ANALYSIS OF FINANCIAL STRENGTH OF SELECT FIRMS FROM INDIAN STEEL INDUSTRY USING ALTMAN'S "Z" SCORE ANALYSIS

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Abstract: *Financial planning is an essential part of the business concern, which helps to support of an enterprise. The key metrics by which the financial strength of a firm can be captured affect to the areas of liquidity, profitability, sustainability and feasibility. In fact, most of these ratios have been designed and developed for the direct purposes of maintenance a tag on the financial health of a firm. Ratio is used as an indicator for evaluating the financial performance of the business concern. The financial health of a firm is reflected through the various financial statistics or parameters which are interrelated to each other. In general utterance, a firm's financial health is determined by key factors which are directly or indirectly linked to the extent of operating leverage, financial leverage and composite leverage. This paper has made a sincere attempt to analyze and predict the financial health/strength/soundness of the firm by adopting Altman's Z – Score in the select firms from the Indian steel industry.*

Key Words: *Steel Industry, Altman's Z- Score, financial health, operating leverage, financial leverage, composite leverage.*

1. INTRODUCTION:

The steel industry grew out of the need for stronger and more easily produced metals. India was the world's third-largest steel producer in 2017. The business of processing iron ore into steel which in its simplest form is an iron-carbon alloy, and in some cases, turning that metal into partially completed products or recycling scrap metal into steel. The iron economy and is considered to be the backbone of human and steel industry of India, which is vast in size, civilization. The level of per capita consumption of steel holds an important position in the industrial system of is treated as a vital index of the level of India. Steel industry is prone to high degrees of volatility in terms of its revenue and cost structure and hence is liable to fluctuating fortunes. When the industry is caught in a cruel down cycle- which happens more often than is the case with other industries - the industry's operations are rendered unviable and it faces threats to their viability and feasibility. It is against this backdrop that the present study has been taken up to start the scope and nature of the financial health related problems faced by firms operating in this industry. Altman's model discussed in detail and describes the changes occurring to the equation so as to reach a perfect prediction for financial condition of the select steel industry.

2. OBJECTIVES:

The financial health of the firms operating in the Indian steel industry, the study has set out objectives which are as presented below:

- To analyze the financial health and variability of the firms in steel industry
- To establish the ability of the Altman's model to predict the probable bankruptcies

3. METHODOLOGY OF THE STUDY:

This paper is based on secondary data collected from various financial portals like money-control, rediff.moneywiz and other websites. The study is analytical in nature and basing its workings on the data collected from the published financial statements of a select set of firms, worked out the set of ratios, within the framework of Altman's model.

The selected firms included in the present study are: JSW steel Ltd, Tata steel Ltd, SAIL, VISA steel Ltd, Jindal steel and power Ltd.

3.1 THE TOOLS USED FOR THE ANALYSIS:

The study has used the Altman's 'Z' Score for the purpose of analysis and comparison of the financial health/soundness/strength of the selected firms from the Steel industry. In order to analyze the stability and consistency

of the different ratios employed and also used the statistical techniques such as the mean and coefficient of variation etc.

3.2 PERIOD OF THE STUDY

The study covers a period of five years from the financial year 2013-14 to 2017-18

Altman's Z-Score Model

The Altman Z-Score is an analytical representation created by Edward Altman in the 1960s which involves a combination of five distinctive financial ratios used for determining the odds of bankruptcy amongst companies. Most commonly, a lower score reflects higher odds of bankruptcy. The study has used the Z-score estimates for manufacturing firms for evaluation of financial health of companies over the study period.

Thus, the formal statement of the model is:

Z-Score bankruptcy model: $Z = 1.2T_1 + 1.4T_2 + 3.3T_3 + 0.6T_4 + 0.999T_5$

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).

A Z score of greater than 2.99 means that the entity being measured is safe from bankruptcy. A score of less than 1.81 means that a business is at considerable risk of going into bankruptcy, while scores in between should be considered a red flag for possible problems. The model has proven to be reasonably accurate in predicting the future bankruptcy of entities under analysis.

3.3 STRUCTURE OF Z-SCORE ESTIMATE FOR MANUFACTURER FIRMS AND EMERGING MARKET CREDITS

The table 1-5 shown below describes the structure of the ratios employed in calculating the Altman's Z- score. Table 1 - 5, shows the financial statement of selected firm's and few financial data used as it required for construction of Z Score analysis.

TABLE 1

JSW STEEL LTD

Particulars	2013-14	2014-15	2015-16	2016-17	2017-18
Current Assets	8,881.03	12,406.63	9,850.99	14,245.00	15,375.00
Current Liabilities	18,782.13	22,996.19	19,759.70	23,422.00	25,695.00
Total Assets	49,259.16	51,485.83	52,624.96	57,331.00	59,630.00
Retained Earnings	3983.02	5,570.33	243.05	3,338.00	7,305.00
EBIT	6387.76	6553.91	3839.91	8774	10900
Book Value of Equity	973.01	1,032.60	84.44	99.69	115.45
Total Liabilities	49,259.16	51,485.83	52,624.96	57,331.00	59,630.00
Sales	45,297.72	46,087.32	36,706.92	52,290.00	64,975.00

Source:www.moneycontrol.com

TABLE 2

TATA STEEL LTD

Particulars	2013-14	2014-15	2015-16	2016-17	2017-18
Current Assets	7,739.78	9,012.05	8,731.28	13,213.68	17,595.78
Current Liabilities	19,957.78	18,251.65	16,844.43	28,872.02	33,389.18
Total Assets	87,274.77	92,874.14	101,470.51	79,868.05	89,028.67
Retained Earnings	30,430.41	35,092.73	38,116.32	12,477.23	15,368.50
EBIT	11675.84	8593.99	9169.34	8748.86	12815.16
Book Value of Equity	629.6	686.4	725.65	511.31	510.87
Total Liabilities	87,274.77	92,874.14	101,470.51	79,868.05	89,028.67
Sales	41,711.03	41,785.00	38,210.34	47,993.02	59,616.82

