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# A STUDY ON FINANCIAL INSOLVENCY POSITION OF SELECTED PHARMA COMPANIES IN INDIA WITH ALTMAN'S Z SCORE

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***ABSTRACT:*** *Perfect financial health of the company is required to survive in the globalized competitive world. If it is not succeed to maintain it has to face many consequences. Shareholders, Prospective investors, government, creditors, financial institutions, creditors are more focused on the financial position of the companies to with which they deal. Financial statements may not reveal complete financial health of the company. Various tools like comparative statements, common size statements, trend analysis, funds flow statements, cash flow statements, decision tree analysis are helpful to analyze the financial health but absolute result can be provided by the 'Z Score Model". It was developed by Edward I Altman to predict solvency position of the company. This model is helpful for early prediction of Industrial sickness. The present paper is an attempt for comparative study on predicts the corporate failure in selected pharma companies i.e. Ankur Drug and Pharma Ltd. and Maneesh Pharma Ltd.*

***Key Words:*** *Financial Health, Industrial Sickness, Prediction Model, Discriminant Equation.*

## INTRODUCTION

Industrial companies contribute major portion to the National Incomes of our country. Successful business organizations are the key factors of growth of nation. But industrial sickness creates huddle to the development of the country. It has various stages like normal Sick, tending towards sick, incipient sick and final stage. Continuous sickness in industries leads to closure. An industrial unit is considered sick when its financial position is not satisfactory and it becomes worse year after year when its current liabilities are more than its current assets the organization may not be in a position to pay its operating expenses. This industrial sickness touches all the industries (Fayza Chowdary 2012). If company becomes sick many reasons are prevailing in the business. The causes for closure or divestment might be many but in most of the cases continued loss played a major in industries became sick. Every industry can be seen as a system working in diversified environment. It operates under the influence of many external and internal factors. Sometimes combination of external and internal factors is responsible for industries to become sick (A.K.M Solayman Hoque 2013). Internal reasons like mismanagement, wrong financial decisions, out dated technical equipments, lack of infrastructural facilities and external factors like availability of raw materials, transportations bottlenecks, financial bottlenecks, and government policies are the reasons for the companies become sick. The consequences of industrial sickness are a serious problem in a country. The economic survey (2011-12) stated that the substantial amount of funds of the financial institutions locked up in these units. Abdul Latif (2014) the entrepreneurs are afraid of industrial sickness as it involves the loss of invested capital, career and huge opportunity cost of intelligent entrepreneurs. Vidushi Sharma (2015) Industrial sickness is growing at an annual rate of about 28% respectively in terms of number of units and outstanding number of banks credit. It is reckoned that as of today there are more than five lakhs sick units with an outstanding of over 7000 crores nearly 29000 units are added to sick list every year. This number is growing day by day. To analyze the company's financial performance ratios are one of the tools. The strengths and weakness of a firm and current financial condition can be determined through ratios

(A.K.M Solayman Hoque 2014). Furthermore ratio with Multiple Discriminant Analysis functions is important to predict financial health of any companies. Financial Health of BHEL (Ranipet) was analyzed with the help of Edward I Altman Z score model. He applied this tool for declaring its position for various investors and creditors (S. Poongavanam & Suresh Babu). Industrial sickness can be identified at early stage with the help of Altman Discriminate Analysis model on selected industrial units in India. Through this attempt corporate failure can be minimized (Dr. Krishna Awatar Goyal 2013). The result from Z score helps in rational decision for revival and rehabilitation for future progress.

The basic Multiple Discriminant Model is used to predict the corporate sickness in any part of the world is Altman's Z score model. This paper makes an effort to determine the financial health of two selected companies from the Pharma Industry in Maharastra State. This analysis is useful for all the users in the business world for their professional purpose and it is a caution sign for the management of the company to know their company financial position.

### A. Objective of the Study

- To analyze the efficiency of the selected Pharma companies
- To examine the overall financial performance of the selected Pharma companies with Altmans Z score.

### B. Research Methodology

The present study is completely based on secondary data gathered from company websites, various journals and books. The study period is ten years i.e. from 2005-2015 of MAneesh Pharmaceuticals Limited and Ankur Drugs and Pharma Ltd. This study is an attempt for comparative analysis on financial health of two selected Pharma companies with the help of Multiple Discriminant Analysis. It is also called Altman's Z score.

