



## PREDICTING BANKRUPTCY OF SELECTED TELECOM SERVICE SECTOR BY APPLYING ALTMAN'S Z- SCORE MODEL

### Commerce

**P. Jeyalakshmi**

Ph.D Research Scholar, School of Commerce, CMS College of Science and Commerce, Coimbatore-46, Tamil Nadu, India.

**Dr. N.Ravichandran**

Director, School of Commerce, CMS College of Science and Commerce, Coimbatore-46, Tamil Nadu, India.

### ABSTRACT

The objective of the paper is to predict corporate bankruptcy of selected telecom service sector companies. The study ranges for a period of ten years from 2006-2007 to 2015-2016 for three selected telecom service sector. By applying Altman's Z-score model the study analyze the financial position of the companies and suggests the financial components to be concentrated to improve the financial health. Further the study suggests that the companies should regularly estimate Z-score for making strategies to improve their financial position.

### KEYWORDS

Z-score model, Telecom service sector, Bankruptcy, financial health.

### Introduction

India is currently the second-largest telecommunication market and has the third highest number of internet users in the world. As on 31 March 2016, there were 342.65 million internet subscribers in the country. Telecom service sector plays a crucial role in the economy and has undergone major reforms and restructuring for better financial viability and providing better services to customers. The improvement in the standard of living and the development of infrastructure and connectivity are some of the main reasons for the significant growth of the telecom industry. The growth is expected to be more over the years. Most of the organizations exist with an objective of profit maximization. Telecom service sector also aims to achieve profit maximization, for that the firm needs strong internal & external support. The failure of internal support system such as effective utilization of funds, labour, material etc & external support system such as economic, political & socio-cultural conditions results in bankruptcy of the organization. This paper has made an attempt to analyze and forecast the financial health of Bharti Airtel Ltd, Tata Communications Ltd, Mahanagar Telephone Nigam Ltd by the way of applying Altman's Z-Score model.

### Statement of the problem

Financial soundness of emerging and established companies should be analysed, to convey its financial position to bankers, stock exchanges, bondholders, stockholders suppliers and governmental regulatory. Hence an attempt has been made to study the financial health of selected telecom service sector in India. Financial strength of each organization is studied based on the Dr. Edward I. Altman's Z-Score Model.

### Objectives of the study

To ascertain the financial health of the selected telecom service sector in India. To evaluate the working capital and leverage position of the selected telecom service sector in India.

To offer valuable suggestion for the improvement of financial soundness of selected telecom service sector in the competitive business world.

### Research Methodology

The present study is based on secondary data, collected from the compilation made by the online site www.moneycontrol.com and the annual reports of selected companies for a period of ten years starting from 2006-2007 to 2015-2016. The most popular model, Dr. Edward I. Altman's Multiple Discriminate Analysis has been used as tool to analyze the collected data.

The formula used to evaluate the 'Z' Score analysis for Non-Manufacturing Firms:

**Z-Score bankruptcy model:**  $Z = 6.56X1 + 3.26X2 + 6.72X3 + 1.05X4$

Where,

$X1 = (\text{Current Assets} - \text{Current Liabilities}) / \text{Total Assets}$

$X2 = \text{Retained Earnings} / \text{Total Assets}$

$X3 = \text{Earnings Before Interest and Taxes} / \text{Total Assets}$

$X4 = \text{Book Value of Equity} / \text{Total Liabilities}$

### Zones of discriminations:

$Z > 2.6$  - "Safe" Zone

$1.1 < Z < 2.6$  - "Grey" Zone

$Z < 1.1$  - "Distress" Zone

### Sampling Design

A finite sample size of 3 telecommunication service companies listed on the National Stock Exchange (NSE) has been selected for the purpose of the study on the basis of random sampling method. The three companies are Bharti Airtel Ltd, Tata communications Ltd and Mahanagar Telephone Nigam Ltd(MTNL). The study has been conducted during the year March 2006-2007 to March 2015-2016.

### Analysis and Interpretation of Data

**Table 1**

**Z' Score value of Bharti Airtel**

YEAR	X1	X2	X3	X4	Z	Zones of Discriminations
2007	-2.13	1.86	2.92	0.13	2.78	Safe Zone
2008	-1.43	2.23	2.69	0.11	3.60	Safe Zone
2009	-0.80	2.37	2.57	0.10	4.24	Safe Zone
2010	-0.57	2.70	2.24	0.12	4.49	Safe Zone
2011	-0.81	2.35	1.57	0.08	3.19	Safe Zone
2012	0.14	2.30	1.42	0.07	3.93	Safe Zone
2013	-0.91	2.38	1.40	0.07	2.94	Safe Zone
2014	-0.79	2.60	1.40	0.08	3.29	Safe Zone
2015	-0.70	2.39	1.59	0.05	3.33	Safe Zone
2016	-0.61	1.99	1.20	0.03	2.61	Safe Zone

Source: Computed

From the above table it is clear that Bharti Airtel falls under Safe Zone in all the years since its Z' Score value is greater than 2.6 in all the years. Hence it has satisfactory financial health during the study period.

