



# FINANCIAL PERFORMANCE ANALYSIS OF BHEL THROUGH Z SCORE MODEL

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## ABSTRACT

The study was an attempt to analyse the financial performance of BHEL with the help of financial tool i.e., Altman Z - Score Model. Z score was formulated for predicting bankruptcy of public listed firms and was published by Edward I. Altman in 1968. He was working as assistant professor of finance at New York University. The Z- score predicts probability of firms going bankruptcy within two years. To determine the financial soundness of Bharat Heavy Electricals Limited, the researchers collected the data for a period of ten years since 2010-11 to 2019-20. The study was based on secondary data collected from the published annual reports of BHEL. The available data were analyzed to test the financial health of BHEL by using Altman Z Score Model.

**KEYWORDS:** Financial Performance , BHEL ,Altman Z- Score Model.

## INTRODUCTION

**BHEL**, one of India's largest engineering and manufacturing enterprises in the energy and infrastructure sectors and a leading power equipment manufacturer globally, is a celebration of India's industrial achievements. In its journey of over 55 years, it has gained the status of being one of the strongest pillars of Indian industry. BHEL serves the core sectors of the economy and provides a comprehensive portfolio of products, systems and services to customers in power transmission, transportation, renewable, water, defence & aerospace, oil & gas, and industry. BHEL has created value for its stakeholders due to the scale and depth of its operations, rich experience, competent manpower, innovative ecosystem, diverse product-mix and focus on sustainable business solutions. BHEL is engaged in the design, engineering, manufacture, construction, testing, commissioning and servicing of a wide range of products and services for the core sectors of the economy, viz. Power Sector and Industry Sector that includes Transmission, Transportation, Renewable Energy, Oil & Gas and Defence etc.

Now- a- days, due to the changing policies of the government and the competition in the globalize era ,the financial performance of the BHEL has been taken ,as it has made tremendous growth within a longer period, from its inception but from last few years there were several ups and downs in its financial performance.

Financial Analysis is a process of synthesis and summarization of financial and operative data to get an insight into the operative activities of a business concern. Financial analysis consists of comparisons for the same company over periods of time or comparisons of different companies either in the same industry or in different industries. It may be done for a variety of purposes, which may range from a simple analysis of the short term liquidity position of the firm to a comprehensive assessment of the strengths and weaknesses in various areas. It is helpful in assessing corporate excellence, operating efficiency, judging credit worthiness, forecasting bond ratings, predicting bankruptcy and assessing market risk.

### **REVIEW OF LITERATURE**

Subbarayudu,S.,et al.(2020) “ A Study on Working Capital with reference to Ultratech Cements Ltd in Anantapuramu District” analyze the financial position of the company .The study of working capital was based on tools like Ratio Analysis, Statement of changes in working capital. The major source of data for this project was collected through annual reports, Profit and Loss account of 5 years period from 2013-14 to 2017-18. Through this study ,it was found that the financial status Ultra Tech Cement is good. (Subbarayudu, Naveena, & Ravikishore, 2020)

Thakur, Seema (2019) in her research article talks about accounting analysis and financial analysis and assessment of the viability, reliability and profitability of a business. The main indication behind this study is to investigate the financial functioning position of the Dabur India Limited. This investigation was done with the help of secondary data which was collected from the Annual Reports of the Dabur India Limited. Based on the study, it has been found that the company has got enough funds to encounter its obligations including debts & as well as liabilities. (Thakur, 2019)

Mohammady, Esmatullah (2019) analyzed financial performance of public and private sector banks in Afghanistan using CAMEL approach . In this study, the data for 4 years (2014-2017) has been evaluated by the researcher and it has been found that almost base on all CAMEL parameters, private sector banks on average are performing far better than public sector banks. Researcher believed that this study can be helpful for policy makers in government and also for banks to meet their shortcomings and improve their financial performance to meet the standards and requirements. (Mohammady, 2019)