### C. Limitations of the Study

- The present study covers only ten years period
- This study is limited to only selected two pharma companies in Maharastra State in India
- The collected data for the present study is purely secondary data

### D. Theory Frame works on Z score

Diagnosing the corporate bankruptcy model was developed by Edward Altman. He used the multiple Discriminate Analysis technique to calculate corporate insolvency. It is a well-known quantitative model which was a set of various ratios applied in a statistical function.

The multiple Discriminant functions is

$$Z = 1.2\, X_1 + 1.4\, X_2 + 3.3\, X_3 + 0.6\, X_4 + 1.0\, X_5$$

Where

$X_1$= Working Capital /Total Assets

$X_2$= Retained Earning / Total Assets

$X_3$= Earnings before Interest and Taxes/ Total Assets

$X_4$= Market Value of Equity / Book Value of Total Debt

$X_5$= Sales / Total Assets

| Situation | Z- Score | Zone | Remarks |
|---|---|---|---|
| I | Below 1.8 | Not Healthy | Failure certain. Financial embarrassment is very high |
| II | Between 1.8 and 2.7 | Poor Healthy | Good chances for the company going bankruptcy within two years. |
| III | Between 2.7 and 2.9 | Healthy | The failure in the company is uncertain to predict. |
| IV | Above 3.0 | Too Healthy | Company health is viable and not fails. It is in safe side |

## ANALYSIS

The following analysis helps to know the level of sickness in the selected pharma companies.

**Table 1:** Various Details of Ankur Drugs and Pharma Mills Limited. (Crores)

| Year | Net Sales | EBIT | Total Assets | Working Capital | Retained Earnings | Outside Liabilities | Market value of equity |
|---|---|---|---|---|---|---|---|
| 2005-06 | 85.63 | 15.95 | 107.85 | 22.11 | 0 | 42.59 | 71.41 |
| 2006-07 | 93.43 | 9.18 | 141.5 | 13.74 | 0 | 55.32 | 46.36 |
| 2007-08 | 62.17 | -4.39 | 155.46 | 33.33 | 0 | 88.36 | 33.57 |
| 2008-09 | 73.3 | -3.35 | 137.38 | 11.21 | 0 | 83.13 | 23.25 |
| 2009-10 | 60.48 | 4.75 | 134.57 | 10.93 | 0 | 83.51 | 22.44 |
| 2010-11 | 111.79 | 11.46 | 300.23 | -57.01 | 0 | 72.28 | 6.67 |
| 2011-12 | 216.1 | 9.21 | 249.56 | -84.32 | 0 | 50.03 | 16.12 |
| 2012-13 | 186.17 | 9.93 | 279.86 | -49.68 | 0 | 90.53 | 14.07 |
| 2013-14 | 196.68 | -1.19 | 308.04 | -58.47 | 0 | 96.83 | 7.65 |
| 2014-15 | 230.52 | -27.03 | 289.32 | -106.09 | 0 | 69.05 | 11.93 |

Source: Ankur Drugs and Phamra Company Limited Website

**Table 2:** Calculations for Various Ratios Used in Z score Model

| Year | $X_1$ | $X_2$ | $X_3$ | $X_4$ | $X_5$ |
|---|---|---|---|---|---|
| 2005-06 | 0.205007 | 0 | 0.14789 | 1.67668467 | 0.793973 |
| 2006-07 | 0.097102 | 0 | 0.06488 | 0.83803326 | 0.660283 |
| 2007-08 | 0.214396 | 0 | -0.0282 | 0.37992304 | 0.39991 |
| 2008-09 | 0.081598 | 0 | -0.0244 | 0.27968243 | 0.533557 |
| 2009-10 | 0.081222 | 0 | 0.0353 | 0.26871033 | 0.449432 |
| 2010-11 | -0.189888 | 0 | 0.03817 | 0.09228002 | 0.372348 |
| 2011-12 | -0.337875 | 0 | 0.0369 | 0.32220668 | 0.865924 |
| 2012-13 | -0.177517 | 0 | 0.03548 | 0.15541809 | 0.665225 |
| 2013-14 | -0.189813 | 0 | -0.0039 | 0.07900444 | 0.638489 |
| 2014-15 | -0.366687 | 0 | -0.0934 | 0.17277335 | 0.796765 |

