Financial Distress Analysis of Selected Indian Pharmaceutical Companies

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Abstract— Financial Distress is the stage before bankruptcy, Financial Distress is the stage where the firm finds itself in difficult situation to pay to its creditors and other stake holders. If attention is not paid or such situation is not relieved, it will result in bankruptcy. There can various reason of Financial Distress, for e.g.: industry weakness, selection of wrong location, poor performance of firm, inadequate capital projection, improper capital structure as well as poor stage of Business cycle etc. All these factors may create problem of survival in long run. The area of distress prediction is of high economic importance, as it affects huge section of society. The present research focus on financial position of selected companies of Pharmaceutical Industry on the basis of 10 years data collected from financial statement of respective Companies using Altman's Z score model. Some of the companies are found to be under bankruptcy zone, these financially sick companies are compelled to take corrective step towards financial restructuring. Whereas some of are under healthy zone and some have become Bankrupt.

Considering the above mentioned concept the current paper throws light on financial distress analysis of Indian pharmaceutical firms through Altman's Z score model.

Keywords— Bankruptcy, Business failure and financial health, Financial distress, Pharmaceutical companies, Z-score.

Introduction

Financial Distress is the stage where the firm finds itself in difficult situation to pay obligation to its creditors and other stake holders. If attention is not paid, such situation is not relieved, it will result in bankruptcy. There can be number of reason of Financial Distress, for e.g.: economic slowdown, demand destruction, shrinking market capitalization, industry weakness, selection of wrong location, poor performance of firm, inadequate capital, improper capital structure as well as poor stage of Business cycle etc. All these factors combinable make the business unsustainable. The area of distress prediction is of high economic importance, especially timely prediction of failure of corporate businesses, as it affects huge section of society. These financially sick companies are compelled to take corrective step towards financial restructuring.

Looking at Scam of big companies and ups and downs of the financial markets have evoked the awareness of the stakeholders and managers are under pressure to get early warning signals about the liquidity positions of the companies. Thus present research work adds to the current knowledge base in the area of pharmaceutical industry and its financial status. The study has been important in views of researcher by taking into consideration the financial condition through Edward Altman‛s Z- score Model of pharmaceutical industry. The researcher has try to shows the whole picture of selected pharmaceutical companies and their various financial factors which affect the industry in various aspects considering 10 years data.

Problem Statement

As these bankruptcies are matters of talk for majority of the stakeholders of the organization. The research is mandated by the current scenario of global financial difficulty which further create credit crunch. The stakeholders can foretell the prospect of bankruptcy in order to respond before they suffer. The problem is that the prediction models, that are under study in this research, the precision, performance and structure of the models change over time periods due to change in population of firms, Business Condition . This paper evaluates Altman's Z score model which have been popularly used in the prior literature to appraise firm health.

Review of Literature

A lot of research has gone into studying and scrutinising the financial health of companies by researcher in different part of the world. Researchers have been trying to find a factors that would serve as the predictor of corporate health and bankruptcy for a long time.

Ray, S. (n.d.). Assessing Corporate Financial Distress in Automobiles Industry of India: An Application of Altman's Model. *Research Journal of Finance and Accounting, 2*(3), 155-168. doi:2011

This paper attempts to investigate that whether Altman's model can predict properly the financial position of the automobile industries. For these researcher have used the data from the period 2003-04 to 2007-08. The study concluded that the performance of automobile industry have declined due to global recession since 2007-08. This shows that though the present situation is viable as per Z score but there are chances of bankruptcy in near future unless regulatory measures are taken.

Ramaratnam, M., & Jayaraman, R. (n.d.). Impact of Financial Strength on Leverage: A Study with special Reference To Select Companies in India. *International Monthly Referred Journal In Management & Technology, 2*, 34-38. doi:May 2013

The paper analyse the influence of financial strength on leverage on 27 companies from different industries. In order to find the liquidity position of the companies Z score was used. It was found through linear regression that at 1% level of significant negative effect was exercised. The study concluded that the beta co-efficient significant at 1% level, it means that financial strength plays a significant role in analysing financial leverage.

S Christina, S., & Karthikeyan, D. (n.d.). Evaluating Financial Health of Pharmaceutical Industry in India through Z Score model. *International Journal of Social Sciences & Interdisciplinary Research, 1*(5), 25-31. doi:May 2012

In the above research paper, researcher attempted to forecast the financial health of selected companies from pharmaceutical industry using Altman's Z score model for 10 years and concluded that there are no chances of any bankruptcy in near future as all are under safe or healthy zone.

Diakomihalis, M. (2010). The effectiveness of Altman's three models in bankruptcy forecast for private hotels in Greece.