Lokganathan et al (2019) in their study entitled,” A Study on Financial Performance of Selected Public Sector Banks in India Using Camel Approach “attempted to evaluate the performance of public sector banks in India using CAMEL approach. The study was a descriptive based analytical research design. Researchers selected five public sector banks out of 27 public sector banks for the study. The study had used the secondary data published by the Reserve Bank of India for the period 2014-2018. The study

evaluates the performance of selected public sector banks are Bank of Baroda , Canara Bank, Indian bank, Punjab national bank, and State bank of India. Through this study,it was found that on an average SBI was at the top position followed by Bank of Baroda and Punjab National Bank. It is also noted that Indian bank was at the bottom position in selected CAMELS ratio. (Lokganathan & Cresida, 2019)

Patel, Bhumi (2019) analyse the financial performance with the help of ratio analysis at Patco Food Pvt ltd .This is analytical study based on the secondary data and is collected from the official website of Patco Food Pvt Ltd from 1-4-2011 to 31-3-2015. Based on the analysis, it was found that the company has got enough funds to meet its debts & liabilities, the income statement of the company shows sales of the company increased every year at good rate and profit also increased every year .Overall, the financial performance of the company for the five years was analyzed and it was proved that the company was financially sound. (Patel B. , 2019)

Mukdad Ibrahim (2019) in his paper,” Measuring the Financial Performance of a Telecommunications Corporation” measures the financial performance of the Emirates Telecommunications Group Company, the largest provider of internet and telephony services in the United Arab Emirates, during the years 2016 to 2018. This paper empirically analyzed three groups of indicators, profitability, liquidity and capital structure. The researcher has used Ratio analysis technique and used relevant ratios that reflect various aspects of the firm’s financial health .The findings indicated a noticeable improvement in the level of profitability in 2018 when compared to the previous years, possibly indicating a strengthening in the firm’s ability to control costs in its pursuit of higher profit margins. (Ibrahim, 2019)

Sankaran.,V.S.(2019) in his research paper, **“FINANCIAL PERFORMANCE ANALYSIS WITH REFERENCE TO SHIPPING SECTORS”** attempts to understand the overall financial position of shipping sectors The researcher had selected sample of fifty companies selected from various areas of Chennai city. The data collection instrument used for the study was balance sheet i.e. secondary data. The researcher has recommended that the company should look into ways of improving sales in period of low demand to improve profitability and also increase financing to expand and grow the business. The paper concludes with a positive response of financial performance in shipping sectors. (Sankaran, 2019)

Kiran,K.(2019) in her research paper,” A Comparative Analysis of Financial Performance of Selected Telecom Companies Using Z Score Model “ focuses on assessing the financial health of selected Telecom units i.e BSNL ,Bharti Airtel , Vodafone and Idea from 2013-14 to 2017-18.The study revealed that Vodafone needs to take corrective actions immediately as Z score is warning its bankruptcy in near future. Moreover, Airtel has also to be serious to improve its performance.financial years 2007-08 to 2011-12 which has depicted the financial distress of BSNL. (Kiran, 2019)

Malini (2019) in their research study ,”A STUDY ON FINANCIAL PERFORMANCE ANALYSIS OF INDIAN TOBACCO CORPORATION LIMITED” aims to analyze the liquidity, profitability, solvency position of the firm and efficiency which it converts its resources into service. The required data were collected from the secondary sources. The study covers a period of five years i.e. from 1st April 2013 to 31st March 2017. The researchers has used the Ratio analysis like Current ratio, Liquid ratio, Absolute ratio, Debt equity ratio, Gross profit ratio, Net profit ratio, Operating ratio, Cost of goods sold ratio, Return on total assets, Total assets turnover ratio, Inventory turnover ratio and Total expenses ratio were used in the study .The study strongly reveals that the financial performance is better. However, it needs to minimize the operating expenses to get high net profit. Sales turnover can be improved further by checking expenses that influences the sales. The equity position has to be improved. The company should take steps to maximum utilization of resources and inventory. (Malini & Banu, 2019)

### RESEARCH OBJECTIVE

To main objective of the study is to analysis the financial performance of Bharat Heavy Electricals Limited with the help of Altman Z Score model.