**Table 3:** Various Details of Maneesh Pharmaceuticals Limited. (Crores)

| Year | Net Sales | EBIT | Total Assets | Working Capital | Retained Earnings | Outside Liabilities | Market value of equity |
|---|---|---|---|---|---|---|---|
| 2005-06 | 239.2 | 57.4 | 305.8 | -48.31 | 0 | 29.91 | 297.71 |
| 2006-07 | 241.96 | 37.22 | 414.11 | -33.66 | 0 | 64.97 | 182.61 |
| 2007-08 | 193.86 | 8.55 | 560.32 | -49.08 | 0 | 169.04 | 106.94 |
| 2008-09 | 178.89 | 24.45 | 564.46 | -75.77 | 0 | 193.41 | 62.05 |
| 2009-10 | 241.76 | 50.00 | 580.66 | -73.5 | 0 | 206.03 | 87.1 |
| 2010-11 | 210.34 | 13.79 | 685.02 | 224.29 | 0.9 | 158.62 | 75.69 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2011-12 | 449.17 | 129.77 | 600 | 344.02 | 4.26 | 275.18 | 44.74 |
| 2012-13 | 170.19 | 57.48 | 654.49 | 334.58 | 7.56 | 260.26 | 40.05 |
| 2013-14 | 189.27 | 14.39 | 700.03 | 252.86 | 0 | 197.46 | 33.73 |
| 2014-15 | 164.27 | -57.21 | 690.28 | 314.11 | 0 | 273.32 | 37.97 |

Source: Maneesh Pharmaceuticals Limited Company Website

**Table 4:** Calculations for Various Ratios Used in Z score Model

| Year | $X_1$ | $X_2$ | $X_3$ | $X_4$ | $X_5$ |
|---|---|---|---|---|---|
| 2005-06 | -0.157979 | 0 | 0.1877 | 6.13774657 | 0.782211 |
| 2006-07 | -0.081283 | 0 | 0.08988 | 2.81068185 | 0.584289 |
| 2007-08 | -0.087593 | 0 | 0.01526 | 0.63263133 | 0.345981 |
| 2008-09 | -0.134234 | 0 | 0.04332 | 0.32082105 | 0.316922 |
| 2009-10 | -0.12658 | 0 | 0.08611 | 0.42275397 | 0.416354 |
| 2010-11 | 0.327421 | 0.00131 | 0.02013 | 0.47717816 | 0.307057 |
| 2011-12 | 0.573367 | 0.0071 | 0.21628 | 0.16258449 | 0.748617 |
| 2012-13 | 0.511207 | 0.01155 | 0.08782 | 0.15388458 | 0.260035 |
| 2013-14 | 0.361213 | 0 | 0.02056 | 0.17081941 | 0.270374 |
| 2014-15 | 0.455047 | 0 | -0.0829 | 0.13892141 | 0.237976 |

**Table 5:** Statements Showing the Z score Health Zone for the Ankur Drugs and Pharma Ltd., and Maneesh Pharmaceuticals Ltd.

$$Z\ Score\ Model\ Financial\ Health = 1.2\ X_1 + 1.4\ X_2 + 3.3\ X_3 + 0.6\ X_4 + 1.0\ X_5$$

| Year | Z score for Ankur Drugs and Pharma Ltd. | Z score for Maneesh Pharmaceuticals Ltd |
|---|---|---|
| 2005-06 | 2.03084036 | 2.89846928 |
| 2006-07 | 1.49371748 | 2.46976136 |
| 2007-08 | 0.79195099 | 0.67080346 |
| 2008-09 | 0.71881397 | 0.49127554 |
| 2009-10 | 0.82460585 | 0.80226947 |
| 2010-11 | 0.32581400 | 1.05453994 |
| 2011-12 | 0.77558478 | 2.25788236 |
| 2012-13 | 0.66254622 | 1.27180484 |
| 2013-14 | 0.44536721 | 0.87415714 |
| 2014-15 | 0.15209827 | 0.59388336 |
| Total | 8.22133915 | 13.3848468 |
| **Average** | **0.82213391** | **1.33848468** |