The researcher has used three version of Altman's Z score model for estimating the financial situation hotel industry. Based on the result, the unmodified version shows the most accuracy among the three versions. He further concluded that three star and five star hotels are more pronged towards bankruptcy. Two-star hotels meet the least possibility of getting bankrupt.

M. K., & Dr.O. C (2012). Distress Prediction Model- Model for predicting Bankruptcy in Aviation Industry. *International Journal of Emerging Research in Management and Technology,* 15-18. Retrieved February 18, 2016.

In this paper, researcher has selected three aviation firms to find out financial position of these firms using Z score model. It was concluded that Altman's Z-score model provides valuable information and can be used to predict Bankruptcy for firms yielding reliable results.

ODIPO, M., & SITATI, A. (n.d.). Evaluation of applicability of Altman's Revised model in prediction of financial distress: A case of companies quoted in Nirobi stock exchange.

In the above paper, researcher has selected 20 firms, of which 10 companies are continuance listed and 10 were delisted from Naibori stock exchange during period 1989 to 2008. The research reveals that Edward Altman's prediction model is found to be 80% successful in prediction of financial distress.

Objectives of the Study

The main purpose of the present study is to find out financial health of five Pharmaceutical companies of India for the period of 10 years listed on National Stock Exchange in terms of strong, weak and sick using Z score model which is a leading model to predict financial health of any company:

1. To analyze the financial condition of the selected major units of pharmaceutical industry in India.

2. To review the financial result with Altman model.

3. To identify the most prominent financial parameters are affected to corporate bankruptcy in sampled units.

Research Methodology

This paper is purely based on secondary data collected from respective companies Annual Statement. For the analysis, 10 years Balance sheet and Income statements of five companies have been collected from the annual reports of the company available on the moneycontrol.com of respective companies. The study has been undertaken for the period of 10 years from 2007 to 2016. Following random sampling, the sample of the study covers five companies from Pharmaceutical Companies in India listed on National Stock Exchange. These companies are Orchid Pharma, Cipla, Surya Pharma, Dr. Reddys, Sun Pharma.

Limitations of the Study

1. The present research study focuses only on the selected five companies taken as sample of the study from the Pharmaceutical industry of India.

2. The study presents analysis of financial health based on only 10 years' time period i.e from 2007 to 2016.

3. The analysis is done from the financial data available on the websites of the companies.

Theoretical Framework

Edward I. Altman, Professor of Finance in New York University, developed a new technique using Multiple Discriminate Analysis named Z score for computation by combining major financial ratios. This technique is known as. This model has itself as the leading multivariate predictor model of corporate failure and it has been the subject of numerous tests around the world. Z score is a common statistical method of standardizing data on one index for comparison. Z score is the output from a credit-strength test that gauges the likelihood of bankruptcy

Estimation of Z-Score Formula

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 the firms which had survived, with matching by the industry and approximate size (assets). Altman applied the statistical method of discriminate analysis to a dataset of publically held manufacturers. Based on multiple discriminate Analyses, According to Altman, a company's Z score is a positive function of five factors [(2)]

$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5$ (8) Where:

X1 --- Net working capital to total assets (NWC/TA)*100

X2--- Retained earnings to total assets (RE/TA)*100

X3--- Operating Profit to total assets (ROI)

X4--- Book value of the equity to book value of total debt (MVE/TL).

X5--- Net sales to total assets of the company basically it is sales turnover of the company

Although the weights are not equal, the higher each ratio, higher the Z score lowers is the probability of bankruptcy. Using the sample of 66 companies, 33 failed and 33 successful, Altman's model achieved an accuracy rate of 95%.

Z score Measurement Scale For Measuring Financial Health: Altman after presenting his analysis of 66 companies recognized the following scale to measure financial distress of companies:

Recommended Score	**Interpretation (Sickness predicted)**
Z Score More than 2.99	No danger of bankruptcy and company is financially safe & Sound.
Z score from 2.77 to 2.99	The company is on alert to work for betterment in terms of solvency of the company.
Z score from 1.80 to 2.77	It depicts signs of grey areas in the company. Company may go bankrupt within two years if no action or remedy is taken.
Z Score below 1.80	There is definite failure and closure of the company

Altman's Modified Guidelines

If Z Score >2.675	Firms are financially sound.
If Z Score < 2.675	The firm is leading to bankruptcy and ultimately will lead to failure within next two years.