### RESEARCH METHODOLOGY

The present study is analytical in nature. The data has been collected by the researcher for ten years from 2010-11 to 2019-20 from secondary sources like annual reports of BHEL and other websites. To analysis the financial performance of BHEL, researcher has used financial technique i.e. Altman Z Score model .The researchers has used MS EXCEL for carrying out the data analysis and interpretation.

### Z-Altman Score

Z score was formulated for predicting bankruptcy of public listed firms and was published by Edward I. Altman in 1968. He was working as assistant professor of finance at New York University. The Z score predicts probability of firms going bankruptcy within two years. The Z score comprises of five variables namely X1, X2, X3, X4, X5

$$Z= 1.2X1+1.4X2+3.3X3+0.6X4+1.0X5$$

Where ,

**X1 is the working capital/total assets.**

**X2 is the retained earnings/total assets.**

**X3 is the EBIT/total assets.**

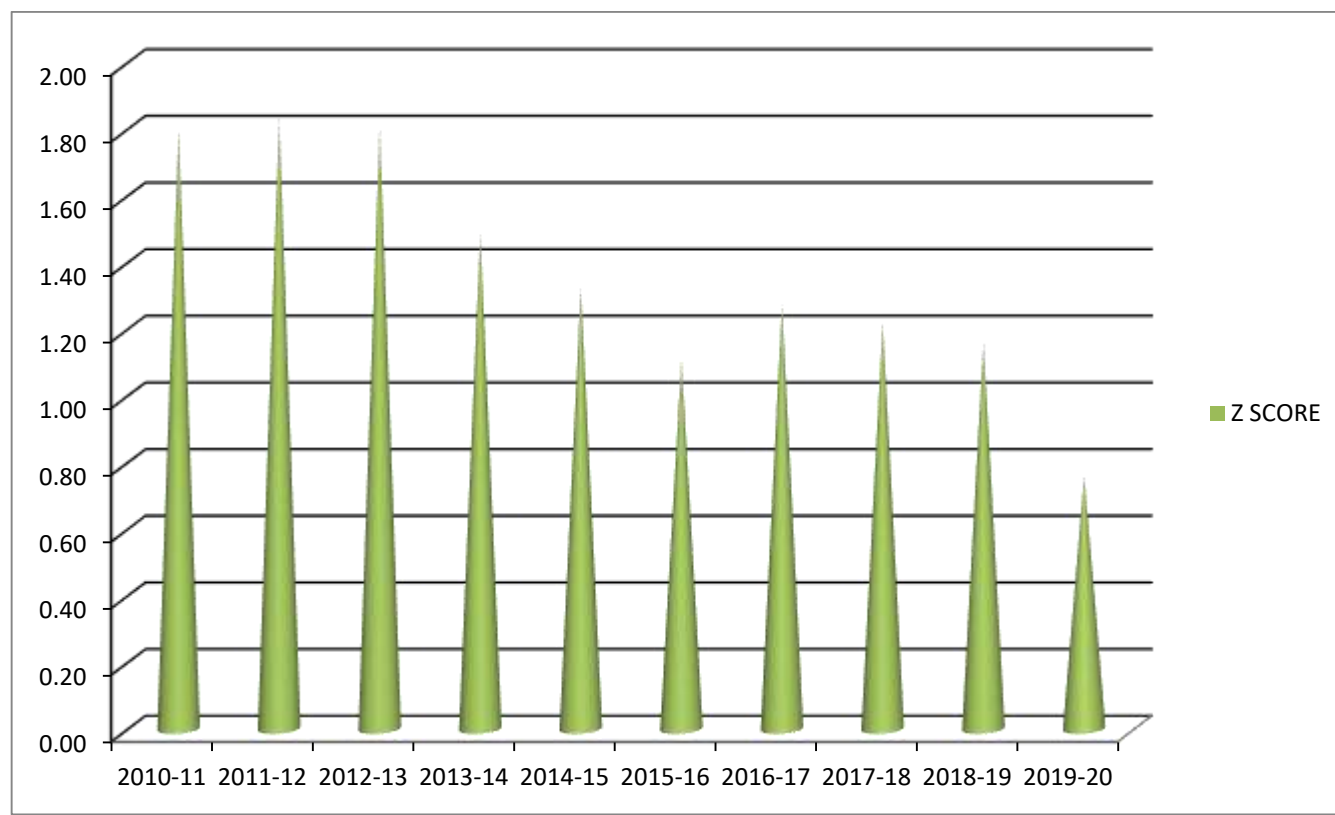
**X4 is the market value of equity/book value of debt and**

