position of these companies. Mean value of FDTC inferred that all the selected companies showed lower ratio indicating that these are not much dependent on debt funds and may attract potential creditors to provide funds to these companies having low debt position and more security to creditors. Besides this, mean value of PR witnessed better solvency of the industry. Moreover, mean value of FANW ratio of 5 companies was below the standard norm of 0.75, which implied that remaining net worth may be used for financing current assets of these companies and the solvency position of these companies was also satisfactory. One-way ANOVA test is used to test the various hypotheses. All the null hypotheses are rejected showing that all the solvency ratios differ among the companies over the years. But

there was no significant difference between the solvency ratios of the selected steel companies over the years as depicted by the results of ANOVA test. Companies with weak solvency position are advised to frame a healthy capital structure. Company whose profitability position is weak should not use debt financing because it will increase tax burden on them.

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APPENDIX 1

Companies' Name with Abbreviation:

TAST	Tata Steel Ltd.
JSPL	Jindal Steel & Power Ltd.
SAIL	Steel Authority of India Ltd.
SESA	Vedanta Ltd.
JSWS	J S W Steel Ltd.
BSHN	Bhushan Steel Ltd.
JNDS	Jindal Saw Ltd.
MHSL	Maharashtra Seamless Ltd.
WSCL	Welspun Corp Ltd.
JDSL	Jindal Stainless Ltd.