A STUDY ON ANALYSING FINANCIAL POSITION OF SELECTED STEEL COMPANIES IN INDIA – USING ALTMAN Z-SCORE MODEL

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ABSTRACT

The Steel industry is one of the key industries in India. TheSuccess of any business is based on efficient financial management. The study has been undertaken to analyse financial position of selected steel companies in India.The researcher selected top five steel companies in India for analyzing financial performance during ten years of the study period from 2007-08 to 2016-17. The researcher applied Altman Z-Score model for analysis using ratio analysis. The study found that financial performance of SAIL and JINDAL was good during the first half of the study period but it was not so during the second half. Financial performance of Tata Steels was good during 2007-08, 2009-10 and 2010-11 and during other years it was not so. Financial performance as measured by Altman Z-score of JSW was good during the first year of the study period and it was not good during rest of years. Financial performance of JSL was not good during entire period of study as shown by the results of Altman Z-score model.

KEYWORDS: *Financial Position, Z-Score, Working Capital, Retained Earnings and Book Value*

INTRODUCTION

India is one of the fastest economics in the globe. Economic development in India is contributed by many industries. Among various industries steel industry is considered as backbone. Since, steel is the raw material for majority of other industries in the economy.The per capita consumption of steel is used as one of the important indicator to measure the socio-economic development and living standards of the people in any country. Steel is basic material for any industry in a country. Better infrastructure is important for development of any industry in a country. Steel is the primary material for infrastructure industry. Steel industry is one of the biggest and fastest growing industries in India. Indian steel industry is one of the top in global level. 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 3rd 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. Many steel companies are being operated in India. They are providing raw material to other industries and providing employment opportunities to people both directly and indirectly. Growth of such companies is important both for the economy and people. Good management of a company leads for success of business. Among various aspects in management, finance is playing important role and it is base for other activities of a business. Hence the researcher studied financial management of selected steel companies in the country using Altman Z-Score model.

REVIEW OF LITERATURE

Shrabanti Pal (2016) found 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. Yafeng Li, Chunmei Cheng and Qiang Liu (2016) evidenced that profitability and cash flow had a great impact on the financial risk assessment of the iron and steel enterprises. The researchers] recommendations were provided to control the financial risk of the steel industry listing corporations. Mohd Yameen and Asif Pervez (2016) found that there was a decline in the financial performance of SAIL during the study period i.e. between 2005 and 2014. Asif Pervez (2016) evidenced that the financial health of the company is very good. There was no sign of failure of the business in near future and failure of the company in long-run is completely uncertain to predict. Basman Omar Al-Dalayeen and Borhan Omar Ahmad Al-Dalaien (2017) highlighted that the financial performance of Jordan Steel was satisfactory during initial years of the study but deteriorated in later years and hence requisite steps should be taken to improve its performance.

OBJECTIVES

- The study has been undertaken with the following objective.

- To study the financial position of selected steel companies in India using Altman Z-score model.

METHODOLOGY

The study has been undertaken to analyse financial position of selected steel companies in India. The study has been undertaken during ten years of the study period from 2007-08 to 2016-17. 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 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 Altman Z-Score model for analysis using ratio analysis. This methodology has been described below.

The Z-score is a linear combination of four or five common business ratios, weighted by coefficients. The coefficients were estimated by identifying a set of firms which had declared bankruptcy and then collecting a matched sample of firms which had survived, with matching by industry and approximate size (assets).

Altman applied the statistical method of discriminant analysis to a dataset of publicly held manufacturers. The estimation was originally based on data from publicly held manufacturers, but has since been re-estimated based on other datasets for private manufacturing, non-manufacturing and service companies.

The original Z-score formula was as follows,

$$Z = 1.2T_1 + 1.4T_2 + 3.3T_3 + 0.6T_4 + 0.99T_5.$$

Here,

T_1 = Working Capital / Total Assets. Measures liquid assets in relation to the size of the company.

T_2 = Retained Earnings / Total Assets. Measures profitability that reflects the company's age and earning power.

T_3 = Earnings Before Interest and Taxes / Total Assets. Measures operating efficiency apart from tax and leveraging factors. It recognizes operating earnings as being important to long-term viability.

T_4 = Market Value of Equity / Book Value of Total Liabilities. Adds market dimension that can show up security price fluctuation as a possible red flag.

T_5 = Sales/ Total Assets. Standard measure for total asset turnover (varies greatly from industry to industry).