**X5 is the sales/total assets.**

**Table 1 showing Z Score of BHEL Ltd. from 2010-11 to 2019-20**

<b>Years</b>	<b>1.2(X1)</b>	<b>1.4(X2)</b>	<b>3.3(X3)</b>	<b>0.6(X4)</b>	<b>1.0(X5)</b>	<b>Z SCORE</b>
<b>2010-11</b>	0.371	0.02	0.50	0.20	0.70	1.80
<b>2011-12</b>	0.362	0.02	0.51	0.23	0.71	1.83
<b>2012-13</b>	0.396	0.02	0.44	0.26	0.68	1.80
<b>2013-14</b>	0.436	0.02	0.23	0.27	0.53	1.49
<b>2014-15</b>	0.462	0.02	0.10	0.30	0.43	1.32
<b>2015-16</b>	0.449	0.00	-0.06	0.30	0.41	1.11
<b>2016-17</b>	0.446	-0.01	0.03	0.32	0.49	1.27
<b>2017-18</b>	0.381	-0.01	0.08	0.31	0.45	1.22
<b>2018-19</b>	0.285	0.01	0.11	0.29	0.47	1.16
<b>2019-20</b>	0.197	-0.04	-0.04	0.29	0.35	0.76
<b>MEAN</b>	0.379	0.01	0.19	0.28	0.52	1.38

Source: Calculated from Annual Reports of BHEL from 2010-11 to 2019-20

**Figure 1 : Z- Score Model of BHEL****Interpretation of Z score**

As per Z score model , if

<b><math>Z &gt; 2.99</math></b>	SAFE ZONE
<b><math>1.81 &lt; Z &lt; 2.99</math></b>	GREY ZONE
<b><math>Z &lt; 1.81</math></b>	DISTRESS ZONE

**Findings of Z- Score analysis of BHEL**

As per the Z- Score model , the safe zone started from the range 2.99. The value greater than 2.99 showed that the company was financially sound and good. The grey zone of Z- Score model ranges between the values of 1.81 to 2.99, that indicated that company's financial health was good and there will be very low chances of bankrupt in near future. Below the z-score 1.81, the company falls in the category of the distress

zone, which indicates that company's financial position is not good and there may be the possibility of bankruptcy in near future .

The above table and figure shows the Altman Z-score values of BHEL from 2010-11 to 2019-20. The Z-score in 2011-12 was highest in comparison to the other years of the study period. It was 1.83 which shows the company falls in grey zone which indicated that the company will have less chances to face financial distress in the future. During the years, 2012-13 and 2015-16 the Z-score decreases to 1.80 and 1.11 respectively and falls in the distress zone which indicated that the company will face financial distress in near future. In the year 2019-20, the Z-score was 0.76 i.e. lowest in comparison to the remaining years which showed that company was not performing well and the company's financial performance was not healthy.

Thus , the Z-score analysis of BHEL indicated that in the initial years the company's financial health was sound but in later years, the company's financial position was unsatisfactory that indicates company will have the possibility to face the bankruptcy in near future.

### **Conclusion :**

Financial soundness of a company is a centre theme for the share holders as they have to do the investment in the company. Therefore, periodical analysis of the financial performance of a company is very crucial as any decision taken by the company depends on its financial soundness.. In the present study, Altman's Z score plays a vital role in deciding the financial bankruptcy of a company and there by judge its financial health. The present study was conducted to analyze and predict the financial performance of Bharat Heavy Electricals Limited. The study revealed that the company is not financially sound during the study period of ten years. It means the company's overall financial health was poor during the study period of ten years except in the year 2011-12.

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