Source: www.moneycontrol.com

TABLE 3
SAIL

Particulars	2013-14	2014-15	2015-16	2016-17	2017-18
Current Assets	23,538.75	23,233.61	18,120.98	18,922.13	21,120.67
Current Liabilities	19,105.61	21,257.32	22,159.50	25,121.18	30,177.19
Total Assets	66,933.05	71,725.50	72,266.47	74,909.58	77,735.15
Retained Earnings	32,997.55	33,626.68	28,832.36	25,093.79	24,265.93
EBIT	3082.99	3901.37	-4707.05	-2106.3	2037.38
Book Value of Equity	103.3	105.33	94.89	87.18	86.46
Total Liabilities	66,933.05	71,725.50	72,266.47	74,909.58	77,735.15
Sales	46,698.41	45,710.78	39,051.88	44,452.41	57,558.46

Source: www.moneycontrol.com

TABLE 4
VISA

Particulars	2013-14	2014-15	2015-16	2016-17	2017-18
Current Assets	206.28	173.67	271.9	341.34	207.61
Current Liabilities	1,047.09	971.61	1,261.56	1,689.38	2,042.54
Total Assets	2,690.73	2,887.58	2,525.56	2,191.48	1,505.00
Retained Earnings	-292.79	-534.23	-1,117.77	-1,399.40	-1,544.82
EBIT	8.61	-30.61	-10.11	-106.07	-118.28
Book Value of Equity	33.36	11.13	-41.92	-59.43	-68.52
Total Liabilities	2,690.73	2,887.58	2,525.56	2,191.48	1,505.00
Sales	1,029.96	922.16	505.25	1,397.18	1,602.80

Source: www.moneycontrol.com

TABLE 5
JINDAL STEEL AND POWER LTD

Particulars	2013-14	2014-15	2015-16	2016-17	2017-18
Current Assets	6,159.21	5,330.27	3,601.86	2,830.34	4,019.31
Current Liabilities	7,132.86	7,419.20	13,549.76	14,088.16	15,888.36
Total Assets	35,731.24	38,626.26	46,980.71	45,929.54	44,113.80
Retained Earnings	11,039.43	10,074.50	20,349.98	19,125.99	18,601.28
EBIT	2684.27	2216.56	316.41	867	2063.39
Book Value of Equity	142.8	136.75	252.11	237.88	235.42
Total Liabilities	35,731.24	38,626.26	46,980.71	45,929.54	44,113.80
Sales	14,544.02	13,390.35	12,696.44	13,848.10	17,065.17

Source: www.moneycontrol.com

Data showing the computed Z score values. Based on the relevant data taken from the published annual reports which are shown in the table 1-5, the Z scores were computed.

Table 6 shows the results of selected firm's under the Z score analysis, also the mean Standard deviation and Co-efficient of variation

TABLE 6
EVALUATION OF Z SCORE FACTOR

YEAR	JSW STEEL LTD	TATA STEEL LTD	SAIL	VISA	JINDAL
2013-14	1.657844	1.176893	1.124821	-2.12179	0.811867
2014-15	1.307579	0.949681	0.871002	-1.17059	0.655764
2015-16	0.719794	1.109008	0.817732	-0.91296	0.648018
2016-17	1.231907	1.169317	1.507099	-0.30393	0.83841
2017-18	1.231366	1.243888	1.620285	-0.12654	1.057187
Average WC	-9,979.27	-12,204.50	-2,576.93	-1,162.28	-7,227.47
Mean	1.229698	1.129757	1.188188	-0.92716	0.802249
SD	0.3351806	0.111434	0.364099	0.793097	0.167062
CV	0.272	0.098	0.306	-0.855	0.208

Source:Computed

Table – 1 to 5 shows the financial information about selected steel Companies. Table 6 shows the financial analysis of the all selected firms. The analysis based on the computed data presented in table 6 leads to the interpretations that:

Firstly, the average working capital of the financial health of JSW,TATA,SAIL,VISA and JINDAL indicate a need to take caution about the operating efficiency and short term financial healthiness to avoid falling into a state of negative working capital.

Secondly, as per the Altman's 'Z' Score analyses JSW,TATA,SAIL,VISA and JINDAL is in the stage of distress implying that bankruptcy is highly probable. This is quite obvious from a reading of the mean Z score values.

Thirdly, as per financial consistency is concerned, the SAIL is more standard/consistent and it is followed by JSW. Other companies' financial position indicates relatively more unstable (i.e lacking in consistency); this is clearly seen by the reading of the values of the coefficient of variation.

Finally, all the ratios computed here indicate strong financial position in cases of JSW and TATA Steel. Thus, it can be concluded that these two companies are financial healthier/sound. As the it clear from the computed data JINDAL doing good from last five years. But in the light of computed data analysis, it is quite clear that SAIL need to take more precaution against the eroding financial position and efficiency is a serious concern as they are in the alert zone. The VISA is in the bankruptcy stage as indicated by the data.

4. CONCLUSION:

Evaluation of finanacial position and health of the firm is a very vital point for share holders. All the decision of a firms is taken on the basis of financial soundness of a firm. Under this background Altman's Z score dominates for deciding the financial bankruptcy of a firm and there by a firm can easily judge its financial condition. The present study was conducted with the parameters of liquidity, profitability, sustainability,feasibility and compare the financial performance of select firm's of steel industry. During the study period investigator finds that JSW , TATA steel and JINDAL are financially sound but not SAIL and VISA steel Ltd.

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