The score may be interpreted as follows.

$Z > 2.99$ -"Safe" Zones

$1.81 < Z < 2.99$ -"Grey" Zones

$Z < 1.81$ -"Distress" Zones

RESULTS AND DISCUSSIONS

This section of the paper presents the results and discussion under Altman's Z-score methodology for the sample companies. Table //// shows the results of Altman's Z Scores for SAIL.

Table 1: Z-Score Mode of SAIL

Year	T1	T2	T3	T4	T5	Z- Score
2007-08	0.31	0.45	0.28	1.82	0.95	**3.96***
2008-09	0.28	0.43	0.17	0.72	0.79	**2.74**
2009-10	0.27	0.42	0.15	1.50	0.58	**2.88**
2010-11	0.16	0.43	0.10	0.92	0.57	**2.25**
2011-12	0.13	0.47	0.08	0.51	0.61	**1.97**
2012-13	0.06	0.44	0.05	0.31	0.53	1.55
2013-14	-0.02	0.42	0.04	0.32	0.51	1.41
2014-15	-0.06	0.40	0.04	0.28	0.46	1.24
2015-16	-0.14	0.35	-0.05	0.18	0.39	0.65
2016-17	-0.19	0.30	-0.02	0.24	0.42	0.67

Source: Computed From Secondary Data Collected From Annual Reports

Table 1 shows that the calculated Z-scores of SAIL during the study period. The calculated Z-score of the company was 3.96 during 2007-08, it was more than 2.99, hence financial position of the company was very good during such years and it was in safe zone. But during the subsequent years Z-score of the company was decreasing. During the period from 2008-09 to 2011-12, the calculated Z-scores of the company stood at 2.74, 2.88, 2.25 and 1.97 respectively, they were less than 2.99 but more than 1.81, according to the model financial position of the company was satisfactory during such period and the company was in gray zone during such period. But during the last five years of the study period the calculated Z-scores were less than 1.81, it indicates poor financial position of the company and it was in distress zone and improvements are needed in terms of long term financial position of the company.Table 2 shows the results of Altman's Z Scores for TATA.

Table 2: Z-Score Mode of TATA

Year	T1	T2	T3	T4	T5	Z- Score
2007-08	0.53	0.38	0.15	0.92	0.36	**2.56**
2008-09	-0.01	0.34	0.13	0.22	0.36	1.38
2009-10	0.03	0.49	0.12	0.75	0.34	**1.91**
2010-11	0.06	0.51	0.13	0.66	0.33	**1.93**
2011-12	-0.04	0.54	0.12	0.47	0.35	1.74
2012-13	-0.05	0.53	0.10	0.30	0.37	1.55
2013-14	-0.07	0.54	0.10	0.34	0.38	1.60
2014-15	-0.04	0.57	0.09	0.27	0.36	1.56
2015-16	-0.05	0.56	0.06	0.25	0.31	1.39
2016-17	-0.03	0.44	0.07	0.42	0.43	1.50

Source: Computed From Secondary Data Collected From Annual Reports

It could be known from table 2 that the calculated Altman's Z-score of Tata Steels was 2.56, 1.91 and 1.93 during 2007-08, 2009-10 and 2010-11 respectively. They were less than 2.99 but more than 1.81, hence financial position of the company was satisfactory during the study period as per the Z-score model and the company was in grey zone and little improvements are required. During rest of the years the calculated Z-score of the company was less than 1.81, it showed poor financial position of the company during such years and the company was in distress zone and efforts are required to improve financial position of the company to avoid financial risk in future. Table 3 shows the results of Altman's Z Scores for JSW.

Table 3: Z-Score Mode of JSW

Year	T1	T2	T3	T4	T5	Z- Score
2007-08	-0.07	0.34	0.14	0.74	0.55	**1.86**
2008-09	-0.15	0.26	0.05	0.15	0.49	0.92
2009-10	-0.07	0.30	0.12	0.75	0.59	1.74
2010-11	-0.09	0.39	0.09	0.49	0.56	1.58
2011-12	-0.07	0.35	0.06	0.32	0.64	1.45
2012-13	-0.02	0.35	0.08	0.27	0.65	1.53
2013-14	-0.08	0.34	0.07	0.37	0.66	1.48
2014-15	-0.02	0.33	0.08	0.29	0.62	1.50
2015-16	-0.11	0.27	-0.03	0.42	0.50	0.90
2016-17	-0.10	0.29	0.11	0.56	0.65	1.62

Source: Computed from Secondary Data Collected from Annual Reports

The results of table 3 indicates that the calculated Z-score of JSW was 1.86 during 2007-08, it was less than 2.99 but more than 1.81 and this result shows that financial position of the company was satisfactory during 2007-08 and the company was in grey zone and little improvements are required to improve financial position of the company. But during other nine years, the calculated values of Z-scores of the company was less than 1.81, it indicates that the company's financial position was poor during such period. The company is needed strong efforts to improve financial position of the company in order to avoid financial risks in future. Table 4 shows the results of Altman's Z Scores for JINDAL.