**Table 2**

**Z' Score value of Tata Communications**

YEAR	X1	X2	X3	X4	Z	Zones of Discriminations
2007	0.46	3.02	1.14	0.17	4.79	Safe Zone
2008	1.59	2.79	0.73	0.11	5.22	Safe Zone
2009	1.37	2.33	0.98	0.06	4.74	Safe Zone
2010	1.79	2.30	0.77	0.07	4.93	Safe Zone
2011	-0.67	2.48	0.78	0.08	2.67	Safe Zone
2012	-0.43	2.48	0.87	0.10	3.02	Safe Zone

2013	-0.30	2.68	1.17	0.12	3.67	Safe Zone
2014	-0.42	2.64	1.11	0.11	3.44	Safe Zone
2015	-0.67	2.76	1.23	0.14	3.46	Safe Zone
2016	-0.59	2.72	0.75	0.12	3.00	Safe Zone

Source: Computed

From this it can be concluded that Tata communications has Safe zone in all the years since its Z' Score value is greater than 2.6 in all the years. Hence it has extremely high and good financial health during the study period.

**Table 3**  
**Z' Score value of MTNL**

YEAR	X1	X2	X3	X4	Z	Zones of Discriminations
2007	2.49	3.08	0.98	0.15	6.7	Safe Zone
2008	2.42	3.09	0.86	0.15	6.52	Safe Zone
2009	2.51	3.09	0.68	0.14	6.42	Safe Zone
2010	-6.11	3.04	-1.2	0.04	-4.23	Distress Zone
2011	-0.39	0.81	-0.25	0.06	0.23	Distress Zone
2012	-0.54	0.27	-0.48	0.05	-0.7	Distress Zone
2013	-0.52	-0.49	-0.78	0.05	-1.74	Distress Zone
2014	-0.22	0.59	3.01	0.04	3.42	Safe Zone
2015	-0.38	0.2	-0.09	0.03	-0.24	Distress Zone
2016	-0.52	-0.09	-0.02	0.03	-0.6	Distress Zone

Source: Computed

From the above table it is clear that MTNL has not good financial position. Because during the years 2010 to 2013, 2015 and 2016 its Z score value is less than 1.1 and falls under Distress zone.

### Findings

Bharti Airtel has Safe Zone in all the years. Hence it has healthy financial position during the study period. Tata communications has Safe Zone in all the years. Hence it has excellent financial position during the study period and there is no risk to fall sick for all the 10 years.

Beginning of the study period i.e. 2007 to 2009 and 2014 MTNL has Safe Zone. After that it has Distress Zone in all the years. Over all MTNL has not a good financial position during the study period. So it is clearly indicates that it may go to Bankrupt in near future.

### Suggestion

During the study period Tata communications has extremely high and good financial position. So it is suggested that Tata communications should maintain its good financial position in future also. Bharti Airtel has Safe Zone in all the years. But in 2016 Z score value is reduced from 3.33 to 2.61 which is nearly border. Hence it is suggested that Bharti Airtel has to concentrate to improve its working capital ratio. During the study period MTNL has not good financial position. Most of the years it falls under Distress Zone. Hence it is suggested that MTNL has to concentrate to improve its working capital ratio, retained earnings ratio, Profitability ratio and Asset turnover ratio to reach the Safe Zone in future.

### Limitations of the study

This study is based on secondary data taken mainly from annual reports and www.moneycontrol.com. Hence the limitations of the published financial statement limitations may be applicable to this study as well.

The study period is restricted to 2007 to 2016. So happening prior and after the study period is not covered. The present study is mainly based on Dr. Edward I. Altman's Z' Score model which has its own limitations.

### Conclusion

The present study has been undertaken to analyze the financial position of three telecom service sector in India for a period of 10 years from 2007 to 2016. By applying Altman's Z-score model the study concludes that Bharti Airtel and Tata communications are in Safe Zone over the period of analysis and MTNL is in Distress Zone for six years.

Bharti Airtel and Tata communications have to maintain their good financial positions. Since MTNL has registered decreasing trend over the period of analysis, it has to concentrate to improve its working capital ratio, retained earnings ratio, Profitability ratio and Asset turnover ratio. These findings and suggestions are useful for further growth and development of companies selected for the present study.

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