Figure: 1 ANALYSIS & INTERPRETATION OF DATA

Company/Year	2015-16	2014-15	2013-14	2012-13	2011-12	2010-11	2009-10	2008-09	2007-08	2006-07	**Mean**	**CV**
Orchid Pharma	0.344	0.562	0.107	0.107	1.192	1.262	0.623	0.744	1.077	1.036	0.7054	61.05869
Cipla	3.925	4.394	3.889	4.371	4.502	4.261	4.478	3.948	4.407	4.872	4.3047	7.179951
Surya Pharma				-0.899	0.289	1.641	1.611	1.659	1.783	1.426	1.07287	93.88711
Dr. Reddys	3.939	4.488	3.979	3.478	3.866	3.749	3.733	2.895	2.961	4.178	3.7266	13.42239
Sun Pharma	4.150	4.050	5.984	7.068	4.784	5.803	5.976	5.821	5.374	7.446	5.6456	19.70902
Mean	3.0895	3.3735	3.48975	2.825	2.9266	3.3432	3.2842	3.0134	3.1204	3.7916	3.2257	
CV	59.33727	55.84009	70.3138	114.8061	69.98475	56.52895	65.93056	65.85946	57.15635	69.60537		

Figure 2:GRAPH

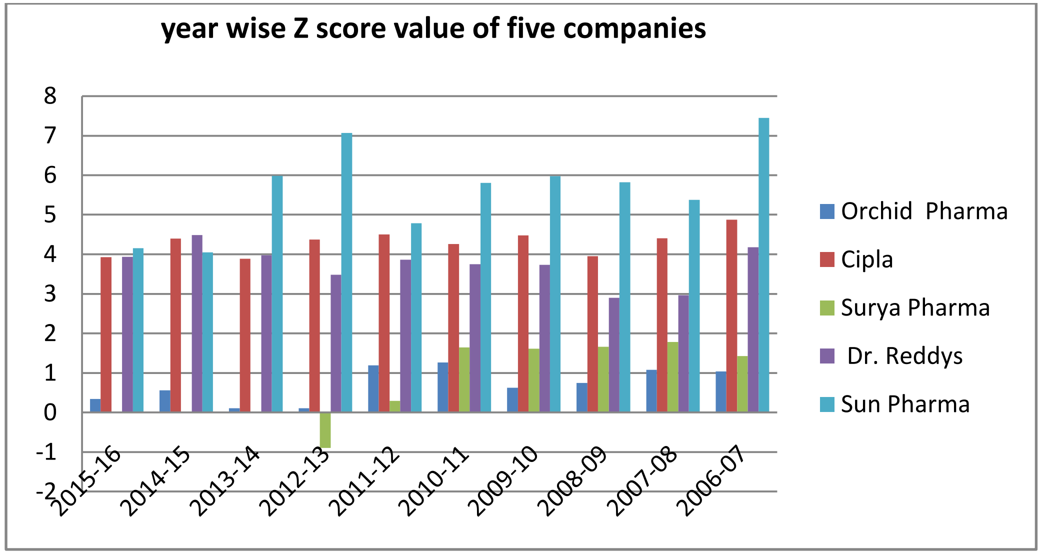

FIGURE 3: STATEMENT SHOWING THE Z-SCORE HEALTHY AND DISTRESSED ZONE FOR SELECTED PHARMACEUTICAL COMPANIES

Sr. No	Name of the Company	MeanZ Score Value	Decision
1	Orchid Pharma	0.7054	Bankruptcy Zone
2	Cipla	4.3047	Too Healthy Zone
3	Surya Pharma	1.07287	Bankruptcy Zone
4	Dr. Reddy	3.7266	Healthy Zone
5	Sun Pharma	5.6456	Too Healthy Zone

Findings

After analysing the Z score health of five companies under the study for the period of 10 years, the average Z-Score of pharmaceutical industries is 3.23 during the period of study. It clearly indicates that Pharmaceutical Industry has a healthy financial position because Z-Score is above the cut off score i.e. 1.8. Further the companies are divided into three categories namely: Sun Pharma reported the highest average Z score (5.6456) followed by Cipla with (4.3047) are under Too Healthy zone, and Dr. Reddy has a mean Z-Score of 3.7266 which falls under Healthy Zone, whereby Orchid Pharma and Surya Pharma are in Bankrupt zone. In fact Orchid Pharma have gone bankrupt in the year 2013-14.

Conclusion

The Altman Z-Score of the companies under study in the pharmaceutical sector shows that the financial health of these companies is healthy: Cipla, Sun Pharma, Dr Reddy. These firms are financially very healthy and have no cause of concern as regards financial health. The Z-Scores of these companies are well above 3 indicating very safe zone. The Z score of Orchid Pharma and Surya Pharma fall in the Bankrupt Zone having Z-Scores below 1.8. Infact Orchid Pharma has gone bankrupt in the year 2013-14. So it can be concluded that the companies of the Pharma sector are financially quite healthy and there is no scope of bankruptcy or any cause of concern as regards the financial health in this sector in the coming years. The investors in this sector have their investments safe. The management also has no reason to worry as regards the financial health of these companies is concerned.

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