Here the Altmas Z score value for Ankur Drugs and Pharma Ltd. is 0.8221 and Maneesh Pharmaceuticals Ltd. is 1.3384

**Table 6:** Final Result of Altman's Z score

| SUGAR COMPANY | Z SCORE MODEL FINANCIAL HEALTH | INFERENCE |
|---|---|---|
| Ankur Drugs and Pharma Ltd | 0.8221 | Failure certain. Financial embarrassment is very high |
| Maneesh Pharmaceuticals Ltd | 1.3384 | Failure certain. Financial embarrassment is very high |

## FINDINGS

### Net Working Capital to Total Assets ($X_1$)

Working capital is a life blood of any business organization. It represents current assets to current liabilities. It is required to meet the day to day operations in the business activities. Net working capital to total asset ratio expresses liquidity position which is relative to total capitalization of the company. According to the analysis it is expressed from the table 2 that the ratio ranges between 0.21 to -0.177 for Ankur Drugs and Pharma Ltd. and -0.081 to 0.5733 for Maneesh Pharmaceuticals Ltd. Ankur Drugs and Pharma Ltd working capital is positive during 2005 – 2010 and it is negative from 2011-2015. It has very poor level of investment in current assets which says poor working capital management. Maneesh Pharmaceuticals Ltd has high level of investment in current assets during 2011-15. Its current funds are blocked in the form of current assets instead of investing them in the potential investment. The above analysis proved that all the organizations should be maintained the appropriate working capital without disturbing the liquidity position.

### Retained Earnings to Total Assets($X_2$)

Actually this ratio indicates that how much portion of total assets finance by retained earnings. The retained earnings of both the companies are mentioned Table 1 and Table 5. Ankur Drugs and Pharma Ltd retained earnings are zero during last ten years. Maneesh Pharmaceuticals Ltd. has three years retained earnings from 2010-2013. Based on this ratio it shows that both the companies utilizing more debts rather than retained earnings as well as it indicates both the companies are in losses which leads to bankruptcy position.

### Earnings Before Interest and Taxes to Total Assets ($X_3$)

This ratio expresses operating efficiency and total productivity of the assets. This ratio changes from 0.1478 to -0.013 for Ankur Drugs and Pharma Ltd. and 0.21624 to 0.082 for Maneesh Pharmaceuticals Ltd. The operating efficiency of both the companies is very low. Both of the companies are unable to operate the fixed assets properly from last 10 years.

### Market Value of Equity to Book Value of Debts($X_4$)

The standard form is 1:1 of equity debt mix which is quite good. If debt sources increase them the company has to pay high interest charges. If equity is higher than debt tax rates will be high. This ratio will be used to determine the soundness of the long term financial policies of the companies. The ratio of Ankur Drugs and Pharma Ltd is 1.6766 to 0.0790 constantly decrease from last 9 years where as Maneesh Pharmaceuticals Ltd. also followed the same trend i.e. 6.13 to 0.1389. On the basis of this analysis it may be concluded that the financial mix planning of both the companies are not good. Margin of safety is not good for creditors as well as shareholder.

### Sales to Total Assets($X_5$)

Sales play an important role in the performance of all the companies. Furthermore all the functions in the organization depend on the sales revenue. This ratio measures the performance of assets to generate the sales. If the ratio is low poor the financial management and if the ratio higher better the performance. It differs from company to company. Ankur Drugs and Pharma Ltd has low performance in all the last ten years as well as many fluctuations. Maneesh Pharmaceuticals Ltd. also has been maintained low performance. Both the companies have better equipment and good production level but unable to use the opportunities to improve its sales capacity. It has been a failure to utilise their assets with maximum extent.

## CONCLUSION

The above study identified that Z score ranges below 1.8 for both the companies i.e. 0.8221 for Ankur Drugs and Pharma Ltd. and 1.3884 for Maneesh Pharmaceuticals Ltd. The financial viability of the two companies is not considered as healthy. It is cleared that the financial failure is certain to predict if it is continue in its operations and strategies.

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