Table 4: Z-Score Mode of JINDAL

Year	T1	T2	T3	T4	T5	Z- Score
2007-08	0.12	0.38	0.18	3.28	0.55	**3.79***
2008-09	0.06	0.37	0.15	1.28	0.53	**2.40**
2009-10	-0.09	0.33	0.11	3.24	0.36	**3.02***
2010-11	-0.08	0.33	0.12	2.47	0.36	**2.58**
2011-12	-0.12	0.32	0.10	1.52	0.40	**1.95**
2012-13	-0.06	0.31	0.08	0.82	0.38	1.48
2013-14	-0.09	0.28	0.06	0.58	0.32	1.13
2014-15	-0.04	0.27	0.03	0.31	0.29	0.91
2015-16	-0.11	0.38	0.01	0.09	0.21	0.67
2016-17	-0.09	0.36	0.01	0.18	0.23	0.78

Source: Computed from Secondary Data Collected from Annual Reports

It could be known from table 4 that the calculated value of Z-score of JINDAL was 3.79 and 3.02 during 2007-08 and 2009-10 respectively,these values are more than 2.99, according to standards fixed by the model the company's financial position was good and the company was in safe zone. The calculated values of Z-score were 2.40, 2.58 and 1.95 during 2008-09, 2010-11 and 2011-12 respectively, they were less than 2.99 but more than 1.81. These results show that the financial position of the company was satisfactory during the years and the company was in grey zone and little improvements are required in financial position. The calculated Z-scores of JINDAL were less than 1.81 during the last five years of the study period. These results show that the company's financial position was not good during second half of the study period and the company was in distress zone during such years. Hence the company should take high efforts to improve its financial position in order to meet financial risk in future.Table 5 shows the results of Altman's Z Scores for JSL.

Table 5: Z-Score Mode of JSL

Year	T1	T2	T3	T4	T5	Z- Score
2007-08	0.13	0.19	0.07	0.23	0.54	1.30
2008-09	-0.04	0.12	0.00	0.06	0.45	0.60
2009-10	0.06	0.15	0.06	0.16	0.46	1.02
2010-11	0.05	0.16	0.06	0.11	0.49	1.03
2011-12	-0.02	0.13	0.02	0.09	0.49	0.78
2012-13	0.00	0.09	-0.01	0.06	0.62	0.74
2013-14	-0.06	0.01	-0.01	0.05	0.76	0.69
2014-15	0.05	-0.02	0.08	0.06	0.44	0.79
2015-16	0.13	-0.05	0.05	0.03	0.53	0.79
2016-17	-0.18	0.16	0.08	0.28	0.81	1.25

Source: Computed from Secondary Data Collected from Annual Reports

Table 5 shows that the calculated values of Z-score of JSL were less than 1.81 during all the years of the study period. According to Altman Z-score model, Z-score with more than 2.99 will represent good financial position Z-score between 1.81 and 2.99 is considered satisfactory and Z-score less than 1.81 shows poor financial position of the company. Hence financial position of JSL was not good during the study period since the Z-scores were less than 1.81 and the company was in distress zone and more efforts are required to improve its financial position.

CONCLUSIONS

The Steel industry is one of the key industries in India. TheSuccess of any business is based on efficient financial management. The researcher selected top five steel companies in India for analyzing financial performance during ten years of the study period from 2007-08 to 2016-17. The researcher applied Altman Z-Score model for analysis using ratio analysis. The study found that financial performance of SAIL and JINDAL was good during the first half of the study period but it was not so during the second half. Financial performance of Tata Steels was good during 2007-08, 2009-10 and 2010-11 and during other years it was not so. Financial performance as measured by Altman Z-score of JSW was good during the first year of the study period and it was not good during rest of years. Financial performance of JSL was not good during entire period of study as shown by the results of Altman Z-score model.

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